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TECHNICAL SESSION - TH28

RISK-INFORMING LICENSE RENEWAL: EXPLORING THE

POTENTIAL

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THURSDAY,

MARCH 10, 2022

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The Technical Session met via Video-
Teleconference, at 10:30 a.m. EST, Brian Smith,
Director, Division of New and Renewed Licenses,
Office of Nuclear Reactor Regulation, presiding.

PRESENT:

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P R O C E E D I N G S

MR. SMITH: Good morning, and welcome to the RIC session on "Risk-Informing License Renewal: Exploring the Potential." We like to think they saved the best session for last.

My name is Brian Smith and I'm the Director for the Division of New and Renewed Licenses here at the NRC. My division is responsible for leading the reviews of both license renewals and subsequent license renewals, as well as new light water small modular reactors.

Before we get started, I want to acknowledge the actions the Commission recently took with regard to subsequent license renewal. The EO, Dan Dorman, addressed this in his remarks yesterday morning and I want to reiterate some of those now.

The staff is working through the Commission's direction as we chart a path forward. As the Commission noted, there's ample time to apply to the decisions to our review process before any plants' initial renewed license would expire. The staff will continue engaging with current and potential subsequent license renewal applicants as we address this issue.

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The Commission also noted that their decisions do not affect the safety reviews and those that are currently under review will continue.

Now back to the topic at hand. Like many other areas in the NRC, we are starting to consider how to best Risk-Informed License Renewal.

Lauren will provide some thoughts that we have in her presentation, but we thought it'd be best to raise this topic here at the RIC and get some feedback before we get too far into our efforts.

Our effort to Risk-Informed License Renewal is also not impacted by the Commission's recent decisions. In our session today, we will hear your presentations, which will be followed by a question and answer period.

As you listen to the presentations, please submit your questions via the Q&A tab on the right side of your screen. We will also have two polling questions. Lauren will introduce those during her presentation and we will see the results at the end of the four presentations.

Here with me today are Lauren Gibson. Lauren is the chief of the license renewal projects here at the NRC. Previously, she served as a project manager

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for flood hazard revaluations as part of the post-Fukushima Lessons Learned Division, a communications project manager for that division, as an acting branch chief for federal, state, and tribal liaison branch, and as a qualified licensing project manager in the Division of Operating Reactor Licensing. She has also worked as a reactor systems engineer and a management analyst.

We have Brett Titus from the Nuclear Energy Institute. During his 20-year career in the nuclear -- in the field of nuclear power, Brett has held several positions in the industry with the regulator and now as the licensing director at the Nuclear Energy Institute.

In this role, he serves as the NEI lead for the License Renewal Task Force, which includes a focus group dedicated to leveraging risk insights and aging management.

We also have Jessica Bock, who was with Ameren at their Callaway Nuclear Plant. Jessica is their cable and transformer programs engineer. She received her electrical engineering degree from Missouri University of Science and Technology and has 10 years of electrical engineering experience in the

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field of nuclear, substations, and designs.

Since July 2020, Jessica has supported EPRI with a pilot on leveraging risk insights on medium voltage cables and scope of the license renewal inaccessible non-EQ cable aging management program.

And finally, we have Drew Richards from the South Texas Project Nuclear Operating Company where he is currently the regulatory affairs manager. He joined the South Texas Project in 1990 in the licensing department.

Since then, he has worked in various groups including thermal hydraulic analysis, probabilistic risk assessment, and operations. During this time -- during his time in the PRA group, Drew was involved in the development and approval of the industry's first risk-informed technical specification application.

He is the chairman of the PWR Owners Group Licensing Committee, and is also a member of the Technical Specifications Task Force.

Thank you all in advance for preparing these presentations and being here today, and now for our first presentation I'll pass it to Lauren Gibson.

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She'll discuss NRC's views on risk-informing license renewal.

Lauren?

MS. GIBSON: Thank you, Brian, and good morning to everyone. I'll wait just a moment for my slides to come up. We'll continue without them.

I'm excited about exploring the potential here. The NRC has been moving towards becoming a modern risk-informed regulator in so many areas and now it's time to consider it for license renewal.

Yay. There's my slides. Thank you very much.

Today, I'm focused on the opportunities that can happen during the licensing phase.

Next slide, please.

This is the basic question for us. Can licensees use formal risk insights such as probabilistic risk assessment or 10 CFR 5069 as part of the license renewal application?

The answer is yes, they can do so in limited ways. Next slide, please.

One of the most common questions I get about this topic is, isn't license renewal a deterministic rule?

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Yes. Yes, it is. But probabilistic risk assessment may play a role as the NRC discussed in the original statements of consideration for the rule, which are shown here on the slide.

However, it cannot be used to avoid managing the aging of a structure's system or component. This point was reiterated in the statements of consideration for 10 CFR 5069, which stated that components could not be excluded from the scope but that the risk information could be used to justify why an alternative treatment meets the criteria for managing aging.

Next slide, please.

Here are the ways that I can envision using risk information in licensing. There's the assessment of aging management review line items, there's the enhancements or exceptions within the aging management programs, and then there's scoping and screening.

I'll note that using it for scoping and screening would require an exemption. We'll go into more detail on each one of these in the next few slides.

Next slide, please.

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First, aging management review line items. An aging management review line item already considers the material, aging effect, and the environment. Why not add the risk significance of the component?

There would be a few challenges. Applicants may not have already categorized all the structures' systems or components that are in scope for license renewal.

So this would be additional work and not every item would necessarily fit neatly into a category. The potential benefit is that the NRC could consider the risk categorization when determining the depth of our review for that particular line item.

For example, maybe we don't ask the third round REI in something of low risk significance. However, and it is a big however, exactly how applicable is PRA to the period of extended operation? We'd really want to dig into that further.

Next slide, please.

Next are the aging management programs. This is something that can be done, in my opinion,

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more easily -- using risk information to support enhancements or exceptions.

The aging effect would still have to be managed but exactly how it is managed may differ. It could be used to either justify more or fewer inspections.

From what I've seen, I think risk insights and engineering judgment are already used in many of the requests for exemptions -- exceptions.

For example, operating experience could be used to have a one-time inspection instead of multiple inspections. So using risk information is not that far off from what is currently happening.

This approach, the risk information can be reviewed by the NRC right now under our current framework. More difficult, however, is what's on the next slide, please.

Next slide, please. Thank you.

And that is the scoping and screening. After all, the deterministic process for scoping and screening is actually part of the rule.

However, an applicant could request an exemption from the rule. They could request a narrow exemption for a particular structure system or

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component or they could request an alternate method of scoping and screening entirely.

That would have a big effect on the application if approved. Either exemption approach would probably take a lot of effort both from the licensee to justify and from the NRC to review.

In my opinion, it would be less effort to simply risk inform how the aging effects are managed.

Next slide, please.

