Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: 719th Meeting of the Advisory Committee on Reactor Safeguards

Docket Number: N/A

Location: teleconference

Date: 10-03-24

Work Order No.: NRC-0053 Pages 1-180

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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719TH MEETING

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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THURSDAY

OCTOBER 3, 2024

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The Advisory Committee met via teleconference at 8:30 a.m. EDT, Walter L. Kirchner, Chair, presiding.

COMMITTEE MEMBERS

WALTER L. KIRCHNER, Chair

GREGORY H. HALNON, Vice Chair

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ACRS CONSULTANTS

DENNIS BLEY

STEPHEN SCHULTZ

DESIGNATED FEDERAL OFFICIAL:

KENT HOWARD

P R O C E E D I N G S

(8:30 a.m.)

CHAIR KIRCHNER: The meeting will now come to order. This is the second day of the 719th Meeting of the Advisory Committee on Reactor Safeguards, ACRS.

I'm Walt Kirchner, Chair of the ACRS. ACRS members in attendance in person are Ron Ballinger, Vicki Bier, Greg Halnon, Craig Harrington, Robert Martin, Scott Palmtag, David Petti, and Thomas Roberts. ACRS members in attendance virtually via Teams are Vesna Dimitrijevic, and I believe Matt Sunseri.

Consultants with us today I believe are Dennis Bley and Steve Schultz. If I've missed anyone, either members or consultants, please speak up.

Kent Howard of the ACRS staff is the Designated Federal Officer for this morning's meeting.

Any members with a conflict of interest were identified for today's meeting. And I know we have a quorum.

During our session of today, the Committee will receive an informational briefing and update on the status of the restart of the Palisades Nuclear Power Plant.

The ACRS was established by statute and is

governed by the Federal Advisory Committee Act, or FACA. The NRC implements FACA in accordance with its regulations. Per these regulations, and the Committee's bylaws, the ACRS speaks only through its published letter reports.

Therefore, member comments should be regarded as only the individual opinion of that member and not a Committee decision.

All relevant information related to ACRS activities, such as letters, rules for meeting participation, and transcripts, are located on the NRC public website and can be easily found by typing about us, ACRS, in the search field on the NRC's home page.

The ACRS, consistent with the agency value of transparency in regulation of nuclear facilities, provides opportunity for public input and comment during our proceedings.

We have received no written statements or request to make an oral statement from the public, but we have set aside time at the end of this meeting for public comments.

A transcript of the meeting is being kept and will be posted on our website.

In addressing the Committee, the

participants should first identify themselves and speak with sufficient clarity and volume so that they may be readily heard. If you are not speaking, please mute your computer on Teams. If you are participating by phone, press star-6 to mute your phone and star-5 to raise your hand on Teams.

The Teams chat feature will not be available for use during this meeting. For everyone in the room, please put all your electronic devices in silent mode.

In addition, please keep sidebar discussion to a minimum, since the ceiling microphones are live.

For presenters, these table microphones are very unidirectional and you need to pull them up in front of you and speak directly into them.

Finally, if you have any feedback for the ACRS about today's meeting, we encourage you to fill out the public meeting feedback form on the NRC's website.

Since we anticipate a high level of public interest in this meeting, which was the first opportunity for ACRS to hear from the NRC staff and licensee about the process for the potential restart

of the Palisades Nuclear Plant, the bulk of the meeting will be set aside for the licensee and staff presentations to the ACRS and for ACRS members to ask questions.

We ask members of the public interested to wait until the designated portion of the agenda to make any comments at approximately 11:30 to 11:45.

As stated in the agenda, we have set aside 60 minutes for members of the public to make statements. However, we'll have to reevaluate this and the time of each comment if a significant number of individuals participate.

There's not enough time to hear from everyone in the public comment period. You may submit a written comment to today's designated federal officer, Kent Howard, at kent.howard@nrc.gov.

And with that, I am going to turn to my colleague, Greg Halnon, who is our plant operations subcommittee chair.

And before I do that, I just note that we have a hard break at 1:00 o'clock Eastern Time today, as this room is scheduled for another purpose.

And with that, I'll turn to Greg.

VICE CHAIR HALNON: Thank you, Walt. And

I'm going to be a little bit redundant on some of your comments, because they're important.

I would like to say that the Committee is looking forward to hearing from the licensee and the NRC staff about the general process of the potential restart of the Palisades facility and also the technical and regulatory challenges that both already see in that process.

This is a very unique topic, and this is the first formal opportunity the Committee members have to hear about the path ahead and what role the ACRS may play in the process.

We've been following the news on this facility and potentially other facilities considering potential restart, understanding there is a likely a lot of public interest.

I will also note that there have been several other public meetings to educate the public and other stakeholders about the regulatory process.

The purpose of this meeting is for the Committee to receive information so that we can understand what is planned for the Palisades restart. We will likely have a lot of comments and questions for both the staff and Holtec officials. This Committee

has experts in plant operations and many technical areas such as risk, materials, and reactor physics.

And just a reminder, comments you hear from individual members do not constitute a Committee position. The Committee speaks as a body through its letter reports on any topic.

At the end of this session, the Committee will discuss plans for future arrangements for potential letter reports. At this time, there is no plan or requirement for the ACRS to issue a report, as at least we understand at this point.

There will be an opportunity at the end for public comment after substantive discussions. This will likely occur around 11:45 as scheduled.

Due to the anticipated high number of public stakeholders who may be interested in commenting, we ask that when that time comes, keep comments brief and to a point, and I will repeat these comments again as we go into public comment time.

And again, one final note that the chat feature in MS Teams is disabled for many folks. If you are having any technical issues, you raise your hand on MS Teams. We will deal with that. If you're on the phone, then star-5.

With that, I'd like to turn it over to the NRC staff and Jason Kozal to start the presentation. Jason? There you are. Make your opening comments and then you can introduce the applicant.

MR. KOZAL: Hi, good morning. I'm Jason Kozal. I'm the Director of the Division of Operating Reactor Oversight in Region III. I'm also one of the co-chairs for the Palisades restart.

First, I'd like to thank the Committee for the opportunity to have our team here to discuss our activities and approaches for the project.

Today, you'll hear from the panel chairs and key staff on important regulatory topics. It is important to note, however, that the effort in these topics has truly been an agencywide effort.

NRR, NSIR, NMSS, the Office of General Counsel, the Office of Public Affairs, Office of Congressional Affairs in Region III, have all played vital roles in ensuring panel activities are consistent, legal, efficient, and most importantly, safe.

Many of these individuals are in the room and are attending virtually and are ready to contribute if needed.

Without further ado, I'll now turn it over to Ms. Jean Fleming who will provide Holtec's opening remarks and introductions.

MS. FLEMING: Good morning. I'm Jean Fleming. I'm the Vice President of Licensing and Regulatory at Holtec.

We appreciate the opportunity this morning to present to the ACRS the project status of the Palisades restart, and we expect to dive into the regulatory path, our licensing submittals, and the major project milestones in as much depth as we can given the status of the project to date.

I will be brief, because we have a lot to dive into, and if we're ready we can start with the topics.

VICE CHAIR HALNON: Yes, go ahead.

MS. FLEMING: Okay, thank you. Next slide, please. So, Holtec this morning will be presenting the regulatory path along with the project milestones.

That includes all of the licensing submittals to date. We will review our project overview as well as the systems, structures, and components to readiness, inspection, and testing,

reliability, and proven modifications, and requesting any questions as we go through. Next slide, please.

For introductions to the Holtec staff, again, I'm Jean Fleming, the Vice President of Licensing and Regulatory for Holtec.

MR. JERZ: Good morning, I'm Joel Jerz. I'm the Director of Engineering at Palisades.

MR. SCHULTHEIS: Morning, Mike Schultheis, Director of Regulatory and Site Strategies.

MR. MIKSA: Hi, good morning, I'm Jim Miksa, a Manager at Palisades of Regulatory Assurance.

MS. FLEMING: I will note that we do have individuals on the line and they will be available to participate remotely if Joe requests support.

VICE CHAIR HALNON: So, Jean, one point real quick. The court reporter is online, so anyone who is online or even in the room, state your name and comments so that he can make sure that it's appropriately recorded.

MS. FLEMING: Understand. Thanks. Next slide, please.

So again, our intended purpose and outcome is to provide a summary of the major activities that

support the reauthorization and power operations and policies, with the intended outcome to inform the ACRS of HDI's actions to address the important aspects of reauthorization of power operations. Next slide, please. Jim?

MR. MIKSA: Hello, once again. I'm Jim Miksa, Holtec Director of Engineering, National Manager of Regulatory Assurance at Palisades.

And the next few slides, we're going to walk over some of the key aspects of the reauthorization of power operations at Palisades from a regulatory perspective and some of the actions we've taken to date.

So in June 2022, Palisades ownership, the license was transferred from Entergy Nuclear Operations to Holtec Decommissioning.

A couple of important points about the transfer was that Palisades was already in a decommission license basis by that transfer.

So Entergy Nuclear prior to transfer had already filed a certification of current cessation of power operations and current rule of fuels from reactor under 58.2, and also had transitioned the power operations tech specs to a decommissioning tech specs format prior to Holtec becoming a licensed owner.

So license transfer was for decommissioning purposes only and Holtec Decommissioning International is authorized for a decommission of plant only.

Also note, the current renewed facility operating license does not authorize Holtec Decommissioning to receive new fuel or place fuel in the reactor. Next slide.

In March of 2023, and in May of 2023, public meetings were held with the NRC where Holtec presented a proposed regulatory path and framework in order to reauthorize power operations at Palisades.

The main components was presented and the regulatory path was through an exemption to 10 CR 58 2a, for the purpose of a line rescinding the certification of permanent cessation of power operations and current renewal of fuel from the reactor vessel that was submitted by Entergy.

Holtec's path was also based on partly the information associated with the previous denial of rulemaking and that existing regulatory framework for latest amendments and exemption requests, were satisfactory in order to reauthorize operations.

So it was a previous request for rulemaking

for the specific effort to reauthorize the plant's power operations after its certified going into decommissioning.

And it was determined at that time that the current regulatory framework supported that, that that was our --

Regulatory framework in essence relies on reversing the actions taken when a plant transitions into decommissioning.

A lot of the actions plants take when they enter decommissioning, they change their license to facilitate the decommissioning of the plant, remove some of the operating restrictions, and also to reduce the need for like seed reactor operators to go to certified fuel handlers, as an example.

CHAIR KIRCHNER: Jim, was there a PSDAR? I think that's -- was a shut down in decommissioning activities report prepared?

MR. MIKSA: Yes, it was prepared and submitted.

CHAIR KIRCHNER: And do you work your way backward from that? Do you have to undo that as well?

MR. MIKSA: Yes, so it was actually earlier this year an update to the PSDAR, to identify

that the plant was no longer currently pursuing decommissioning, but the plan is to pursue the project to reauthorize power operations.

So the PSDAR is still in effect. It's still under decommissioning licensing basis. We've made an update that identified that we're pursuing a project for reauthorization.

Once we transition back to the power operations basis, the PSDAR will once again be changed and in fact may be withdrawn and resubmitted.

CHAIR KIRCHNER: Thank you.

MR. MIKSA: At a later date.

VICE CHAIR HALNON: One other question I had, you're going to walk through regulatory and how you're backing out of that, but there's also a lot of other things that are done when you transition from operations to decommissioning, and many of those are done two years prior to actual shutdown.

Like capital projects are cancelled, upgrades are cancelled, surveillance is maybe extended beyond.

Are you going to go into what that aspect of the shutdown is also going to be reversed?

MR. MIKSA: We're going to touch a little bit on that in a later presentation as far as -- but

in general, all of those things would be reviewed prior to start up with the goal of ensuring we're in full compliance with the power operations license basis at the point at which we make that transition.

VICE CHAIR HALNON: And you've got that list of things that you -- those are physical things are being mapped out as well?

MR. MIKSA: Correct, yes, any type of order or initiative, we'll talk a little bit about those and future sites.

VICE CHAIR HALNON: Thanks.

MR. MIKSA: And then finally, the last bullet here is by essentially retracing the steps we did when we did decommissioning, we can have a continuum in our licensing basis for Palisades and will document this period of decommissioning and then the period of going back to power operations in our legacy basis.

So it's not a stop and start continuum for Palisades.

VICE CHAIR HALNON: So before we go on, Dennis, one of our consultants, has a question. Go ahead, Dennis.

DR. BLEY: Thank you. Dennis Bley. Are you going to talk about what was the status of the plant

before it was decided to shut it down?

I don't remember. Had they been through a license renewal? That sort of thing.

MR. MIKSA: Yes, we are going to cover that. Palisades was in its first license renewal period when the plant was shut down for age.

DR. BLEY: Okay, and one last kind of organizational question. I know Holtec from your activities summary design, but more in waste and decommissioning.

What kind of experience does the Holtec team have in actual plant operations? And how will you beef that up if you need to?

MS. FLEMING: We have an organizational slide that will talk through the staffing a little bit later in the presentation.

DR. BLEY: Perfect.

MR. MIKSA: Next slide. So, later in September of 2023, the first legacy action which was a submittal of request for exemption to termination requirements of 10 CR 50.82(a) was submitted, the actual regulation has no allowance to rescind the certifications once they're docketed.

So this exemption is for the sole purpose

of allowing the rescinding of that into essentially, reset the clock and go back to a power operations legacy basis.

And then at that point, Palisades will be in its second period of power operations, and then they'll afford the ability to re-enter that regulation at a future date whenever that decommission time would --

VICE CHAIR HALNON: So, Jim, as I mentioned in my opening remarks, this is very unique. It's the first time we've tried to resurrect a plant that's been shut down.

Can you just briefly say what process did you guys start with? I mean, how did you say these are the things that we have to do in order to get this?

Did you consult any existing guidance or did you just make it up at a roundtable with a bunch of experts? How did you do that?

MR. MIKSA: No, so it did start out with your original request for rulemaking, reviewing some of that information, some of the considerations that were involved in that.

And then the second part was looking at where the plant was when it was shut down, what actions

we had taken and why we took those actions, as far as like missing actions, and then how do we officially reverse those?

And the main point was that when there's a specific point in time when Palisades transitioned from power operations on the same basis to decommissioning, and that was when the certifications were docketed, at that date, we also transitioned at that point from a ROP, rapid oversight process, to a decommissioning oversight process.

So mimicking, we need that exact same date and time going forward where the transition between from decommission basis back to power operations.

So that was kind of the premises, and then all the actions that needed to be reversed or taken in order to support that.

So like I said, we would be in -- the goal is to be in compliance with power operations on a licensing basis on that transition, so things that have to be done in advance.

One process that kind of mimics it closely is when a licensee does a standard tech spec upgrade.

A lot of times, they will change the other surveillances and put the requirements in that have

to -- some have to be met before that date they implement, some don't.

So that kind of factored into the process also.

VICE CHAIR HALNON: It really was just brute force work to take a look and see where you had to back up.

MR. MIKSA: And integrate some of the regulatory processes we already know in order to come up with, yes, the most efficient way to do this.

MS. FLEMING: And Greg and I will add on that we did consult with several subject matter experts in the industry who have previous experience with Watts-Bar and some of the other utilities, or you know, the plants that were in an extension of those things, Joe.

VICE CHAIR HALNON: Okay.

MR. MIKSA: Next slide. So in December of 2023, the next major licensing action was submitting, and this was the license transfer application.

The purpose of that was to authorize a new entity, Palisades Energy, to receive to operation the reactors. In other words, be authorized to operate the reactor.

It provides Palisades an operation -- it provides in the submittal itself, it has the Palisades operating organization is required by regulation, the financial assurance requirements required by regulation, and an operating quality assurance program for review and approval.

Those are the main points or parts of that submittal.

And once again, to reiterate, since Holtec Decommissioning was not authorized to operate during unauthorized decommission of plant, this was required in order for the entity to operate Palisades once we go back to power operations on a latency basis. Next slide.

Also in December of 2023, license amendment for a power operations technical specifications was submitted. The goal is to ensure that the previous power operations expects were kept intact so that all the legacy basis that supports it could be reinstated as it was just prior to transitioning to decommissioning and was based on the last docket of power operations update of final safety analysis report.

And then any changes since that last docket

report will be trued up via the 10 CFR 50.59 process.

CHAIR KIRCHNER: Jim, could you elaborate a little on your previous slide? I noted one of the last bullets, sub-bullets, was the quality assurance program.

So, can you just give us a little more background? What was the quality assurance program while you were in the decommissioning phase?

Was there a major change to come back to I presume NQA-1? Can you explain?

MR. MIKSA: If possible, can we hold that question for a couple slides?

CHAIR KIRCHNER: Sure.

MR. MIKSA: There's actually a slide coming up that discusses that. And if I forget to go into that --

CHAIR KIRCHNER: No, I'll remind me.

MR. MIKSA: Please remind me. So, held up by the transmission of power operations tech specs in February, an additional license amendment was submitted for administrative rules.

It was separate submittal to parallel house, and those are done in decommissioning in order to restore the requirements for licensed operators.

There was some discussion of combining these two, but in order to have a clear line of sight as to the actions we took going into decommissioning with the actions we're taking to reverse that, we'd like to keep them separate.

CHAIR KIRCHNER: I presume, I think there's a slide coming up on this with more detail as well. Maybe I'll hold my question.

But just give us the status of what kind of operators were there while you were in the decommissioning phase.

I presume licensed fuel handlers or --

MR. MIKSA: Yes, so you go into a certified fuel handler program.

CHAIR KIRCHNER: Sure.

MR. MIKSA: Which the majority of those individuals, like all entities were previously licensed individuals at Palisades when it was in power operations.

And those individuals, the same individuals that have gone through a relicensing progress, we talk about that, its future, and the status of it currently, and the number of those individuals.

CHAIR KIRCHNER: So it's not a major

transition in the workforce. You already had experienced operators from when the plant was in power operation when they were there for the decommissioning and I presume being retrained as you said to train operators.

MR. MIKSA: And we also have the advantage of a lot of the individuals that did not stay on and decommission that went to retirement, allowing them to come back as temporary support to get the plant back up and operating to give us their knowledge and tactics that they knew and help us to train any new individuals coming along.

So there's been a lot of support from past licensed operators at Palisades that didn't go down the path of certified fuel handler and licensing. Next slide.

So in May of 2024, file major submittal was for Palisades to submit a revised site emergency plan to support power resumption.

It replaces the decommission, permanently defueled emergency plan, operations as a plant goes into decommissioning at certain points in time as fuel decays.

It reduces the requirements or changes

requirements for their emergency plan and we've gone through that process at Palisades up to the post shutdown emergency plan, which is currently in place.

This will reinstate a power operations emergency plan when we transition back to the power operating splicing basis.

And this actually has updates to some of the new and improved new regs. It's not going to go back to exactly what it was. It's going to go back with improvements based on some updated new reg requirements.

VICE CHAIR HALNON: Can you briefly discuss what you're doing with the offsite agencies to make sure that they're going to have to stay on? It's been down for a couple years now.

MR. MIKSA: Yes, so we've been in constant contact with them and have had several briefings on the restart of Palisades.

Early on back in 2023, when we first started pursuing the project, we've been in communication with them.

We are aligned with them as far as their memorandums of understanding and then there's support. We have what is support from them, a support going back

to power operations emergency plan.

And we're now working through the details of the drills required for our emergency plans to get this organization emergency plan stood up so we meet all the regulations when we transition.

VICE CHAIR HALNON: So you'll be doing some training with them as well? Not just the drills, but the trainings?

MR. MIKSA: Yes. In my head, yes.

MR. SCHULTHEIS: Yes, additionally, I think it's important --

VICE CHAIR HALNON: State your name, please.

MR. SCHULTHEIS: Mike Schultheis, Holtec. So I think it's important to note that the emergency plan, even in decommissioning, up until January of this year, it required offsite support.

So all of the offsites have been bearing with us, but throughout decommissioning. And then with the project, there's a short portion where we did not require their offsite support.

VICE CHAIR HALNON: Okay, and really, when you go down into the depths of the emergency plan, you've got evacuation time estimates and other items,

population changes, are you really doing more of this assessing, whether or not it's all still valid?

MR. SCHULTHEIS: Yes, absolutely. We're actively in conversations with the county, state, FEMA, on restoration of the operating emergency plan and what drills and training need to be conducted prior us to transitioning to the power operating licensing basis.

VICE CHAIR HALNON: Thank you.

MR. MIKSA: Next slide. So, the renewed facility operating license remains active, a key point is that licensed termination planning activities were not pursued during the decommissioning period.

But shortly after plant decommission, the project conceptual work has started. So at that point, no major decommissioning activities were undertaken. So the plant was essentially put in kind of a hold up period while we assessed the feasibility of the project.

Licensing actions taken were industry standard actions taken. I believe I talked about this a little bit more with the permanently defueled shutdown emergency plan and tech spec exemptions that were submitted were all standard industry submittals

that the decommissioning plants perform.

The permanently defueled emergency plan and tech spec exemption and LARs submitted also for the post-Zirconium fires, those are the two step downs.

There was a stepdown emergency plan right when we went to a decommissioning licensing basis. And then after a period of time, the fuel decayed in the spent fuel pool, there's another stepdown period, and that's going to get into the shutdown emergency plan and the exemptions.

VICE CHAIR HALNON: Dennis, you have a question?

DR. BLEY: Yes, Dennis Bley again. Just to make sure I'm not making my own assumptions where I should be hearing you, under your second bullet, I assume that means no systems have been disabled along the way and no equipment has been removed from the plant that wouldn't have been needed any longer, so it's still intact as it was.

MR. MIKSA: Correct.

VICE CHAIR HALNON: But the follow on to Dennis's question, the equipment wasn't in layup like it was going -- I mean, I assume that you drained oil and drained system and data.