Again, these are the potential areas that we brainstormed. Right now, under our current framework, we are only prepared to review applications that include the middle option. Please click again and we'll see if the animation works.

That's the underlined one right there. So we're prepared to do that.

Next slide, please.

But wait. What if the renewed license has already been issued? Has the opportunity passed the licensee by? Not necessarily.

Consistent with the conditions of the renewed license, licensees can evaluate whether or not the changes can be made using the criteria in 5059.

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This would then be subject to inspections commensurate with how we treat our other 5059 evaluations. So it wouldn't necessarily be too late if the license has already been issued.

Next slide, please.

So what do we do next? The NRC has formed a team and we're staying up to date with what NEI and the licensees are doing. We're looking at the recent letter that was submitted by NEI. I believe you may hear a little bit more about that later.

Right now, we're going to do what the agency does best. We are going to ask questions. So there are two live polling questions in this session.

You can see those right next to where you would input your questions. There's another tab that says polls. So you can go there and pull it up. You should be able to find those there.

We're asking, first of all, do you think we should risk inform license renewal, and if we should, what's the best way to do it with the best use of resources? Please answer these questions.

We're going to be using them to help us gauge interest and to help inform our path forward.

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We'll look at the results of those polls later in the session after the other presentations.

Speaking of the other presentations, next slide, please.

This is our necessary disclaimer. The NRC has not formally reviewed or approved the processes described in the industry presentations today.

With that, I'll wrap up my presentation now so we can hear about the industry's plans. Thank you.

MR. SMITH: All right. Thank you, Lauren.

Our next presentation is from Brett Titus, who will present on leveraging risk insights and license renewal.

MR. TITUS: Thank you very much for the introduction, Brian, and great presentation, Lauren, to set the stage for the conversation today.

We're really pleased to be invited to speak here. We definitely applaud the NRC's efforts to become a more modern and risk-informed regulator and we think that the area of license renewal is ripe for that -- for infusing some risk insights.

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So during our presentation today, we're going to focus on, essentially, the second path that Lauren was discussing, kind of risk informing at the implementation stage within aging management.

Next slide, please.

If you look kind of at the conglomerate of all RIC activities and topics that are ongoing right now, a lot of the emphasis is around new reactors, small modular reactors, and the future of nuclear power.

We absolutely support that and -- but there's, essentially, a bridge of time between now and when those reactors are going to be ready for operation, and a lot of climate goals and carbon reduction goals are on more aggressive time lines than the small modular reactors and advanced reactors coming to power.

So the gap that we intend or that we see to fill in that space is, essentially, the renewal of our operating license light water reactors.

And so what I've decided to start with here is a quote from the DOE's Light Water Reactor Sustainability Program talking about how reliably and economically nuclear power has served the country in

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the past.

It remains the single largest contributor of nongreenhouse gas-emitting electric power in the United States, and extending the operating lifetimes of these plants is going to be essential to support the nation's energy needs of supply, reliability, and diversity.

So using that as the backdrop, and you have to look no further than the current news energy that surrounds the energy sector and what's going on in the United States to know that we have a finite amount of resources and we think that risk informing license renewal and the continued operation of these plants is the best way to use our resources on the most safety-significant plant equipment.

Next slide, please.

So what I've got here is a snapshot of the license renewal status and these slides were prepared a little bit in advance of the decision that Brian spoke about at the beginning of the presentation.

But, essentially, what it shows is that the majority of operating reactors in the United States have already gone through the license renewal

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process and we are making plans for the rest of the fleet as they look at subsequent license renewal and moving forward with extending the operation.

So for each one of these plants, you know, as Lauren mentioned, there is an opportunity for ones that have already gone through first license renewal to look back and use the 5059 process to further enhance the implementation of their aging management programs and focus those finite resources that I spoke about onto the most safety significant or risk significant SSCs.

So but this is just kind of a picture of what licensees viewed in the future of plants that planned to submit subsequent license renewal applications and, you know, we do look forward to a timely resolution of the environmental aspects that were brought up earlier.

But in the meantime, we'll just kind of focus on the safety piece.

So next slide, please.

What you see here is a snapshot also of the history of how risk insights have developed over the years. So you see that since 1995 we know that the NRC has made serious strides to become a more

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modern and risk-informed regulator and the industry has definitely been supportive of those efforts.

You know, a lot of the key elements here like the maintenance rule and risk-informed license amendment requests, et cetera, have really bolstered our knowledge about which components at the plants are the most risk significant, where we should be spending our resources, and how we have looked at the importance of these particular SSCs in the past.

So I thought it was interesting, and Lauren mentioned 5069 in particular -- we know that there's some symbiosis between the statements of consideration in Part 54 and 5069.

So here you've got kind of a graphic representation of where we see the opportunities to use risk insights from 5069 for those nonsafety-related high safety significance or safety-related low safety significant elements.

As you see from the next bullet there, there's also opportunities to take insights from risk-informed technical specifications or risk-informed part fire protection efforts in NFP 805, and each one of these efforts has led us to new conclusions about SSCs, and there are risk insights

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that have been, largely, unrealized that could be leveraged in aging management program implementation.

So you know that the licensees in the industry have heavily invested on site-specific PRA models and that adds to the quality and the level of detail over the last 30 or so years.

And while the focus of each risk-informed application may be different, there are insights through direct and indirect links that have to do with aging management.

A lot of people recognize that aging management in and of itself and aging mechanisms are not modeled within PRA. But we do believe that there are insights to be gained.

We believe that there -- EPRI has developed a framework that we're going to talk about a little bit here that allows risk insights to be looked at and, as Lauren mentioned at the implementation stage, perhaps changing the frequency of inspections or using other mechanisms to focus those safety resources.

There were actually two pilot plant evaluations. Jessica is going to speak about one of

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them during her presentation, and there was another on selective leaching that showed both a business case and a focus on safety that leverages these risk insights.

Next slide, please.

So, again, this is a pretty busy slide with a lot of information in this particular flowchart that was developed by our technical folks at EPRI and some of our subject matter experts within the industry.

I'm not going to go through it in detail, but it, essentially, lays out the same process that Lauren was talking about, that there is the scoping and screening and aging management aspects.

We definitely support more conversations on there. Up until now, the industry has primarily focused its efforts on the implementation process. That's someplace that we know we can expand the use of risk insights without, perhaps, you know, rulemaking and some of those other regulatory processes that would involve more of a significant investment in time and resources.

But you see the different red boxes that call out there. What we're really looking at is how

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can we leverage those risk insights to determine how significant the contribution of that particular SSC is.

What is the information we can glean from these existing PRAs and other risk programs that we won't need to invest a lot of changes to the PRAs?

So you see down there at the bottom at the implementation stage, that's where we focused our efforts. That's where we see kind of a more immediate bang for the buck, if you will, and we think that there's an opportunity to continue putting our resources on the most risk significant elements.

Next slide.