I'm going to put words in your mouth. You didn't put nitrogen blankets on all of the heating streams or stuff? So that's part of this discovery process you're going through at this point. Is that correct?

MR. JERZ: Yes, Joe Jerz, Holtec Palisades. Generally, that's correct. The primary plant layup conditions were pretty standard for any extended outage, but secondary plant especially was in a decommissioning style of layup without nitrogen blankets and things.

It wasn't in an operating plant sort of layup condition.

VICE CHAIR HALNON: Thank you.

MR. MIKSA: And then the last --

DR. BLEY: This is Dennis again, following up the follow up. That kind of means things like steam generators may have been susceptible to some damage if they didn't have the nitrogen blanket all this time.

You have a program you're going to get into, how to make sure everything's in good shape there.

MR. JERZ: Joe Jerz again, Palisades. So our focus is discovery style inspection, so inspections that are going to really give us a good understanding

of the condition of the plant as it sits today.

We're scheduling as early as possible in the project with our vendor support, and we'll talk through a lot of those details in later slides this morning.

DR. BLEY: Okay, thanks. I just bring that up. I was at a plant, Navy plant, actually, that went into an extended layup condition but still had air in the steam generators and when we started up, we learned a lot about what can happen when you leave in that condition.

MR. MIKSA: And then the final bullet, all the actions, the licensing actions that we're currently taking, submitting, and requesting for approval, will support implementation of going back to power operations on a licensing basis and support it on the date we rescind the exemptions and approve and rescind the certifications of permanent cessation of corrective fuel. Next slide.

So the Palisades current license renewal 20-year term in ends in March 24, 2031. This is the first license renewal period for Palisades.

Palisades will return to power operations within that renewal term, which is important. In April

of 2024, HDI had notified the NRC that they will pursue a subsequent license renewal for Palisades, and it's the plan submittal of that will support the five-year prior to license expiration date.

That's all. So the intent is to pursue a subsequent renewal from Palisades. Next slide.

The quality assurance transition plan, so Entergy's power operations quality assurance plan was in effect prior to shutdown.

That was transitioned from a fleet to a site plan just prior to going to a decommissioned QA plan.

So it was a short period of time where Palisades was under an Entergy decommissioning quality assurance plan.

And then when Holtec gained ownership, Holtec decommissioning quality assurance plan went into effect.

The major significance of that is the application of the quality requirements. The quality requirements are now into those components important to decommissioning versus those important to power operations.

And other than that, I'm not aware of any

of the major deltas between the two quality assurance plans.

In order to transition though back to power operations, we have to still maintaining the decommissioning quality assurance plan for our current licensing basis.

However, we want to prepare those systems that we're going to reclassify for power operations so we've traded a transition quality assurance plan which has additional requirements for those systems that are going to be reclassified as safety-related and essentially those are the same requirements that we will institute when we go back to the power operations plan.

So we're in advance of that transition for power operations, all the quality requirements for the work we do on the equipment will be done for the transition quality assurance plan.

CHAIR KIRCHNER: And that plan would be NQA-1 Appendix B compliant?

MR. MIKSA: Correct.

CHAIR KIRCHNER: So that you don't have any design control, equipment flexibility issues?

MR. MIKSA: Correct.

CHAIR KIRCHNER: Thank you.

MR. SCHULTHEIS: Jim, if I may? One quick -- sorry, Mike Schultheis, Holtec Palisades. Palisades previously operating was not NQA-1 Appendix B program.

We are not transitioning to an NQA-1, we are restoring or seeking restoration of the previously approved quality assurance.

VICE CHAIR HALNON: And for part 50.

MR. SCHULTHEIS: That's correct.

MR. MIKSA: And then finally, last bullet, upon restoration, the power operating licensing basis of Palisades' QA plan will become effective.

And with that, next slide. I'll turn it over to Mike. These are yours, Mike. This next slide will be turned over to Mike Schultheis.

CHAIR KIRCHNER: So, Jim, before you go on, so could you give us kind of a wrap up status report? So I presume you negotiated, so to speak, with NRC.

They denied rulemaking, but they said come back, you can use the exemption, license amendment, like changes to effect this constitution back to our operation.

So do they have -- is there a date when the

exemption is approved? Has it been approved?

MR. MIKSA: So a little bit of a backstory. The actual rulemaking was not initiated by Holtec. It was initiated by another region, in another region, and that was previous to Palisade's decommission.

That was like in the 2017-2018 roughly timeframe. So that was just kind of background information that was used for Palisade's path.

CHAIR KIRCHNER: I see. So given that that didn't go forward, you then pursued this path and exemption to get the rescission of the decommissioning certs?

MR. MIKSA: Correct.

CHAIR KIRCHNER: And all of the licensing actions that we've mentioned to date are all in review with the NRC. Some already have supplemental information provided and they're finalized in the RAI process with the request of second quarter to be approved for implementation and the third quarter of '25. Second quarter of '27.

CHAIR KIRCHNER: That's what I was thinking for it. Is there a date that when that happens, and then what does that really mean for you when this happens?

I presume when these other activities go on?

MR. MIKSA: So, yes, so in the licensing actions themselves, they will be approved, but they won't be effective yet.

So once approved, we'll negotiate an effective date, and the effective date, the plan to transition to that will be a Palisades readiness letter.

So about four weeks when Palisades and HDI has concluded that we meet all the requirements for the power operations licensing basis to transition, we'll submit a letter to the NRC saying at this date, two, three, four weeks in advance, we intend to submit the rescission of the docketed and transition back to power operations.

And then that will give -- and that's after approval of all the required NRC documents that are in review now.

And then that will give the NRC an opportunity to agree or disagree with that date of transition.

CHAIR KIRCHNER: And then for example, that means on that date, tech specs for power operation

are in effect, and the decommissioning tech specs are so to speak behind you, correct?

And that gives you a clean break in the license space.

MS. FLEMING: And the intent is to have a single date that we move from decommissioning into the power, into operations again, with all the suite of licensing documents, as we're calling it, they'll all be effective on that date.

CHAIR KIRCHNER: On that same date. Thank you.

MS. FLEMING: Correct.

MEMBER PETTI: Just a question on the quality. Is nothing that has been done to date under the decommissioning QA program that could, when one looks through the lens of Appendix A, cause a disconnect or a problem?

MR. JERZ: Joe Jerz, Palisades. So we have a process for a system return to service that will go through everything that's been done to our plant since we entered decommissioning.

If we identify conditions where it would -- where an item or an activity was conducted on a system that would be a quality-related system under

operating tech specs or operating license basis, we will reconcile whether that's removable, redo, evaluate. We will reconcile.

VICE CHAIR HALNON: Joe, I assume Palisades is a pre-GDC plant.

MR. JERZ: We are.

VICE CHAIR HALNON: Does that include then going through the FSAR that was in effect prior to your shutdown? And I don't literally mean line by line verification, that everything's there that's supposed to be there, but the FSAR balanced against the physical plant to make sure that where you left off is where you're starting back up. Is that correct?

MR. JERZ: So physical plant will be balanced against the operating plant, FSAR, that's correct.

VICE CHAIR HALNON: The one that was in fact just prior to shutdown.

MR. MIKSA: That's correct.

VICE CHAIR HALNON: Thanks.

MR. MIKSA: And then that may include changes based on modification activities that we do have planned as part of restart.

If changes to the FSAR are necessary, those

are identified in our modification process. And those will be processed following our FSAR change process.

VICE CHAIR HALNON: In this restart letter, I looked at Jean since she read it to you, will all those major things be described on like you're saying that restart's okay?

MS. FLEMING: So Jean Fleming, Holtec. We're still discussing the contents, if it needs to have that level of specificity or that those will be covered by inspection in the days.

VICE CHAIR HALNON: Thanks.

MR. MIKSA: With that, I'll move on. Turn it over to Mike Schultheis.

MR. SCHULTHEIS: Great, Mike Schultheis, Palisades. So the next two slides kind of highlight the timeframe of items that we've been talking about so that you can see September of last year was when we submitted the exemption request of §50.82.

Shortly after that, we restored training activities to include the restoration of accreditation for our training programs.

More recently this year, we completed a primary coolant system decontamination and we started, which Joe had mentioned, our major discovery

inspections, the steam generator inspections, vessel inspections.

We have more detailed slides coming up to talk about those.

Then coming up this January, or next January, we will start our corrective and PM work activities associated with all planned systems structures and components.

And then what we've been touching on is the verification. So in June of next year, we expect to do an internal verification that our activities are complete to support transition back to power operating licensing basis.

And then sort of just, next slide goes into the follow-on will be the notification to the NRC of our readiness, so that makes sense, internal verification and notification, and then that allows us, assuming all approvals are in place, to rescind our §50.82 certifications and formally transition back to a power operating licensing basis.

VICE CHAIR HALNON: Before you go on, on the previous slide you talked about the training program. Is that going to be accredited through the industry accreditation process that every other plant

in the country does, basically?

MR. SCHULTHEIS: Yes, it is.

MEMBER PETTI: Just a question. So you kind of scheduled here, are you far enough along in your discovery process to have good confidence that your schedule is not a gotcha out there?

MR. SCHULTHEIS: Yes, absolutely. The early discovery inspection activities have suited us well. Anything that we find, that we have time to commence repairs and complete them in time to maintain this timeline.

MEMBER BIER: Vicki Bier, another question on the timeline. I assume that the NRC has a number of things that they will need to inspect and verify themselves.

So is a lot of that happening prior to the readiness letter, and then just final confirmation in that last month? Is that accurate or --

MR. SCHULTHEIS: Yes, it is, and not to steal their thunder, but it's a combination of ongoing inspections and then milestone inspections.

MEMBER BIER: Okay. Thank you.

MR. BALLINGER: This is Ron Ballinger. I'm not sure this is the right time to ask this question,

but when I go through your slides, what I don't see is -- this committee visited Palisades in 2014, and at that time, the plant expected to exceed its screening criteria for the vessel in 2017.

And now it's 2024. So I don't see any mention of the vessel condition, if you will, establishing whether it meets the 10 CFR 50.61 criteria.

So am I missing something in these slides? Is it not necessary because I'm just ignorant or --

MR. JERZ: Joe Jerz, Palisades. I would never claim you were ignorant.

MR. BALLINGER: No, but there are a number of people that would, so --

MR. JERZ: So we did update our vessel improvement calculation. We do plan to update it again as part of subsequent licensing. We do plan to have that update complete prior to plant restart to understand that, but we have not at this time exceeded screening criteria.

MR. MIKSA: And I'll just add to prior to decommissioning and after the 2014 time period, there was industry effort from different methodologies.

An actual license amendment was submitted

prior to the decommissioning, which also relapsed.

MR. BALLINGER: Do you did do the §50.61(a).

MR. MIKSA: Yes, the alpha submittal that's in our license.

MR. BALLINGER: Thank you.

MR. SCHULTHEIS: Okay, and then the milestones after transitioning back to the operating license basis are associated with fuel loading in September '25, operability, formal operability, functionality, and testing based on our operating licensing basis, and then commencement of power ops at Palisades targeted for October of next year.

To date, we've had strong public engagement to include open houses for the local communities. We anticipate having a second open house for Holtec in December of this year.

Outreaching and communications, literally where we attend and participate in the interested public meetings, both pre-application engagement and the quarterly health public meetings associated with the restart panel.

And then I do use public media releases, our Holtec highlights, for project updates that are

published publicly.

VICE CHAIR HALNON: One question before we go on. License renewal during the extended operations, you're in that now, correct?

MR. SCHULTHEIS: Yes, sir.

VICE CHAIR HALNON: And then you're going to submit SLR. When you shut down, you had energy management programs in place and TLAAs.

However, they probably weren't continued during the shutdown period.

MR. SCHULTHEIS: Correct.

VICE CHAIR HALNON: Were all the end dates, are they all still valid from a regulatory perspective relative to that period of time when the AMPs and TLAAs were not done?

MR. SCHULTHEIS: So the system return to service plans is going to discuss more detail. Those also include aspects of aging management to identify deviations that might need to be reconciled.

VICE CHAIR HALNON: Okay, so it's still early in the process, but you recognize that delta and you'll address that in your --

MR. SCHULTHEIS: Yes, sir.

VICE CHAIR HALNON: Thanks.

MR. SCHULTHEIS: Next slide.

CHAIR KIRCHNER: Just to follow on then. And it may be more paperwork than substance, but so those AMPs programs that are associated with the LAR are, I wouldn't say lapsed, that were perhaps suspended maybe is the right word, so when you pick them up again, you have to kind of revisit them almost like you would have to for the SLR application.

Is that the approach you're going to use? Or could you just elaborate a little bit more about how do you get back into the AMPs program as part of your restart?

MR. JERZ: Joe Jerz at Palisades. So that's absolutely correct. We have to go through our programmatic requirements, not just for our aging management programs, but all of our general insuring programs to validate that the plant remains in compliance with those requirements and reconcile as necessary any deviations between program requirements, regulatory requirements like license basis requirements, and the current state of the plan.

So all of that will be evaluated, corrected, whatever the appropriate action is based on that reconciliation review.

CHAIR KIRCHNER: Okay, thank you.

MR. SCHULTHEIS: From a staffing perspective, when we entered decommissioning, the decommissioning staff was approximately 220 personnel at Palisades.

And since we've ramped up our restart activities for the project, back to right around 500 full time in house employee at the site.

We have over 600 bench contractors. As you can imagine, there's a large amount of vendor support needed to accomplish the project.

When we entered decommissioning, when we were last in operation, our site complement was approximately 600, the same target, a very similar organization chart to when we were operating.

VICE CHAIR HALNON: Do you have a feel for how many of that 496 are previous Palisade employees that were experienced?

MR. SCHULTHEIS: It's quite a bit. So from a leadership perspective, approximately 90 percent of our leadership team was at Palisades during operation.

VICE CHAIR HALNON: And operations, these were all existing licenses before shutting down, so

they were experienced operators already?

MR. SCHULTHEIS: Yes, the 26, I think we have another slide on this, but the 26 operator licenses have been restored.

Those were all through the process for previously licensed operators. So that's 26. Then we have ongoing classes to increase the number of license operators.

VICE CHAIR HALNON: Thanks.

MR. SCHULTHEIS: Next slide. So operator training, as we've mentioned, at the end of 2023, we restored our training program activities.

We've completed initial accreditation through the National Academy for Nuclear Training for both our operations and maintenance and technical training programs.

As mentioned, 26 operator licenses were issued just this past August, 18 SROs and 8 ROs. Once again, those were previously licensed operators at Palisades.

VICE CHAIR HALNON: So I was going to say, that's just a fraction of what you're going to need for an operating five-shift rotation.

And typically, two years to get a license.

Maybe some can be reinstated quicker. But what do you have in the pipeline right now?

MR. SCHULTHEIS: So right now we have 18 in the licensed operator initial class that's expected to be completed early summer next year.

Some started that class right at the beginning of January this year, so that puts us in the mid-40s.

Our target for self-relieving five-shift rotation is in the mid-40s. And so we also have started an additional pipeline class to restore like the normal operator licensed pipeline behind that, and it'll be in early '25 that that class would complete so that we have additional margin of licensed operators.

VICE CHAIR HALNON: What about the non-licensed side of the house?

MR. SCHULTHEIS: Non-licensed side of the house, we've restored the non-licensed operator training program and I can't remember the numbers that we're getting through, but we do have in that group our previous non-licensed operators and some that are new to the plant.

VICE CHAIR HALNON: A lot of operating nuclear plant is on the secondary side and also

initiates a lot of the transients that we've seen through the years.

Does this group of non-licensed operators have "operating experience," or are they going to be pretty new?

MR. SCHULTHEIS: It will be a mixture, and so what our operations department is implementing is mentorship type activities so that we can sync up seasoned Palisades operators with those that are newer.

And I think that Jim had mentioned that our training staff in operations training is deeply experienced from Palisades.

So it's a lot of retirees, when we entered decommissioning, came back as training staff.

VICE CHAIR HALNON: So you weren't shut down so long so as to a lot of these folks age out to the point where they didn't want to come back. The community is still supporting them fine?

MR. SCHULTHEIS: Absolutely, yes. Great, and then maintenance and technical training, once again, that has been an issue. We expect full accreditation for that program in May of next year.

MR. BALLINGER: This is Ron Ballinger again. Do we have established or previously

established and reestablished relationships with local, two-year, technical-type schools and things like that so that you can generate a green pipeline, if you will?

MR. SCHULTHEIS: Not formally, and we didn't have it necessarily formally when we were operating, but we are restoring relationships with local universities or those closer in our region than the others, specifically for engineering, pipelines.

And then we're working with Lake Michigan Community College to restore the technical training program to help with our trained support and our union workers.

MEMBER PALMTAG: Scott Palmtag. So I have some questions on the fuel and your timelines. So give me your best timeline for the restart.

You already have to go through your new core design, fuel fabrication, and fuel acquisition. Assume all that's in process right now.

MR. SCHULTHEIS: Yes, it is, and procurement fuel in process, and expected to lead the timeline.

MEMBER PALMTAG: I'm talking about with the ownership. I mean, who is actually signing these

contracts and who, when this fuel is delivered, who is going to take ownership? Is that HDI? Is that the new operating company? Are the licenses going to be in place for this?

MR. SCHULTHEIS: I assume the license changes are required to be in place before we take receipt, so we'll not take receipt of the fuel.

Those procurement activities today don't require us to take receipt.

MEMBER PALMTAG: So at the time of receipt, it's going to be Palisades operating company accepting it?

MR. SCHULTHEIS: Yes, it would be Palisades Energy is the operating entity, that's correct.

MEMBER PALMTAG: And then the purchase agreements, are they Palisades' operating company, too?

MR. SCHULTHEIS: I'd have to look into how those were exactly structured from an operating and a licensing standpoint.

Until the transition to our power ops licensing basis, we can't receive the fuel.

MEMBER PALMTAG: And then I just have some

questions on the Palisades fuel is rather unique. I believe it's the only plant that uses that design of fuel.

Was there any issues with the fuel manufacturer shutting down those plant lines or shutting down those manufacturing facilities?

MR. JERZ: Jose Jerz, Palisades. So, we've addressed the issues with the tooling that had been disposed of.

We did a very early order for restoration of tooling for our unique fuel design. So no significant issues.

MEMBER PALMTAG: And I assume that falls under the fuel manufacturer QA plans?

MR. JERZ: Yes, that's correct.

MEMBER PALMTAG: And then your spent fuel, you're going to be reloading spent fuel that was in the previous cycles?

MR. JERZ: That's correct.

MEMBER PALMTAG: And that was all, that's all been sitting in the pool? There's no been loading into casks or anything?

MR. SCHULTHEIS: No, we have not done a cask campaign yet. And we have fuel in the pool that

will be reloaded into the vessel.

MEMBER PALMTAG: Thank you. I had one follow up question to Ron's question. You asked about the pressure vessel.

What about the reactor head? Was there any deferred upgrades on that? Are you going to address that?

MR. SCHULTHEIS: Not deferred upgrades, but we do have a specific slides on reactor head.

MEMBER PALMTAG: I'll wait for that. Okay, thank you.

MR. SCHULTHEIS: And that's it for operator trainings. We'll turn it over to Joe.

MR. JERZ: So again, Joe Jerz, Palisades. So with regards to our NRC orders and industry initiatives in which we have open actions --

MR. ROBERTS: Excuse me, Tom Roberts. Unless I missed it, you didn't cover half the slide on maintenance and technical training.

And also a question about engineering staff. Is there significant carryover from previous Palisades operation from the engineering staff from some of the heating systems at Palisades?

MR. SCHULTHEIS: Mike Schultheis,

Palisades. Sorry if we went too quickly through it. So the maintenance and tech training program has been restored and we have initiated initial classes for our radiation protection, chemistry, engineering, and maintenance disciplines.

And then we had mentioned that initial accreditation has been completed and that we expect full accreditation through the National Academy in May of 2025.

As far as engineering staff, I guess I'll turn it to Joe.

MR. JERZ: Again, Joe Jerz at Palisades. So generally, for engineering staff, I would say around 25 percent of my full-time staff will be either folks that were retained through decommissioning opted to stay on, or have returned since the restart announcement and are part of the restart project.

Additionally, we have had a lot of former Palisades employees that are serving in a contract fashion and really helping to mentor our new staff.

And like every utility right now, we do have staff that's new to nuclear, and we're really putting a lot of focus on former Palisades staff, long-term staff, spending their time mentoring these

new staff on the unique features with Palisades and really what it is to be an engineer in nuclear power.

MR. ROBERTS: So you've looked at the unique systems that you may not be able to draw on engineers from other plants, it's an innate experience from Palisades in nature.

You've got that covered either by specific plan or having the right people there?

MR. JERZ: Yes.

MR. ROBERTS: Okay, for example, the control rod drive mechanisms can be pretty unique for the Palisades plant, and there's probably a lot that's not written down, I'm guessing in manuals that people just learn by experience over the years.

MR. JERZ: Yes, and I do have two specific individuals on staff that are very familiar with our control rod drive system and our unique seals.

MR. ROBERTS: Okay, thanks.

MEMBER PALMTAG: This is Scott Palmtag again. Previously, this was operated by Entergy, right? Entergy was the --

MR. SCHULTHEIS: That is correct.

MR. ROBERTS: And then now you're going to be a new operating company and operating? Your

Palisades company is going to be operating?

MR. SCHULTHEIS: That is correct.

MR. ROBERTS: And there is no -- you have no previous experience operating a plant? Are you still working with Entergy? Are they still advising you on how to operate the plant?

MR. SCHULTHEIS: No, there's no formal partnership with Entergy on the project or future operation of the plant.

So the 220 staff that's stayed on were under Entergy when we -- and myself included, and Joe and Jim.

So we've retained a lot of the same people who were operating the plant and we worked for Entergy, and then the new entity will be Holtec but similar people, actually people, bodies, that used to operate the plant, but need a company, if that makes sense.