This is a visual representation, essentially, of the intersection of all of these concepts coming together to make the holistic risk-informed aging management program, you know, decision-making kind of matrix that we're going to talk about.

Each of the individual AMPs, you know, it's important to understand all of the concepts that play in -- the role, the scope, and how they overlap between the different pieces of risk information, and how we can modify those AMPs in a safety-focused and

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resource-focused manner so as to get the, essentially, most efficient implementation of those aging management programs that have been approved.

The intent is not to take PRA results in or risk-informed is directly into this particular new aging management approach but to adapt it, and then just use those things that we already know and the insights that are already there in a manner that is technically adequate.

Next slide.

So in both Drew and Jessica's presentations you'll see very specific examples of how these principles were implemented and -- but here on this slide is, essentially, the output of the generic EPRI process and framework.

It's, essentially, a heat map that has the ability to take different aging management programs and to develop them into these heat maps where you can look at what the risk significance is and the likelihood of failure for different SSCs.

These were developed, again, as I mentioned, for the pilot plants, looking at the medium voltage cables, non-EQ cables, and selective leaching, and those insights were used to tweak and

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tailor the aging management programs to achieve some relief, if you will, or some reduction and ensure that the safety of those aging management programs was still realized but with -- more focused on the safety significance of the components.

Next slide, please.

So Lauren had mentioned that, yes, in fact, based on these two pilot plants we did submit some markups through the NRC guidance documents that have to do with selective leaching and inaccessible cables, and we look forward to more conversation about those.

As Lauren mentioned, you know, there's no regulatory decisions here made today. But I think this is a great opportunity for sessions like this at the RIC to talk about where we start in the conversation and where we have the ability to go in the future.

I really am encouraged by the conversation around licensing, scoping, and screening, those aspects of risk informing, and so we're definitely going to get our members and the industry thinking about those topics and where we can continue to expand.

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But when it comes to implementing aging management right now, we're focused in the near term on publishing this EPRI report with our colleagues there.

And, overall, we think it's most efficient to not look at individual aging management programs and submit markups kind of on a regular basis.

So the long-term plan is to develop a more generic technical report out of NEI that looks at how to apply this risk-informed framework to -- on a regular basis or on a more generic basis, I should say so that licensees can take this and look at each of the individual AMPs that makes the most sense to them and they would realize the most benefit from and apply that framework on a site-specific and AMP-specific basis.

So we do, again, applaud the NRC for its efforts here. We look forward to talking more about implementation, licensing, and any other opportunities to streamline the process.

And so with that, I'll just wrap up and be ready for any questions at the end of the presentations.

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MR. SMITH: All right. Thank you, Brett.

I just want to put out a reminder before we go to the next speaker that if you do have questions, please go to the Q&A tab on the right side of your screen.

We also -- as another reminder, we have two polling questions. So please click on the polling tab as well and please respond to our questions and we'll get to those at the end of the presentations.

So our next presentation is from Jessica Bock, who will present on the Callaway Cable Pilot Example.

Jessica?

MS. BOCK: Thank you, Brian.

Good morning. My name is Jessica Bock and I'm the cable engineer at Callaway Energy Center, and today I'm going to present a high-level overview of EPRI's risk insights framework and the Callaway pilot performed on inaccessible cables.

So, hopefully, we can get our slides pulled up. Thank you. Next slide, please.

First, I'd like to offer a little

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background. This process started with the EPRI initiative for exploring the possibilities of risk-informing aging management.

Callaway participated in this effort in a pilot on XI.E3 aging management program for inaccessible non-EQ cables and this AMP focuses on the aging of cables from moisture and, particularly, this pilot focused on medium voltage cables.

And this then has the possibility of a large scope of cables, which require more significant time and resources to perform all the required testing.

In Callaway's case we are evaluating commitments from (inaudible) Rev. 2 which has a six-year test frequency. But in 2017, EPRI performed an assessment that showed cable failure rates for medium voltage cable did not increase until the interval exceeded 10 years.

So the objective of the pilot was to perform or provide a solid technical basis using risk insights for extending the test frequency of some low-risk cables from the six-year to a ten-year frequency and the desired outcome of this approach would reduce efforts for cables with lower likelihood

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of failure and limited plant impacts while focusing resources more heavily on cables with more significant risk.

Next slide, please.

This slide provides an overall picture of the framework that we utilized for its insights, which includes likelihood and consequence aspects of the cable failure.

On the likelihood side, the criteria and scoring was developed based on cable characteristics impacted specifically by water-related degradation and each cable was scored and the likelihood of failure was established.

And then on the consequence side, the consequence can be approached using various existing processes such as PRA model 5069 and each cable is, again, evaluated and consequence of failure is established.

Then you take the likelihood and the consequence outcomes and integrate them into the risk matrix, and depending on the position the cable lands in the risk matrix would indicate whether a cable should remain at a frequency of six years or less or whether there may be justification to extend the test

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frequency to 10 years.

Next slide, please.

So the first step in the process was to develop a likelihood table, and the likelihood aspects were developed specifically for cable degradation due to wetting for this AMP and the goal was to create a likelihood index that can work for most plants with minimal effort and minimal alterations.

The parameters were determined, scored, and weighted based on the influence to that failure mechanism and scoring ranges were developed.

Now, when it comes to the consequence of cable failure, typically that consequence remains the same unless there's a significant design change or evaluation change.

However, likelihood is more of a living process. So as more inspections or testing is performed, assumptions are verified, conditions may change over time, or perhaps the cable is replaced with a different type, then this would trigger a verification of the likelihood scoring to see if the change has shifted the overall risk on that final matrix.

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And based on the structure of this risk insights framework, this can be verified quickly and simply uses the inspection and testing data.

Next slide, please.

So with the time available, I won't go into too much detail on this slide, but it provides information on the likelihood index that was created.

We evaluated seven design categories that were specific to water-related degradation. So we looked at the insulation type vulnerability to water treeing, level of water exposure, shield type, number of splices, voltage rating, energization time, and the results of tan delta testing.

We then determined standard outcomes for each category and how strongly they are influenced by that degradation mechanism. They were then weighted and scored from zero to five, with five being the highest likelihood, and each cable then received a score for each category and those scores were added for an overall likelihood score.

Next slide, please.

So I do need to provide a bit of a disclaimer first. As mentioned in a previous slide, the likelihood is more of a living process and so

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these results shown in this presentation and included in the EPRI publication were based on available testing and inspection data at the time this pilot was performed or, in some cases, assumptions of conditions were made since we're still in pre-PEO, and so we haven't completed all activities yet.

And so some of these results or current status of these cables may have changed since then and additional testing and inspections have been performed.

But based on the information we had during the pilot, each Callaway cable was evaluated and scored individually for likelihood. We had a total of 111 individual medium cables and scope. So we broke those down into 59 test groups to simplify this evaluation for this presentation.

We had 43 tested groups that showed in the low likelihood, 12 in the medium low, four in the medium high, and no cables, in this case, in the high likelihood.

Now, this weighting was actually expected for Callaway toward that lower likelihood due to the cable and installation types that we currently have installed at Callaway, as well as the watering

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systems installed in many locations so far, and other plants with different cable types or environments will likely have different likelihood of results and might be weighted a little bit differently than Callaway's.

Next slide, please.

So the next step in the framework was to determine the consequence of failure for each cable. Consequence evaluations can use existing plant PRA processes.

So some plants may decide to utilize, for instance, 5069 data. But since Callaway does not yet have 5069, we utilized other existing PRA models and also enhanced those with qualitative information, and this successfully demonstrated that different methods already available at the plant can be utilized.

So for the other pilot with selective leaching, they were able to use 5069 data, and for us we were able to use other PRA models and it showed that this can be beneficial in both ways.

So the consequence evaluation was focused on a single failure of the cables and the loss of all associated connection equipment. So this can sometimes include a multitude of downstream

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components depending on the circuit design.

So the equipment of the highest plant impact in the connected system was evaluated to ensure the consequence was not underestimated.

Now, what we did not do is evaluate the potential for additional damage or multiple failures and the reason for this is it can easily overcomplicate the process with potentially unquantifiable outcomes and we felt that this would defeat the overall purpose of this evaluation to simply identify the consequence of that cable failure.

Next slide, please.

For consequence in the case of Callaway, we evaluated each cable and we performed an initial screening to verify the results were -- you know, where we had expected and, for us, we determined the best fit for high consequence included components that were PRA risk significant with RAW greater than two, and then the low consequence included components that were not PRA risk significant or RAW less than two.

However, there were some cases we had components that were not PRA risk significant but a

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failure of the cable we felt had an elevated consequence to the plant.

This could include, you know, plant trips or partial trips, perhaps a higher significance to the plant or nonsafety with impacts to safety systems.

And so for these cases, we created a medium consequence category to evaluate the overall consequence of these cables for conservatism and we wanted to make sure that we had those elevated for conservatism.

And so each cable was evaluated and classified as low, medium, or high consequence. In this case, we had 16 fall into the low consequence, 13 into the medium, and 30 in the high.

And in this case, the weight toward the high consequence was more expected for Callaway since we had a number of cables, for instance, in scope that were safety related.

Next slide, please.

The next step is to take the likelihood and consequence scores and create a risk matrix. We then created three regions of proposed actions.

So as you can see toward the right side

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of the screen, the cables that fell into the higher regions of the risk matrix represented the highest risk cables.

So for those we proposed an action of keeping the cable testing at a frequency of six years or less and what this does is ensure that the high risk cables are tested on a more frequent basis.

On the opposite end of the spectrum in the lower regions of the matrix for cables considered low risk, we proposed that this evaluation could provide technical justification to consider extending to a 10-year test frequency.

And then we also created a yellow band in the middle for an overall medium risk cables where we proposed either keep the test frequency at six years or less, or if you wish to extend it to a 10-year frequency you must have a solid technical engineering justification.

So, overall, we still wanted to ensure that we focused on the safety aspects and avoid failures and so consequences were built into this matrix and propositions with a heavier bias toward the six-year or less frequency to ensure those cables with a high likelihood or consequence of failure

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maintain more rigorous testing requirements.

Next slide, please.

So we then plotted each Callaway cable into the risk matrix based on our likelihood and consequence of each cable, and overall, of the 59 test groups, 54 of those fell into either the low risk or medium risk ranges where we considered the possibility of technical justification to extend to a 10-year frequency.

And then there were five test groups that we suggested should remain at a frequency of six years or less.

Two of those ended up falling into the higher risk range, as you can see there in the orange cells, and then there were three test groups that, even though they scored in the medium risk range but based on OE and expected condition of those cables, we did not feel like there was adequate engineering justification to extend those cables to 10-year frequency unless they were either repaired or replaced.

And, again, as we kind of discussed earlier, as conditions change, more inspections and testing are performed over time, some of these cables

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may increase or decrease in that likelihood and could potentially fall into a different risk range, and from there then they would need to be further evaluated to make sure we're still applying the proper risk to each cable.

Next slide, please.

So this slide provides some insights from the pilot. The implementation of this framework, we feel, would add flexibility and reduction of burden for low risk cables and would also reduce inherent risks of intrusive maintenance or maintenance-induced failures.

There could be many things that happen during maintenance. You could get high-resistance connections, termination damage, or other potential damages due to simple maintenance performances.

And we performed a basic cost evaluation with a range of approximately \$6,500 to \$17,000 per test, and this is really based on complexity of different cable circuits.

So each test avoided or eliminated would avoid those costs, and with the pilot results, if -- in an ideal situation if all 54 justified test groups eliminated two test occurrences in a 20-year period

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-- and this is mainly based on Callaway's structures of surveillance frequency, so some plants may differ on how many voided tests they might have.

But we did a calculation and estimated this can save about \$600,000 and, in addition, more cost avoidance could occur if this framework is expanded to other AMP requirements and then, again, additional cost avoidance over time for subsequent license renewal.

And so based on the solid foundation of the framework we developed, we are actually looking into other potential applications for license renewals such as low voltage cable testing or, potentially, even inspection requirements, and even outside a license renewal on the Callaway side I've actually found this beneficial for the cable management program for risk evaluations and evaluating maintenance strategies.

So this framework could provide a variety of beneficial applications.

Next slide, please.

So that's the end of my presentation today. Thank you all very much. I appreciate this opportunity to present this framework.

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MR. SMITH: Thank you, Jessica.

I mentioned early on that we had a couple of polling questions -- that we had two. We were only able to put one up initially. So when we get into the Q&A session and we talk about the results from the first poll, the second poll will then become -- made available. We'll probably answer a couple of questions and come back to the polling results.

All right. (inaudible) Drew Richards, who will present our risk-informed approach for aging management programs.

Drew?

MR. RICHARDS: Right. Thank you. Good morning, and good afternoon, and good evening to our international friends. I'd like to thank you for this opportunity to present efforts that we're taking at South Texas Project to risk inform our aging management programs associated with license renewal.

I don't know if we saved the best for last but I'm going to give it my best shot here.

Next slide. I'm waiting for my slides. Well, I'll go on.

So the next slide in my presentation is really to provide a reference to the Statement of

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Consideration for 10 CFR 5069. We have already discussed those in previous presentations and, you know, I'm not going to read these to you but in Section 2.4.10.8 of the Statement of Consideration for 10 CFR 5069 it does discuss the applicability to 10 CFR Part 54 for license renewal and so I do want to point out just a few items there.

It does state that 10 CFR 54 was identified as a candidate special treatment requirement and also the NRC staff suggested that no changes are necessary for Part 54 to implement 5069 either before renewing a license or after license renewal.

The South Texas Project, or as I'll refer to it as STP, is unique with respect to 10 CFR 5069, we are not a 5069 plant per se.