And all of that is covered under the technical qualifications and the license transfer application that the NRC is reviewing.

MEMBER PALMTAG: So previously with the Entergy operating, they didn't have experience of the fleet, you know if you have questions you can always go to Entergy. Are there any challenges in going at

it alone versus single plant operations?

MR. SCHULTHEIS: Yes, I would say there are challenges. But we have restored relationships with other utility and industry partners so that we can bridge that gap.

So the other partners or industry players have come to the table to support and we've been able to already lean on for questions and support and lessons, things like that to apply to the project, and we will do the same when we're up and running.

MR. MIKSA: Jim Miksa, Palisades. An example of that is the (audio interference) buyers owners group. We've reached only that the beginning of this year, and we're active in that.

Myself, I was a former licensing chair. I'm now the vice chair and attend all the meetings and redeeming all the projects and the industry information from those, from the owners groups.

We have that support as one example.

MR. SCHULTHEIS: And we've fully restored our memberships with EFRI and the Institute of Power Operations so that they work as part of the industry groups that can help and share support when needed.

MS. FLEMING: Additionally, we're members

of NEI and are engaged with the NEI path courses and working groups with NEI.

MEMBER PALMTAG: Thank you.

VICE CHAIR HALNON: Just one last question as a follow up. Scott, is your CNO, remaining nameless, but is your CNO somebody who has experience as an operating player or just a CNO with decommissioning?

MR. SCHULTHEIS: Deep operations experience, and we can give names because it's in the license transfer application, Rich Burroni who is our current CEO was, CNO, sorry, a former VP of Decommissioning at IPEC, but decades of experience at IPEC during operations. VICE CHAIR HALNON: So has he done safety culture assessment yet or is that still in the works?

MR. SCHULTHEIS: It's in the works, and we have it on the -- in the project plan for second week of November this year.

VICE CHAIR HALNON: We'll be interested in hearing how that worked out, probably asking the staff on their opinion of that as well. Thank you, sir.

MS. FLEMING: Additionally, I think it's important to note that we have reconstituted a Nuclear

Safety Review Board.

They've been to the site twice for six visits, and we expect them next week or in the next two weeks for an assess visit.

MR. JERZ: Joe Jerz, Palisades. Any other questions on what we've covered before I step into technical topics?

DR. SCHULTZ: Yes, this is Steve Schultz. Just a follow up to Greg's comment associated with nuclear safety culture.

Given the situation that you are in with regard to new people on site and the changes in organization and so forth, I know you've got a bullet on safety culture later on, but with regard to overall safety culture program and training, could you expand on what your overall plan is there?

MR. SCHULTHEIS: Yes, Mike Schultheis with Palisades. So, this quarter, we are restoring our safety culture monitoring plan activities formally, and as mentioned, with the safety culture assessment, the normal industry cadence is approximately a two-year assessment.

We expect to be doing those every six months, at least for the next several years, because

of the amount of work at the plant and the amount of people that are on site to support it.

And that gives us better opportunities to ensure that there's a strong safety culture for all plant operation activities.

DR. SCHULTZ: Are you planning any special training programs for new arrivals at the site, including contractors?

MR. SCHULTHEIS: Yes, those are in development, not yet mature, but in development and built, addressed, and proved safety culture awareness and training, things like that.

MR. JERZ: Joe Jerz at Palisades. We also have reinstated our new employee orientation programs throughout our training programs and new employee orientation has a heavy focus on nuclear safety culture and really the role of a nuclear professional at a nuclear power plant.

Additionally, we have reinstated our vendor support briefing progress. 126 process, but one of the heavy emphasis points for briefing all vendor staff that come on site is again that nuclear safety culture piece of that responsibility of nuclear professionals.

DR. SCHULTZ: Thank you.

MEMBER PETTI: I just was wondering in that sense whether you, when you get to the end of all this, capture lessons learned given the uniqueness.

Because if I was behind you, right, and come a lot of industry perspective, someone like NEI would obviously be a clearinghouse to put such information.

Do you plan to capture everything from all this?

MR. JERZ: Joe Jerz at Palisades. So, absolutely, nuclear industry is a culture of continuous learning, and sharing, very openly sharing.

We're already capturing lessons learned from projects that are complete, discovery items that we've come across along the way.

We've utilized lessons learned in development of some of our processes and those lessons learned have come from other plants that have had extended shutdowns.

We're leaning heavily on technical expertise and operating experience from a lot of our very strong vendor technical staff as well.

And they bring a lot to the table based on decades and decades of experience. So not just documenting and sharing, but learning from those that have come before us in similar efforts.

Here I'll step into NRC orders and industry initiatives that had open actions that shut down. So the first one we'll talk about is our generic letter 2004-02, which is the impact of debris blockage on our recert during design basis accidents.

So we did complete a fair amount of work prior to shutdown. We changed our buffering agent to sodium tetraborate.

We installed a new mechanical seals and separators in our HPCI pumps. We put passive debris screens on the various sub inlets and installed some strainers on our ECCS pump suction inlet.

And we did modify our sump vents to enhance our sump performance. And step to the next slide, please.

We do have work remaining to close GSI-191, the generic letter. And really we're in the early process of determining the appropriate option based on our point specific parameters and the industry culture initiatives.

We do intend to use a risk informed approach. The conditional failure probability approach, which has been recommended by recent industry experts and utilized by other plants.

So we have GSI-191 calculations we have to update, including our regeneration transport, and then that also includes the chemical effects.

And we do have testing that we have to complete to support this approach. At that point, we do have an opportunity potentially to employ the alternate break resolution if we deem that that initial testing and calculation upgrade effort proves that it's a viable path for us.

But we also, we expect the CFP process to be the process that's most likely for us. So following those early efforts, then we develop and update our follow-on calculations, including our strainer structural calculation for qualification, our in-vessel effects.

We'll update our probabilistic risk assessment inputs, and then we'll have risk and uncertainty quantifications.

So we do have a plan, an NRC public meeting for generic letter 2004-02 close out in fourth quarter

of this year.

MR. HARRINGTON: This is Craig Harrington. Was your predominant insulation type in containment in metallic or fibrous? What kind of challenges?

MR. JERZ: So we have both CalSil and reflective metallic that we'll have to address.

MR. HARRINGTON: But no large amount of fibrous type insulation? Just --

MR. JERZ: Palisades is classified as a high fiber plant.

MR. HARRINGTON: Palisades is? Oh.

MR. JERZ: Yes, that's correct. Other questions on 2004-02?

VICE CHAIR HALNON: Just a time check. We're about halfway, give or take your presentation so -- I'm sorry, I got to look at the -- what time is it? 9:40. Okay, about 45 minutes.

You're going to be getting into some very detailed slides here, so I would suggest you hit the high points on that and let any burning questions that may come out the topic, come out of the topic, with too much details left.

MR. JERZ: Understood. So I can

certainly hit the high points. So our next open industry initiative is the open phase condition.

We do have open phase detection installed on our standby primary transformer and we're currently determining what the appropriate risk assessment, NEI 1902, close out path is for us.

And so that's really in early identification of what that path will be for us. Next slide, please.

The next one is our critical heat flux correlation. So this submittal has already been completed.

And really, it's an extension applicability of the high thermal performance design limit of the BIASI Critical Heat Flux for correlation for use in the safety analysis for the Palisades fuel design.

And again, that submittal is already in. Next slide, please.

So the next item is our seismic probabilistic risk assessment. This is the beyond design basis seismic probabilities.

We did have some work complete prior to shutdown. We are in the process of establishing

equipment relay groups and we do intend for all of these tasks to finish prior to plant startup to be really fully compliant with this order.

That includes our fragility refinement quantification and how that becomes iterative to really refine.

We'll complete our sensitivity runs and then finish our final model, and that will be peer reviewed. Next slide, please.

We'll roll into our general probabilistic risk assessment model update. So we will restore our model.

We'll conduct updates to our internal events model, our flood and fire models, and all three of those will be integrated with the seismic PRA model that we just discussed, such that we have one CDF and one LERF number based on the creation of all of the models.

MEMBER BIER: Quick question. How much of that is being done in house? Or does it need like contractors for it?

MR. JERZ: So our PRA model updates are contract. However, the staff with the contractor that is updating the model are the former Palisades, primarily the former Palisades PRA team.

So the unique items with the Palisades PRA model are better understood by these three individuals than any other individuals in the world. Next slide, please.

So this is just kind of a general step through. So we do have detailed slides on the first three items on this slide, so I'll just touch those very quickly.

VICE CHAIR HALNON: Before you move on, Joe, the previous projects that were not completed, on the basis, in any of those, and you may not be able to answer this because it kind of goes to economics a little bit, but were any of those part of the equation why Palisades shut down in the first place, such that because it's such a big challenge, it felt like now is the best time to shut down as opposed to work through those challenges?

MR. JERZ: I can't really speak to the motivations for the previous closure announcements from Palisade.

VICE CHAIR HALNON: In your assessments from those right now, you see a clear path to success?

MR. JERZ: Absolutely.

VICE CHAIR HALNON: Okay. That helps.

Thanks.

MR. JERZ: Okay, so major modifications selected to enhance our plant reliability on a go forward basis, we are doing a replacement to our component cooling water heat exchanger, which I will -- or heat exchangers, which I will discuss in detail shortly.

We're doing a station battery replacement. That one is a preventative maintenance activity. They're at end of service life.

And we're replacing our main feeder water pump, steam turbine rotors, and I'll talk in detail about that shortly.

We're also replacing our turbine digital electronic control for our main turbine. That's another one that's an obsolescence replacement. Its' due.

Doing an instrument air compressor replacement, Palisades history instrument air compressors. We are replacing them. They are at end of their -- or approaching end of their design service life. So for long-term reliability, now is the time to do that.

Our pressurizer spray valves, we've had a

plan on the books for when we were operating for a long time to replace the pressurizer spray valves and we are going to execute that replacement. It will result in improved reliability and the cage design improves the control characteristics for the valves, as well as some material changes on the actuator.

Provide us a little more reliability associated with any packing leaks on the end. And, I see you have a question.

DR. BLEY: Thank you, Dennis Bley. On your turbine control system, do you have a mechanical overspeed trip or is it all done through the electronics?

MR. JERZ: The current design is a mechanical overspeed, and we're still evaluating if we're going to install an electronic overspeed trip as part of our de-age replacement.

DR. BLEY: Okay, we'll hear about that later, then.

MR. JERZ: That's correct. Continuing at the list, our exciter has already been sent off for a rewind.

Again, it was due in our preventative maintenance schedule for the main turbine. Doing a

Palisades plant computer replacement, so the plant computer is really significant source of indication, redundancy, sort of a one-stop shop for a lot of indications for the plant operators.

We're doing a control room HVAC chiller replacement. The chillers are original plant equipment. They're still a Freon-style chiller.

We're updating those to the newest refrigerants, which will also give us improved reliability in the HVAC for the control room.