STP was the proof of concept pilot for risk significance categorization which led to the NRC granting STP over 20 years ago an exemption from special treatment requirements for low safety significant components.

STP's pilot effort did lead to the development of 10 CFR 5069. In fact, 5069 is, largely, based on the STP exemption. One item

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related to terminology that you may hear me talk about the STP component categorization designations preceded those in 10 CFR 5069 for safety related, which are risk one and risk three components, and for non-safety related components, which are risk two and risk four.

For the safety significance, STP has high, medium, low, and nonrisk significant. High and medium for STP would relate to 5069 safety significant -- once again, risk one and two -- and the low and nonrisk would relate to the low safety significance, which is risk three and risk four.

And, finally, on this slide, regarding license renewal, STP has received its renewed operating license from the NRC but we will not enter our period of extended operation until 2027 for Unit One and 2028 for Unit Two. So STP did verify that our previously approved exemptions would be valid for a period of extended operation.

Next slide, please.

So this slide shows some key station considerations at STP. Risk-informing license renewal aging management programs, or as we sometimes call them AMPs, at STP will provide a significant

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advantage.

STP has comprehensively categorized over 100 plant systems and in doing this we looked at two types of categorizations.

First, what we call GQA, which stands for graded quality assurance, this risk consideration comports to nuclear safety risks.

Our GQA risk at STP is based on both qualitative information and quantitative risk metrics, which are the same qualitative information and PRA importance measures that are used for 5069.

We do have a second type of categorization that we call PGR, which is plant generation risk, and this is simply the risk to electrical generation, and that's not only plant trips but transients that could cause a reduction in plant generation output.

So due to our head start on component categorization, STP's fully integrated categorization data into station processes including our databases such as our master equipment database, for STP categorization has been and will continue to be the backbone for risk-informed operational effectiveness and efficiency, including during our

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period of extended operation.

Our component risk categorization does provide a technical basis for establishing an effective program scope and treatment of these components commensurate with their importance to plant safety and also on reliable plant operation.

Next slide, please.

Continuing with our key station considerations, our aging management programs scope still remains the same. That is, our scope of 41 AMPs remains unchanged. However, STP will be applying alternative treatment for GQA low and nonrisk components, which once again would be risk three and risk four, and STP does not anticipate any deviations for safety-related high and medium risk components, or risk one components, unless approved industry approaches are developed, including risk-informed approaches, and I believe Brett alluded to some of those in his presentation on items that NEI are working on.

Now, for risk two components, which are the nonsafety related components that are high or medium risks, STP will conduct engineering evaluations to determine if these components would be

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in the scope for alternative treatment.

So an example of a risk two component at STP will be an instrument air compressor. So addressing these risk two components there is a safety benefit that we actually gained because by using the categorization we have identified nonsafety components that are safety significant, and we'll address those appropriately commensurate with their risk.

So, once again, due to our categorization experience, South Texas Project can use our existing processes to alternatively treat many of these components. This includes our existing preventive maintenance program, inspection programs, and our corrective action program.

And each Aging Management Program or aging management plan will be evaluated for risk-informed potential as appropriate.

All right. Next slide, please.

I won't go into a lot of detail on this slide. You know, we saw in Brett Titus' from the Nuclear Energy Institute in his presentation, he had a very similar slide from EPRI showing the current license renewal aging management review.

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So what South Texas Project did is we took that same figure and we added the green boxes on the slide to show the process steps that we added for our site-specific AMP views.

Of note, I'll add that we added steps for specifically enhancing safety and identifying efficiencies by identifying the risk significance of components within the scope of an AMP.

Our aging management programs will be risk informed from beginning to end and, of course, once again, if the industry pursues initiatives for further risk-informed components that do make it through the screening process, STP may elect to incorporate those initiatives into our process as well.

Next slide, please.

So this is my final slide and on this side I'd like to discuss some of the benefits of risk informing our aging management programs.

Paramount, of course, is nuclear safety. STP wants to apply the appropriate resources to components commensurate with their nuclear safety significance.

Operationally, this will result in

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increased availability of systems, structures, and components due mostly to a reduction in outage time during the performance of aging management program requirements.

This will also provide a personnel dose benefit, which is keeping with the ALARA concept -- you know, as low as reasonably achievable -- and will also result in burden reduction while focusing our AMP activities on items that are most important for nuclear safety.

From the standpoint of aging management program effectiveness, this effort will result in an increase in safety effectiveness and focus for many of our aging management programs.

Although every AMP will be evaluated, the degree to which any specific AMP will be risk informed will vary. So I provided on this slide several examples of AMPs that STP has evaluated for cost savings and I'll go over some that are included on the slide and one or two that aren't. But these what I'll call potential cost savings.

So, one -- the first one we have identified potential cost savings of approximately \$2 million for one-time inspections.

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Of the 220 components that we originally scoped, we would apply an alternative treatment to about half of these components such that only 104 would have full treatment, and once again, as Lauren pointed out, we're not removing components from the scope. We're simply applying an alternative treatment based on their categorization.

We have also identified approximately about \$2.5 million savings for replacement of aluminum-bronze components due to selective leaching and these things are commonly associated with replacement of six pumps and several valves.

We have also identified about \$600,000 potential savings for external surface inspections, and this is about reducing the number of inspections in inaccessible areas and we can realize some savings from scaffolding and insulation removal.

And a final example for tank inspections for internal surfaces, we have identified about \$500,000 of potential savings due to reduction in the number of tanks that we have to look at when we look at them.

And so we have looked at other AMPs as well. But we're currently estimating savings that

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can be on the order of up to \$10 million throughout the period of extended operation. You know, this isn't savings we'll get all at once but over the period of extended operation.

But, you know, instead of putting the savings directly into our pockets, so to speak, what STP can do is further invest in the plant to address items that are -- that have risk significance.

That's all I have for my prepared remarks. Once again, I appreciate the opportunity to present our efforts to risk-informed aging management plans for license renewal.

MR. SMITH: Now if we could look at the polling. For the first polling question, let me get those up.

Lauren, you may have to help me here. I cannot see the polling results clearly.

MS. GIBSON: Yes or no to risk-informing license renewal. Generally, yes. There were 14 percent of the respondents who were not on board with this plan. Or we could concentrate on the 86 percent for.

MR. SMITH: All right. So that's the bulk on the side here, that 86 percent of the people

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have said yes to risk-informing license renewal and that's, I would think, what we were expecting.

So also, Lauren, I may need your help with asking the questions. I'm having some technical difficulties on my end here. If you could lead us through a couple of questions.

But in the meantime, Nick, if you could put up the second polling question, make that available for folks, and we'll come back to that in a few minutes.

MS. GIBSON: All right. Shall we go ahead with the first question that we received then?

MR. SMITH: Yes.

MS. GIBSON: Okay. This was a question for me. It said, why wouldn't industry just put off risk-informing aging management until after they have been granted their renewed license and then just do it under 5059? There's much less currently typically applied to those applications.