And then we're replacing our fuel handling equipment, containment side transfer system and upgrades to the spent side really to address long-term reliability.

Dennis, go ahead.

DR. BLEY: Yes, it's me again. The first time I remember hearing about Palisades was the first time I remember hearing about frazil ice.

You had that big event many years ago. I know you somehow fixed it, but I don't remember what the fixed was.

And since it isn't showing up anywhere here, I assume that fix is permanent and it probably doesn't even make it into your PRA anymore. But if you

can tell me anything about that, I'd appreciate it.

MR. JERZ: Palisades did install warm water recirc system to address frazil ice conditions. That condition is behind us.

DR. BLEY: Okay, and I'm just wondering, since I never saw your PRA, is the failure of that system in possible occurrence of frazil ice in your PRA?

MR. JERZ: I can't speak to that level of detail. I'll have to follow up.

DR. BLEY: Okay. Well, one day when we see that stuff, I'll ask again.

MR. JERZ: Just taking a note. Other questions on this slide?

MR. BALLINGER: Yes, this is Ron Ballinger. This is a list of modifications, changes, whatever, to get operating, right? Have you thought about what's down the line, two, three, four years, where you anticipate major component replacement, but they're workable now but you know that you're going to have to replace them at some point and you're planning for that?

MR. JERZ: I would say this list is inclusive of items that would be likely be, depending on how functional testing plays out, we could restore

them and operate the plant now.

This list and generally our project physical work list was developed with the focus of long-term plant operation, reliable safe operation to the end of a subsequent license renewal life.

So this project is really focused on that goal of safe and reliable operation all the way to the end of a subsequent license renewal life.

MR. BALLINGER: Thank you.

MR. JERZ: Next slide, please. So we talked a little bit earlier about the summary return to service plans.

The plans are in development for all of our site systems and we will assess our system structure and component readiness for return to plant service.

The starting point really is our design and regulatory requirements. So to a question that we got earlier on how we're reconciling to say programmatic requirements, our license and design requirements, this is the starting point for return to service.

That includes a review of our pre-shutdown system health. So any open work orders, any preventive maintenance activities that are due, any corrective actions that we have documented, and our work order,

work control programs, our corrective action program, which we have all of those former operating plant histories as well as things that maybe don't reach the threshold of CAP or work orders yet, but we're documented in system notebooks and system health reports.

All of that stuff becomes an input to that pre-shutdown system health, which is documented them in our search forms for each system.

So the next thing we look at is impacts to systems since shutdown, including work orders that we've completed.

And if it's, again, a quality system for operation, and we did it under the decommissioning quality assurance program, we have to reconcile that.

Any open work orders for conditions we have identified during decommissioning, any preventative maintenance due, which again we have those full histories, and then surveillance, testings, and inspections due associated with programs or just any general testing requirements we have, and then of course, any new open discovery items based on the inspections and testing we're doing now.

Then we step into our programs

implementation. So all the heavy hitters, aging management, our MRP requirements, NEI, ASME requirements.

We also currently review new or open part 21 issues that could potentially impact our plant equipment. We still get part 21 notifications like we used to. We still review them with the same rigor that we used to.

Once we've done this complete really history and work needed to be done for returning a system to service, we roll into developing the start of test wings, which will often recall related systems, utilize the tech spec or surveillance testing requirements.

We may have enhanced testing above and beyond those that those pieces are still in development.

The goal again is to really assure that long-term reliable operation and validate logics where that's applicable and assure that we're doing post-maintenance or post-modification testing.

Dennis?

VICE CHAIR HALNON: Yes, Dennis Bley again. I know you talked about being back in INPO.

Had Palisades added the FLEX equipment? And were you, and are you still, members of SAFER?

MR. JERZ: So FLEX equipment has been added and --

MR. MIKSA: This is Jim Miksa at Palisades, and we are pursuing rejoining SAFER.

DR. BLEY: Excellent. Okay, and you were in the past part of SAFER?

MR. MIKSA: Correct.

DR. BLEY: Okay, thanks.

VICE CHAIR HALNON: Quick question, and when we shut down the plant and go into a decommission zone, a lot of times the configuration management is handwritten on a set of drawings in the control room and (audio interference) would keep control of it.

Can you describe the configuration management process and how you go into it and how you can back out of it to make sure you haven't missed something in all this in your --

MR. JERZ: Yes, again, Joe Jerz, Palisades. So fundamentally, configuration management controls on the modification side, we still had tight controls.

We still have well documented

modifications. Configuration control room. Or I'm sorry, configuration control for switch valve positions, things like that.

Our control room operators have system full checklists to validate configuration, and we intend to step through each of those for restoration validation of proper positioning of items.

VICE CHAIR HALNON: So you're going to take those and have somebody just line by line go through them and make sure you're set?

Dennis, go ahead. But we're running out of time, so keep your questions to the relevant side, please.

DR. BLEY: Okay, well, I always thought that I did, but we'll see. You mentioned the CAP, the corrective action program.

Do you review a lot of significant events in operating history? Problems in the CAP have been associated with most of the ones that I've found really significant.

Can you tell us anything about how you've gotten a lot of confidence in the CAP?

MR. SCHULTHEIS: This is Mike Schultheis at Palisades. Fortunate for us, when we entered into

decommission, we had very low CAP backlogs.

It is a highly reliable plant. We were able to get after issues promptly and resolve them quickly.

But we do have access to all of the CAP that was in place when we were operating, and went line by line and reviewed for incorporation into the system readiness and return to service plans.

I'm hoping that answers your question.

DR. BLEY: Pretty well, and in the future, considering how it actually works in the future would be interesting. But not now.

MR. JERZ: The last thing I want to touch on really quickly in system return to service plans is we're also bringing in extended layup operating experience through one of our primary technical vendors, the supporting system return to service plan development.

And really brings a wealth of expertise in materials and effective layup. So that coming in is really helping to bolster evaluation of those effects of layup in conjunction with the early discovery inspections to pursue.

MR. ROBERTS: This is Tom Roberts. Can

you answer or explain briefly what logic validations means on this slide?

MR. JERZ: So that would be where we have breaker coordination, logics, specific items that have to trigger in specific sequences.

Our testing will validate that the triggers are occurring in those sequences as designed.

MR. ROBERTS: Is that part of the equipment validation, not procedure validation?

MR. JERZ: That's correct. So we have our former operating plant procedures, really all of our procedure set.

So it will be validation and equipment response, we're supposed to, with the only exception being it might change a logic response based on a modification I'm installing, then post-mod testing will evaluate a new logic response and also the modification package drives the update to the procedure.

MR. ROBERTS: Okay, thank you.

MR. JERZ: Okay, so with the significant discovery inspection, we'll step to the next slide. The first one we're getting done is our reactor vessel inspections.

So we did our ten-year ASME Section XI service inspection, and our material reliability program 227 exam, so all the vessel internals industry is familiar with the baffle bolts.

And really so, just a quick summary of results. So we inspected our thermal sleeves. We did find two of our four cold leg thermal sleeves rotated with a protrusion into the loop flow path.

This is a combustion engineering known operating experience issue, and we are citing the IER 13-2 documents from another site, and really right now it looks like our likely success path is removal of these thermal sleeves.

On our vessel cladding, we did find several round iron oxide indications less than one inch in diameter.

This is not unique in the industry. And we do intend to do an early evaluation to determine what our corrective measures or evaluation measures could be.

We also have three linear indications, the strip weld overlay regions, and again, early in the solution, just the development for these.

And then we did have one heat affected zone

crack in one of our specimen tube holder welds, and that will be addressed similarly to how we opt to address the other three linear indications.

We do know that we do have to do additional interrogation for underclad characterization. And we will evaluate in accordance with industry standards and precedent.

For our MRP examples, so we did inspect our clevis bolts. We did have lock pins backed out at five of six locations for our clevis bolts and we're developing a solution for the lock pin back outs, so the lock pin prevents the bolts from turning and backing out.

The clevis is really the anchorage to the bottom of the vessel. There is effectively two shoes that key weighs on the corner will set into and that really prevents long use vibration and carries the lower load for the quarter.

And these shoes on these protrusions on the vessel wall are bolted in place.

And then for core shroud bolts, so Palisades has 864 core shroud bolts. They are the equivalent one of the Westinghouse unit baffle bolts.

So of those 864, we identified four with

report indications, so less than half a percent. And then we did have 21 uninspectable, typically uninspectable because of the lock bar prevents the UT head from setting into the bolt correctly to get a reliable signal.

So 25 total that we can plan to address with the MRP guidance utilizing an acceptable pattern analysis.

VICE CHAIR HALNON: Were those lock pins that were backed out of the parts, did you find them? Or are you still capturing?

MR. JERZ: We did not find material that was definitively identified as lock pins in the vessel visual exam.

VICE CHAIR HALNON: So you don't know if it was backed out years ago?

MR. JERZ: We don't. We know that in 2014, we had one location where the lock pin was not fully engaged, but other than that, so it would have been sometime between 2014 and this inspection.

MR. BALLINGER: You know what? This is Ron Ballinger. You know what the material was of the bolts, is of the bolts?

MR. JERZ: I don't have that detail in

front of me. I know our material is different than the Westinghouse unit material.

MR. BALLINGER: That's what I thought.

MR. JERZ: And my understanding is the material of our bolts is the same material that's utilized for replacement for shroud or valve bolts.

MR. BALLINGER: Oh, okay, thank you.

MR. JERZ: Next slide, please. So we'll roll into our steam generator inspections. Again, another high importance inspection for us.

So Palisades has two combustion engineering steam generators. They were installed in 1990.

And our inspection scope is there, but essentially we do 100 percent bobbin and then special interest tubes with the rotating pancake coil.

Results to date really, our inspections are complete in each of our steam generators. And repair strategies are currently in development.

So we know that we have a total of 730 tubes in the alpha generator that do require repair. And then additional 259 that require repair in the bravo generator.

We are evaluating repair options and

scheduled currently. We are planning to pursue sleeving as a repair strategy, and this will require a license amendment request for a tech spec change to permit sleeving as a repair strategy.

VICE CHAIR HALNON: Go ahead, Steve.

MR. BALLINGER: This is Ron.

VICE CHAIR HALNON: Steve has his hand up.

MR. BALLINGER: Oh, I'm sorry.

VICE CHAIR HALNON: Steve Schultz.

DR. SCHULTZ: This is your first inspection since the generators were installed in 1990?

MR. JERZ: No, sir.

DR. SCHULTZ: Do you have any tubes that have been sleeved previously?

MR. JERZ: Not sleeved.

DR. SCHULTZ: Or repaired?

MR. JERZ: So, yes, in the alpha generator, we have 666 tubes that are plugged currently and another 493 in the bravo generator.

Of that, about 300 in each generator were plugged pre-service.

DR. SCHULTZ: Thank you.

MEMBER BIER: Another question.

VICE CHAIR HALNON: Ron's first.

MEMBER BIER: Oh, sorry.

MR. BALLINGER: Go ahead.

MEMBER BIER: Quick follow up. Do you have a rough idea what present D rate may be associated with the additional tube plugging, or is it too soon to know that?

MR. JERZ: So we're not planning to pursue plugging of all of the tubes. We are planning to pursue sleeving.

If I were in a condition where I had to plug all of the tubes, I would exceed my tube-plug limit, and that's not really a viable strategy for us.

MR. BALLINGER: You've asked my question. I was going to ask how much margin you actually had. And you're saying you don't have enough margin so you have to sleeve.

MR. JERZ: That is correct. I could not maintain -- so my tube-plug limit is 1,232 tubes in a generator. So if I plug 730 in the alpha generator, you add that to the currently plugged 666 then I'm over.

MR. BALLINGER: Okay, and the second question is, this is millennial (phonetic) alloy 600.

MR. JERZ: That is correct.

MR. BALLINGER: And I'm sure we're all

aware of the issues related to alloy 600, especially millenial tubing, and that was a sort of source of my question earlier about whether you were thinking about longer-term large component replacement.

Is it likely that those steam generators are just going to, for lack of a better word, continue to degrade no matter what you do, even with the sleeves?

MR. JERZ: So our pre-shutdown trends were very encouraging for operation of these generators until end of subsequent license renewal life.

We're still evaluating the impacts and really cause of the step change in repairs required based on this inspection, and our early assessment is really that it's associated with the secondary plant layup.

So the tubes were covered, but we did not maintain a nitrogen blanket, and really it wasn't in complete operating plant compliant layup for obvious reasons, right?

We were in decommissioning, so that cause evaluation and really new projections on life are in development currently, but we are currently in every operating plant recommended layup conditions and we are evaluating ways to potentially do a secondary plant

chem cleaning or things related to assure extension life, including potentially deplugging the pre-service tubes and inspecting and sleeving some of those if necessary.

MR. BALLINGER: But the inner rows are probably preemptively plugged anyway, right?

MR. JERZ: Our preservice plugs generally were around the inner rows, yes.

MR. BALLINGER: Okay, thank you.

MEMBER PALMTAG: So I just want to clarify, you're saying with these repairs, you think the steam generators will now last through subsequent life extension?

MR. JERZ: That is our goal. That is still in evaluation.

VICE CHAIR HALNON: So Joe, this is clearly one of your biggest challenges going forward from a physical plant perspective.

Who do you have engaged to help you with the staff, the permanent staff? Do you have contractors and other experts, any e-experts helping you out on these?

MR. JERZ: We do. Our primary inspection vendor and our primary tube integrity team are both

vendor experts.

Our inspection vendor and tube integrity team have been associated with these steam generators since, it's been at least 10 years. I think it was around 2014.

So, yes, heavy engagement from them, and Holtec brings us strong contingent of material engineering staff, and obviously is a heat exchanger design company.

So we also have the support of the greater Holtec team.

VICE CHAIR HALNON: I had forgotten that Holtec was in the heat exchanger role. Thank you.

MR. JERZ: Okay, so we'll roll into the next slide, please.

MR. BALLINGER: Sorry, one more question for clarification from me. The tubes were inserted in the support in the tube sheet, full depth expansion. How is it expanded?

MR. JERZ: It was an explosive expansion.

MR. BALLINGER: An explosive expansion.

MR. JERZ: Yes.

MR. BALLINGER: Okay, thank you.

MR. JERZ: So we have completed our

containment tendon testing. So Palisades containment is opposed tension reinforced concrete cylinder dome with a quarter inch welded internal lining.

Our tech specs surveillance procedure for our post tension system has been completed. No significant findings.

The samples that we pull are there, but essentially, all testing is complete. Nothing, no open outstanding issues.

We will, next slide, please, we will complete our 10 CFR 50 of Appendix J type A tests, our integrated grate test. We will do that prior to startup. That is scheduled for 2025. We'll pressurize instruments and pressurize tax and pressure for a minimum of 10-hour hold, standard type A test.

CHAIR KIRCHNER: I just had a -- in this containment design, what's accident pressure?

MR. JERZ: Fifty-five PSA.

CHAIR KIRCHNER: Fifty-five?

MR. JERZ: Yes.

CHAIR KIRCHNER: Okay. Thank you.

MR. JERZ: Palisades historically has been a very tight test, tight containment on our type A test.

Now we're going to, next slide, please, step into some reliability improvement modifications starting with reactor head nozzle penetrations.

So Palisades has 54 nozzle penetrations in their reactor head. Forty-five of those control our drives. Eight are in cores. And then we have one reactor head vent.

We do intend to modify the reactor head to eliminate the susceptibility to stress corrosion cracking in the head nozzle weld.

We have executed this modification on seven nozzles to date. All of them control our drive nozzles.

The remaining nozzles will be modified to remove that Inconel 600 J-groove weld.

MR. HARRINGTON: This is Craig Harrington. Basically, a half-nozzle repair?

MR. JERZ: That is correct.

MR. HARRINGTON: It's very unusual to do that on the whole head. Is that because you have the time and it's convenient or --

MR. JERZ: It is. It's unusual to see it done on the whole head because oftentimes, plants will opt to do a full reactor head replacement to address

this susceptibility.

But because of the time and the impacts, the greater plant impacts of trying to do a reactor head replacement, we feel this is the most viable option to really address the susceptibility.

This is will result in a reactor head that's just as safe as a new head.

MR. HARRINGTON: Thank you.

MR. BALLINGER: And this is Ron Ballinger again. Do you have any penetrations other than in the head?

(Simultaneous speaking.)

MR. JERZ: No other vessel penetrations other than the --

(Simultaneous speaking.)

MR. JERZ: Next slide, please. So in addition to dissimilar weld material mitigation in the reactor head, we do have DM welds in our pressurizer and primary loop connections that utilize Inconel 600.

So our highest stress corrosion cracking locations will be mitigated. It's a combination of strategies.

Some will be cut out and replaced. Some will get a full structural overlay. And some will get

a weld pad and half nozzle mitigation.

This does include all of the nozzles that are in the scope of ASME Code Case N-770, which by definition, those are your highest risk welds, and they're the ones that require the most inspection based on that risk.

So it is 31 total welds. Questions on that? Next slide, please. We are also going to complete our risk informed protection NFPA 805 modification.

So prior to shutdown, Palisades had installed 11 of these modifications, including the most risk-beneficial modifications, which really includes the single-biggest impact to our probabilistic risk assessment and it's already been completed.

And that's the addition of that fourth auxiliary feedwater pump that is diesel driven.

We will complete our remaining 21 modifications and the most significant one of those remaining is the fire detection system upgrades.

The we have several fire barrier, conduit seals, doors, dampers, some sprays, closure, logic revisions, and then local control power sources.

VICE CHAIR HALNON: For the NFPA 805, you

were not on any 805 prior to shutdown? Is that correct?

MR. JERZ: They were a partial implementation NFPA 805 plant.

VICE CHAIR HALNON: You do have a PRA 805?

MR. JERZ: I do, yes, and these remaining modifications are quoted in the PRA and just not yet set to active.

So that's part of our general PRA model updates, is as these mods complete, the PRA will activate these mods within the model.

VICE CHAIR HALNON: And you're fully confident you're going to get that prior to startup?

MR. JERZ: Yes. Yes.

VICE CHAIR HALNON: Or I guess prior to the operational programs taking place.

MR. JERZ: I don't --

VICE CHAIR HALNON: That's got to be before startup.

J: It will be before startup. Yes. We will be fully NFPA 805 compliant in accordance with the submittal list, submitted list of mods that we said we would complete for full compliance.

Next slide. So the next reliability improvement, we do intend to replace our component

cooling water heat exchangers.

So fundamentally, CCW removes heating from systems which handle radioactive or potentially radioactive fluids.

And the CCW heat exchanger is the primary heat transfer source between CCW and the service water system.

This really benefits this most in margin increase for the CCW systems. So the CCW system was one of our lower margin systems, and this modification truly just increases that margin.

It gets us to 100 percent capacity heat exchangers. Next slide.

As I had mentioned earlier, we are going to do rotor replacements to our main feedwater pumps, steam turbines.

So the current rotors, we had to remove the L zero blades to eliminate road degradation. We had cracks in the L zero blades.

That's a mechanism that will continue to pass down the rows. So rather than continue to live with that as a potential failure mode, we're going to replace the rotors.

That will give us improved feedwater

reliability. It will eliminate plant trip risks associated with secondary plant issues, which is really the intent of the next mod on the list, which is our heater drain tank level control.

We're conducting modifications to the valve control to eliminate our last unmitigated single arm vulnerability and reduce trip risks associated with this couple.

VICE CHAIR HALNON: What about the other heat exchangers on the secondary side? None of them were in the layup properly. Kinda of talked about the inspections and the reasons you have to do that.

Talking about reliability, feedwater and obviously heat exchange is important.

MR. JERZ: Yes, so our aging management program for heat exchangers including raw water heat exchangers, they do have a full inspection plan in development.

And based on the early discovery, these steam generators were exploring pulling back in sooner than we had originally planned, and that will look at condenser, feedwater heaters.

We are looking at our shutdown cooling heat exchanger as well. So, it's definitely on our radar

and something that we're pulling in early for discovery out of the way.

VICE CHAIR HALNON: Do you have, I don't know your system RCS letdown coolers?

MR. JERZ: Say that again, please.

VICE CHAIR HALNON: Might be a chemical compliance control system. In B&W speak, it's a letdown cooler, but it's a main portion of your RCS.

MR. JERZ: We do have a letdown heat exchanger.

VICE CHAIR HALNON: Has that been inspected?

MR. JERZ: I don't know that answer currently.

VICE CHAIR HALNON: It's usually a high source of potential radioactive leaking in the basements or inner system issues.

MR. JERZ: I can say our letdown heat exchanger is planned in restart scope.

VICE CHAIR HALNON: Okay, restart.

MR. JERZ: That is correct. Next slide, please. Station batteries. Oh, got it, thanks. So station batteries are our primary power source for emergency DC.

Batteries are at end of design life so we are scheduling that replacement as part of restart.

And that is my last slide. What questions do you have?

VICE CHAIR HALNON: Questions from members or consultants? Bob?

MEMBER MARTIN: Yes, Bob Martin. Lot of changes. A lot of work that is obviously planned. In engaging with Entergy staff, are you preparing brand new FSAR or is this updated SAR with a bunch of §50.59? Or what does that look like?

MR. JERZ: So the answer is there will not be a brand new UFSAR. We'll probably on the last docket of USFAR.

Changes to that since the last topic, since we were heading into decommissioning, the majority of them are just things that we will remove because of decommissioning, that we've backed in to make it look as it was.

And then each modification, the modification process will go through the impact to that UFSAR and be updated through the §50.59, and the mod process includes in the §50.59 process.

And, I mean, kind of related to the

administrative side, which does have a very same side, ask a couple questions on quality program.

The records management, I just think of all the projects I've been on that died. You do a lot of layup and a lot of that stuff, it's hard to access in.

But was your records management system kind of maintained the whole time and healthy?

Software gets updated and things happen. It can be very disruptive to go back, even after a year or to.