This is a path that they could take. Personally, I hope that they wouldn't, but they could if they wanted to. However, it comes at some risk because we don't -- you're still being evaluated under the 5059. And although those so far may -- the

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perception is that they've had less scrutiny, in these cases, there may be more scrutiny than normal for 5059 in this -- in risk-informing aging management programs.

So there would probably be less regulatory risk for a licensee to actually come in with it as part of their license renewal application.

Thank you. Would anyone else like to comment on that? All right. I don't see anyone else jumping in. So let me -- oh, I see that our poll has popped up.

Brian, are you able to roll through that or would you like me to look at it?

MR. SMITH: Yeah. If you could take us through that, that would be great.

MS. GIBSON: For those 86 percent of you who said yes and the 14 percent who said no, we were asking which areas would be the best use of resources to risk-informed and I see that the numbers are still changing.

The options were use 5069 risk insights for line items. That one just went up by a point when I recalled it out. So that's interesting.

The next one is modify scoping and

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screening, which would require rulemaking. There's some interest in that one as well but not as much as the other ones.

Three is develop 5059 guidance to address the implementation of aging management programs. But the one that has gotten the most interest is modify agency guidance to more explicitly allow risk information at the licensing phase.

So agency guidance -- it appears that we are the ones who have work to do in this area. Thank you for your input. But I do want to note that none of these had a zero. So there is interest for all of these different options from at least some participants today.

Thank you, Brian.

MR. SMITH: All right. If you could lead us through the rest of the Q&A session. I have totally lost my ability there.

MS. GIBSON: Sure, not a problem.

MR. SMITH: Sorry.

MS. GIBSON: Okay. The next question is for you, Brett. Is your basic assumption that your process will always lead to a reduction in licensee burden or is it possible that the process may also

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reveal non-conservative assumptions in current aging management programs?

MR. TITUS: It's a good question, Lauren. Thank you. Thank you to the person that asked it.

I think, in general, people wouldn't be investigating areas where they didn't think that there was some advantage, right. We wouldn't be spending resources in areas where we didn't think there was at least the possibility of some sort of reduction.

So I'll start with that as kind of the basic premise. But as you heard very well articulated in Jessica's conversation that sometimes we get results that we maybe weren't expecting or maybe we get some results that ended up in the gray space and another decision needs to be made.

So I think Jessica mentioned, in particular, there were some results that ended up kind of in that medium risk category for those particular cables and the site made a conservative decision and said, look, we don't have quite the basis to alter the treatment for these particular SSCs.

And so that's always a possibility when you do more, you know, investigation and licensees

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have shown that they continue to make good decisions when those come along.

So I think that answers both aspects of the question. But if anyone else from the industry or on the other side has some more to add, feel free.

MS. GIBSON: Just jump right in.

All right. I'll move on to the next question. This one, I believe, is best for the NRC. So I will both ask the question and answer it myself, and if anyone else wants to chime in as well, of course, you're welcome.

PRA analysis for 5069 already includes sensitivity studies that include increasing failure rates of low-ranked components by a factor of three and then assessed against Reg. Guide 1.174.

How does the NRC factor this information in when assessing the benefit of performing full scope AMP inspection or replacement requirements?

Now, for my answer, that's a level of detail that we haven't quite wrestled with yet. We do have risk analysts on our team to evaluate the approach. So we'll be taking it on a case by case basis at this point.

Would anyone else like to comment?

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Okay.

MR. SMITH: Lauren, this is Brian.

MS. GIBSON: Yes?

MR. SMITH: (inaudible) questions submitted and there was another question that came in that was PRA related and I'll read that one now since we're talking about PRA.

So if PRA is to play a role in the license renewals, new data will be needed. For instance, injuries, aging related component failure rates.

Do you think there's sufficient data available at this point to support such applications? I'll take that one and others can weigh in if they - - if they would like.

So another activity that might have (inaudible) of materials in here. So we do all for NRR. And so one of the activities that we're doing is looking at risk-informing materials applications.

This is a new initiative that we -- that we're kicking off and we really haven't talked much about it in the public, if at all, yet.

But so the first step in that is looking at things that we have already been doing in the review of certain types of applications, like, for

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alternative requests, relief requests, things along those lines and kind of documenting it in one place the approaches that we have taken.

The next step would be putting out a guidance document for applicants to use for future applications and that's going to take some time and it's going to take some work with the PRA folks. So we are working with research to help us in that area, but it's going to take some time.

So, Brett or Drew or Jessica, anything they'll chime in with respect to existing data for PRAs, you can?

MR. TITUS: Thanks, Brian.

I think I'll just say that -- something I mentioned in my presentation. We're, largely, looking at ways to leverage the risk insights that already exist from other programs -- NFP 805, risk-informed ISI, 5069, et cetera -- without necessarily diving in and adding a bunch to existing PRAs about aging management in particular. And so that's where we have been focusing our efforts to start with.

Of course, you know, if there are advancements made in risk modeling and as you guys start to go through your efforts on that side to

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implement more materials information and aging management into the PRAs, then, of course, we'll -- you know, we'll be there to support that as well.

But I think our efforts to this point have been focused on what can we glean from that information that we already have.

MR. SMITH: All right. Thanks, Brett.

MR. RICHARDS: I'll just add, and Brett said it so well I don't have much to say. I was going to say what he said.

We have so much data and experience that we still can use to make these decisions and risk-inform these programs that, you know, I think we got a lot to dig through where we would not necessarily have to go add new functionality, new options, new analyses to our PRA right now.

But, certainly, something that we can look forward to as we get into our period of extended operation.

MR. SMITH: Okay. Thanks, Brett and Drew.

So we'll go to a question for Jessica.

You said you didn't want to over complicate the analysis by considering multiple

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failures. But if seeing such an evaluation would be needed this process is used to reduce (inaudible) frequencies for multiple components in different systems. Can you comment on that statement?

MS. BOCK: Yeah, absolutely.

So as far as different components in different systems, each component, each cable, was evaluated separately. And so if you have two components in two different systems, then you would want to evaluate a failure on each one of those cables separately.

And as far as that comment that was made, this was referring more to something like collateral damage from a catastrophic failure like a fire, for instance, or multiple faults at the same cable line, which in that case, is statistically quite rare.

And so, in a sense, if we were to look at every potential option for collateral damage, in a sense, this would require evaluation of pretty much every foot of cable in the system and determine any potential components that could be included in that collateral damage, which is nearly impossible to bound.

You know, if the fire were to spread to

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multiple locations or -- you know, the possibilities are endless. And so, you know, we wanted to determine the consequences of every one of those components.

But the bottom line is the most common fault type is a single ground type fault for a cable, which is what we evaluated for loss of that cable while still ensuring the conservatism with evaluation of the highest risk cables and the highest risk components in that system.

And so, you know, we didn't want to over complicate it by expanding the possibilities to something that we couldn't put a hard bound around and make the -- it was pretty much over complicated process to the point where you wouldn't be able to have any evaluation that was to the point of what happens when this one cable faults.

I hope that kind of helps, you know, sum that up a little bit.

MR. SMITH: Okay, thank you.

So there was a question that came in about making the slides available to everyone. I want to let everyone know that the presentations are available on the NRC's RIC. They're also pretty easy

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to find.

Scroll down just a little bit. You'll see it. You'll see some links to the agenda and in there will be the presentation.

All right. So a question for Drew. Would the use of risk as a means to eliminate aging management for some SSCs result in a run to failure approach for a large number of SSCs whose failure was currently intended to be minimized by the Part 54?

MR. RICHARDS: So I guess the short answer to that question is no. When we evaluate different maintenance strategies for our components, certainly, a run to failure could be a maintenance strategy.

But, no, we would apply our risk insights and our categorization and look at what the particular functions are for the equipment and, you know, in all cases, that would not lead to run to failure. I guess that's the simple answer to that question is no.

MR. SMITH: Okay. All right. So, Drew, I guess, another question for you here.

On slide five, would the screening of NRS SSCs be consistent with the criteria to scope in

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nonsafety--related that could prevent safety function?

How does identification of NRS SSCs -- that would remove them from the aging management review and so the potential indirect effects of failure of the NRS SSC on the safety function as required by Part 54?

MR. RICHARDS: So once again, I'll start with the short answer to that question and the answer is yes, it would be consistent with the requirements of 5054.

So one way that we look at the indirect effects of failure of any components, as I discussed in my presentation, one of our risk categorization areas we look at is what we call our GQA risk, our graded quality assurance risk, and that's a blended risk-informed evaluation where we not only look at the quantitative results for that, we look at the qualitative and it's real similar to what's in 5069.

You know, we asked questions about are they described in our emergency operating procedures? Do they contribute to a plant trip? Do they cause the failure of safety-related components?

So we do ask those questions in our

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qualitative part and we blend that in with our GQA categorization.

MR. SMITH: Okay. So items that would (inaudible) you would still apply some set of controls, if you will, on those, going forward. Routine general maintenance and such?

MR. RICHARDS: Yes. One of the things I mentioned, too, in my presentation, you know, we have had 20 years to do categorization and talked about how we integrate that in our plant databases, and in our master equipment database for all the components we have categorized we have detailed information on what the -- the functions that we evaluated against for that GQA ranking and what system functions they apply.

So anyone in the plant can pull up a tag number in the plant, look at the component, see how it's ranked for graded quality assurance, how it's ranked for plant generation risk and also see the risk functions, and all that information together helps us make the right decisions and do the right things.

MR. SMITH: Okay. Thank you, Drew.

Looking at the next questions. Go to --

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going to some other -- a different set questions for Lauren.

Has the NRC used risk insights in their license renewal reviews at all yet, and if so, how?

MS. GIBSON: We haven't used them in a very formal way. We do consider the relative risk of different systems when we review them. But we don't go below the floor of what's in our standard review plan to review.

So it hasn't been used very extensively, and there's definitely more room for that. Thank you.

MR. SMITH: Okay. All right. A question for Brett. (inaudible) report detailing framework and estimated completion time for the NEI technical report on risk insights for aging management?

MR. TITUS: So I think -- you broke up just a little bit on that question, but I think the question was about what time frame are we looking at for that more generic documented technical report? Is that accurate? Okay. Yeah. So --

MR. SMITH: Yes, and the NEI question. Yeah.

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MR. TITUS: The NEI technical. Sure. Yeah. So thanks for that question, Brian. That is something that we're trying to do within this calendar year within the License Renewal Task Force, which is kind of our NEI group of experts that we rely on.

There is a focus group associated with risk insights and leveraging those risk insights. So we're drawing from a team of subject matter experts within the License Renewal Task Force and working closely with our EPRI colleagues as well to generate that particular generic document and we plan to have it to the NRC before the end of the calendar year.

MR. SMITH: Okay. Thank you, Brett.

MS. GIBSON: Brian, we have had some more questions come in. Would you like me to ask one?

MR. SMITH: Yeah, if you would.

MS. GIBSON: Okay. The Commission Statement of Considerations on Part 54 state, quote, "The Commission considers that at the present time appropriate aging data and models have not been developed for many SSCs for inclusion in the PRAs," end quote.

Are the aging data and models adequate to

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reasonably use risk information to remove in scope structures, systems, and components from aging management review?

I'll answer that first from the NRC perspective and then I'd really like to hear from the industry on this one.

From my point of view, that's an open question. That's something that we need to dig further into and part of what Brian mentioned earlier with the materials work that we're doing will help inform that.

Anyone else?

MR. TITUS: So I'll chime in, at least from what I know what.

I think you heard from the presentations today, all three of the industry ones, that we're not really looking right now at necessarily removing in scope SSCs. What you saw was a focus on right sizing or making the treatment of those particular SSCs commensurate with the safety significance.

As you mentioned, Lauren, the scoping and screening would probably require rulemaking of some kind that would be -- or an exemption, perhaps.

So what you've seen us focus our efforts

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on right now is at the implementation phase, not necessarily removing elements from the AMPs in their entirety but are we treating them properly, are we looking at them with the right frequency commensurate with their safety significance.

So that's kind of how I would answer that question.

MR. RICHARDS: And I guess I'll add a little bit more to what Brett said. I don't know that we necessarily need to add more detail modeling to account for the failure and unavailability of components because if a component is out of service, then it's accounted for in our PRA and our PRA updates. And once again, we address those components through our categorization process.

That's really all I have to add on that one.

MS. GIBSON: Thank you.

Brian?

MR. SMITH: Some technical thing I'll see every once in a while and I've totally lost it all again. So I don't know if you can help me out.

MS. GIBSON: Okay. Here's another question, Brian. This is for either you or I. Since

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I'm asking the question you can answer the question.

Has the pandemic made an impact on current policy and procedure on risk-informing -- risk information provided for license renewal?

MR. SMITH: No. No, the pandemic has not. We have continued our reviews pretty much the same way we would have done them in the past.

The only difference is that instead of doing some onsite audits of licensee information (inaudible) the licensees are able to provide documents in what they call an electronic reading room.

This is the document provided to us for formal review on (inaudible) but made available to us as if they would have been made available to us in an onsite audit. So that's really the only difference.

MS. GIBSON: Okay, thank you. The next question is for Jessica.

One of your slides indicated that the emergency diesel generators were in the medium risk category. Can you speak to the basis behind this conclusion?

MS. BOCK: Yeah. That's a great question. So, obviously, (inaudible) the diesel

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generator cables are safety related with the RAW greater than two, and so they did fall into the high consequence category.

However, based on the assumptions made during this pilot, these cables -- and based on a previous bore scope inspection we had done on a spare conduit show that these cables, we assume, were dry.

So the spare conduit was dry and so the cables were dry. It's also a cable type installed where the risk of water-related degradation is low. So the installation type is a good insulation for long-term reliability under submergence. It also has no splices so that reduced the likelihood.

And so, overall, the likelihood was low, and so what it did for us is it put us in the high consequence low likelihood category, and from there, that's when it fell into the medium group of either leave it at a six-year or less frequency or have an adequate justification to extend it to 10 years.

And so if the assumptions can be proven of the cable is dry, the cable test good, and overall, the likelihood is low, then that would be one of those cables that we might be able to consider extending to a 10-year frequency.

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MS. GIBSON: Okay, thank you. Let's see.

Brett, here's a question for you. NRC evaluated EPRI's recommended guidelines for tan delta cable testing and concluded that adequate cable test data has not been made available from NPPs for statistically significant basis for endorsing EPRI recommendations.

Since this would be a component of applying risk information for cable AMPs, are there plans underway to provide additional actual test results from NPPs?

MR. TITUS: So I appreciate the question. I think it might be a little bit inappropriate for me to speak on behalf of EPRI and what their plans are for the future.

But I can say that we'll definitely keep our operating experience lines of communication open as people, you know, look at these particular cables and whether or not they do experience failures across the industry. We have really great communication mechanisms for recording these kind of reliability aspects.

And so I can't speak as to whether there's going to be a concerted effort that focuses

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exactly on this. But we do have a number of communication and operating experience channels in place that we'll keep our, you know, ear to the rail, as it were.

MS. GIBSON: Okay, thank you. The next question is for you, Jessica.

Risk equals likelihood times consequence. Doesn't the definition of risk imply that the risk associated with the most likely failure mechanisms needs to be considered but also those scenarios that are less likely would have higher failure consequence, for example, some multiple failure scenarios to ensure that risk is being appropriately managed?

MS. BOCK: Sure, and that's a great question. So, you know, as far as this AMP is concerned and this evaluation is concerned, we were focusing on what is the AMP's purpose and that is to avoid failures for submergence -- for the water degradation in water.

And so, typically, with water related degradation, this is a nonhomogeneous failure mechanism. Typically, when you have a water tree it occurs at a single high stress point.

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And so the idea of collateral damage or multiple failures is rare and it's not necessarily justified by OE that's seen in the industry.

That particular failure type of collateral damage or fire from a submergence type failure is very rare and, you know, the types of failures that might create that collateral damage are not necessarily evaluated under this AMP.

And so the focus we wanted to make sure that we focused on was what was the most common failure type or a submergence or water related type failure.

And so, again, we did provide many conservatisms in that risk matrix, and so even for those that did have the higher consequence, we wanted to make sure that we put the conservative in there and either kept them at a six-year frequency or less to make sure that we could, you know, test those more often, make sure they're still going to be all right.

Or if they are dry, if they are in good condition and we can prove that via testing and other inspection methods, then perhaps consider those up to a 10-year frequency with the understanding that if something changes and the overall risk changes or the

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likelihood changes, then we go back and reevaluate that cable of, you know, what additional actions do we need to do, going forward.

MS. GIBSON: Okay, thank you.

The next question is for Brett Titus.

On slide five, what is the definition of active components that are not subject to aging management review? Does this include components in standby such as diesel generators?

MR. TITUS: That's a good question and I think that there's a lot of information in the regulation itself and in the corresponding guidance that lines up with how to scope and screen in different components. In general, though, the passive long-lived components are things that don't have active function, right.

Obviously, kind of by definition they don't change states as they perform their design functions. So something like the diesel generator itself, obviously, is an active component.

Even if it's in standby mode most of the time when it performs its design function that it changes states. It starts up. It does something physical.

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A lot of the things that you've heard about today are things like cables, right. They don't change state when they're called upon to do their function. Piping structures and components, those kinds of things.

So without, you know, going through one of the guidance documents and reading the definition out loud, that's kind of the space that there's a definition distinction between active components and passive components.

And yes, active components screening is through a different process, as you know. And I know if you want to add, though, the regulatory perspective on that or the regulatory definition, I'd be happy to hear your perspective. But in layman's terms, if you will, that's kind of how I think about it.

MS. GIBSON: We think about it slightly differently. We're looking at the functions of the component, not necessarily whether or not there's a change in state.

So in some cases, we may have a diesel generator, for example, that has a pressure boundary function. then we would consider the preservation

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of that pressure boundary function to be something that needs to be considered.

So we're not just looking at whether or not the component is active or passive. But we're looking at the functions that we care about for license renewal as well.

Would anyone else like to comment on that?

Okay. let's go ahead to the next question. This is for you, Mr. Richards.

License renewal application would involve aging related issues and particularly with passive components. What are your thoughts on the applicability of the use of Reg. Guide 1.174 and Reg. Guide 1.177 related criteria?

MR. RICHARDS: Thank you for that question. What are my thoughts on the applicability of those two regs? Well, whenever we do anything risk informed or having to do with PRA information, we always use Reg. Guide 1.174 and the limits within.

So I don't see why we would do anything different or have to take any exception to that. I mean, they're -- we have been using those Reg. Guides for over 20 years and they've served us well. So I

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don't see us doing anything different at all.

MS. GIBSON: Thank you. We are going to take one more question and then I'll turn it back over to Brian.

For the NRC -- for Brian -- is the NRC prepared to review the future license renewal and subsequent license renewal applications that are expected to be submitted?

MR. SMITH: So the short answer is yes, and there's a bit more to it for a long answer version of it. So are we prepared? So we have to look ahead. As we prepare our budgets, we're required to prepare our budget, essentially, two years in advance and so to ensure that we're prepared, we need information from future applicants and they do that through various means -- submittals of letters of intent.

We use that. They help inform our budget. We also -- occasionally, we'll put in a planning wedge and we have done that over the last couple of years, based on a survey that NEI had done of the industry of their plans to submit future license renewal applications.

And so we have done that. We're also

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revising a regulatory issue summary right now -- it should be out before too long -- that asks for notification for future submittals. So I know that the NEI survey was done several years ago.

So I don't think anything changed and so we'll balance this risk to try and get them more information for our planning purposes.

And so it's with this prior notification that there was going to be an increase in the level of work that we would have time to be able to staff up and be ready to do those reviews.

So bottom line, yes, we're prepared to do the reviews over the next couple of years.

Okay. we are almost out of time. I want to thank everyone again for your participation today. it's been a great discussion.

As we proceed with our efforts of risk-informing license renewal, we will be reaching out through public meetings to gain additional input and feedback.

So we greatly appreciate the feedback today, the answering of the poll question. We'll get those final results and we'll definitely factor that into our planning.

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And we look forward to working further with NEI and the industry as we develop our plans.

So please enjoy the rest of your day, and this closes our session.

Thank you, everyone.

[Whereupon, the above-entitled matter concluded.]

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