MR. SCHULTHEIS: This is Mike Schultheis at Palisades. We never, what's the right word? Moved any required records.

We still have them all maintained and are operating, even though we have allowance to do so, we have not done that.

And so we still have access into all of our previous records and they are retrievable and being used.

MEMBER MARTIN: So you kind of mentioned some deferred upgrades, I would assume this would happen. Then again, my own experience with projects at hand, laying up activities, you can lay up packages as far as documents.

I've gone back to those. Those things are almost worthless so often. You must have run it and have some you have to sort of recreate.

MR. JERZ: So I will say, again, Joe Jerz, Palisades, so one of the significant areas where we laid up a project was the vast majority of our NFPA 805 modification packages were complete, and we are utilizing those as a starting point for restoration of those mod packages.

That effort has been in rolling for about the past year now, eight months. And they're better than useless. I will say that.

But they do have to be updated to our current procedural requirements. The technical content in some cases, some of the equipment specified was obsolete, so we're doing updates to new models and the currently available equipment.

But certainly, we've run into that, and it's something that we're working through with our modification process.

VICE CHAIR HALNON: Steve Schultz? Steve?

DR. SCHULTZ: Yes, one of the major projects that was completed recently was the primary

coolant system decontamination with regard to layup. Any specific or important lessons learned associated with that program and process?

MR. JERZ: I would say project coordination lessons learned or the primary lessons learned we took away from that really just how to work effectively on a large scale project like that.

The primary coolant system, CAN-DECON, has proven very effective in dose reduction for CRC generator inspections, our vessel internal inspections.

Dose rate improvements were phenomenal. I don't have the quantification with me today, but our realized dosing improvements were exceptional.

DR. SCHULTZ: That's good to hear. Thank you.

VICE CHAIR HALNON: Scott? Did you have a question?

CHAIR KIRCHNER: Yes. I know that updating with all these changes, updating the FSAR as it was left is a formidable task.

But that's mainly bookkeeping. More importantly, how much of your chapter 15 analysis and containment analysis and such has to be revisited based

on your, as inspected, as corrected, or as modified, plant?

And the steam generator is a good example. If you have X number of tubes, part of the repair, whatever, obviously that's going to change your operating conditions and then that has an impact on your chapter 15 analysis.

Do you have a feel for how much of that has to be revisited? And a connected question, you talked about new fuel.

So is the fuel basically the fuel that you were using before? So you're not, major changes in enrichment or anything like that? It's kind of a complicated question, but those things that a plant that will be modified that might impact the safety posture of the plant.

MR. JERZ: So I'll answer your second question first. We are returning to our fuel design that we were operating on previously.

So no safety analysis changes. As far as chapter 14 analysis updates, policy is a little different, chapter 14 for us.

Generally, for modification purposes, raising chapter 14 analyses is design input with intent

to minimize impacts to our safety analyses.

We do have a concerted effort to review safety analyses for previous open changes and complete an incorporation so that I have a clean starting point going forward.

The modification process does drive review of affected calculations, affected analyses, affected procedures, any that are required to be changed based on modifications will be done.

And as far as specifically to steam generators, the safety analysis assumes the 15 percent tube-plug limit, which we have currently evaluated.

If I maintain below that tube-plug limit, that safety analysis input is bounding.

We are thoroughly reviewing safety analyses to ensure that any impacts and changes are appropriately updated or completed as necessary.

CHAIR KIRCHNER: Okay, thank you.

(Simultaneous speaking.)

MEMBER MARTIN: Of course, I saw your slide related to the CHF changes, and I'm familiar with the document, the non-local that you cited on that slide.

It's been a long enough time that methods

change, right? Five, six years or so. Vendors are coming in. I assumed it's still doing the fuel. I saw the EMF number, which --

(Simultaneous speaking.)

MEMBER MARTIN: That's what I work for. The titles change, exactly. I assume they're handling all the really -- the term on the analyses and preparing the documents and that sort of stuff.

They've had to tell you that things have changed and there are methods, retire methods. If the customer wants them, I guess he can get them, but usually, like to tie fuel contracts with the methods.

And you want the latest and greatest. There is going to be, I guess they told you there is going to be a little extra involved in developing the models and the analyses, just given their progress and their engagement with the NRC, among other things.

Have you anticipated that? Because methods are time consuming. Applications are not. Because even if you start, you know, they have all your data, all the design information, except for what you are possibly changing.

But I would think the timeline for those kind of things is at least a couple years for them to

go through that exercise.

And maybe I'm being conservative. So, it's not an easy job.

MR. JERZ: Yes, I will say, we didn't anticipate two-fold issues that were going to be long straws with fuel design.

One was procurement of material for tooling and procurement of material for the structural components for the fuel, just procurement in general, the uranium material.

But the second piece of that that we started very early was the design piece, the fuel design piece, recognizing that that certainly, as long a straw, it's a critical path.

MEMBER MARTIN: I mean, it makes sense. That does sound like a more critical path for analysis.

MR. JERZ: Our current critical path remains our operating training program.

MEMBER MARTIN: Well, right, for the big pictures.

MR. JERZ: Yes.

MEMBER MARTIN: And for chapter 15.

MR. JERZ: Into physical procurement, physical component cooling water heat exchanger,

actually, right now, is sitting at the physical plant. We're on critical path.

VICE CHAIR HALNON: One last question. Sort of building a nexus earlier for discussion earlier about corrective action programs, let's transition to the next presentation after this, because this is very specific question with a generation application.

In '22 it was an observation by the NRC that the threshold of bettering things in the corrective action program is not sufficient.

And that was for a decommission plan, which is bound to be less sensitive operating plan just by nature of the fact that it's decommissioning.

How can we be assured as a management team that that indication of a deficient corrective action program, or at least a stuttering one, in decommission cycle, does not translate into a problem moving forward from a physical perspective and programmatic perspective?

MR. SCHULTHEIS: This is Mike Schultheis, Palisades. So we agree that it's vital that you have a healthy CAP on what are appropriate thresholds for initiation.

So that's, it partially ties into the

safety culture assessments that we're going to do twice a year.

Anecdotally, we believe that the threshold is much higher and healthy than where it was at the onset of decommissioning, and we plan to do assessments specifically geared toward that, and also we have our quality assurance program and department that can independently audit the effectiveness of that.

VICE CHAIR HALNON: Okay, so that's programmatically and culturally. How about physically? What if things work? You walk by an operating system and you see something and you stop and you write a corrective action document when you're operating.

You walk by a system that's shut down and it's decommissioned. You see it and it's not quite right, you just walk by it because you don't care. Those are the types of things that I'm wondering if you're doing comprehensive walkdowns and hanging on things and making sure that everything's anchored properly and stuff like that?

MR. SCHULTHEIS: So comprehensive walkdowns are a part of the system return to service strategy, but additionally, the question you're really

driving at drives a culture.

And we're driving a culture of an operating plant mentality no different than if this plant was up and operating today.

And engineering, ops, RP, security, all are departments. We're continuously reinforcing the importance of identifying conditions in the field, getting them in our corrective action program for early identification, resolution, and operability assessments, those things.

So it's really that when we talked about bringing in new staff, especially staff new to nuclear, it's that emphasis on the role of the clear professional in a nuclear power plant, right?

So, structurally, system return to service has comprehensive lockdowns. Culturally, we're driving that restoration, and as Mike noted, anecdotally, we see a significantly improved threshold for corrective action program entries.

VICE CHAIR HALNON: Okay, one last just follow up. What is the present status of the plan? Are all the systems operating that can be operated at this point? All systems, people and systems, that sort of thing? Are all the systems in recirc? Are the

operating systems now, are they still --

MR. SCHULTHEIS: I'm operating all the systems can operate efficiently, but I do have systems where I know that for instance I have major pump or motor maintenance that we're going to conduct before I want to return systems to service.

Yes, so a lot of the steam plant systems are not currently active, but systems like instrument air, shutdown cooling systems, things like that, have been in service or are.

VICE CHAIR HALNON: What you can operate you're operating?

MR. SCHULTHEIS: That is correct.

VICE CHAIR HALNON: One last chance to the function arena.

MR. HARRINGTON: This is Craig Harrington. Just one real quick question. In all your inspections and restart planning, are you structure that from an engineering perspective through program engineering or a plant system engineering type structure?

Or is that something that you'll transition to later? Kind of building that culture now?

MR. SCHULTHEIS: So, yes, effectively, every new hire that comes into engineering has an operating plant role that they're hired into, and every system engineer is being dedicated to system return to service. So as we hire engineers, we're rolling them straight into certs because it's the best opportunity they're ever going to have to see their system maintenance, system testing, all of that integration, in addition to integration within technical expertise that we have on site specifically for this restart project.

VICE CHAIR HALNON: One last chance. Let's see, I have three folks online. Dennis, Steve, and Vesna. Anything from you all to follow up?

MEMBER DIMITRIJEVIC: Thanks, Greg.

VICE CHAIR HALNON: Thanks, Vesna. Okay.

DR. BLEY: Yes, Dennis.

VICE CHAIR HALNON: Go ahead, Dennis. Go ahead.

DR. BLEY: Jumping way back to steam generators, one of the -- I mentioned earlier, one of the things we learned after having them in dry layup, we had a warm air blanket on them and thought that would keep the moisture out.

When you've got part sludge inside, and we hit a few feet, you can't dry the things out ever, and that's why we've had such a problem.

So, you were saying you might be chemically cleaning these? Could you tell us anything more about that? What will make your decision there?

MR. JERZ: Yes, this is Joe Jerz from Palisades again. So we're still in really early assessment of what we can do to really drive that end goal of long-term end of subsequent licensing real life sequencing generators.

So secondary plant chem cleaning is still just in the very early evaluation. I will say, we weren't necessarily in a dry layup condition.

We did maintain steam generators secondary side, full to above the U tubes.

DR. BLEY: Oh, okay. That's different. Okay, and do you know how much hard sludge you have?

MR. JERZ: So we did a sludge lancing campaign prior to inspection of this outage. I don't have the numbers for how much sludge was removed, and we are exploring opportunities to do additional lancing.

DR. BLEY: Okay, thanks.

VICE CHAIR HALNON: Okay, Jean, thank you for your presentation and your team. Appreciate it very much.

I know you'll be here. If we have additional questions, we focus to you. At this point, we are going to take a 10-minute break. It's 10:35. Well, 9-minute break. We'll be back at 10:45. And the NRC staff will transition to the table. So, we are in recess until 10:45.

(Whereupon, the above-entitled matter went off the record at 10:36 a.m. and resumed at 10:45 a.m.)

VICE CHAIR HALNON: Okay, welcome back. My name is Greg Halnon, subcommittee chair for the Plant Operations committee. I'll turn this back to Jamie Pelton for the NRC presentation.

MS. PELTON: Good morning. My name is Jamie -- sorry, Jamie Pelton. Sorry, name change. Still getting used to it.

It's been a while. I apologize. My name is Jamie Pelton. I am the Deputy Director for the Division of Operating Reactor Licensing at NRR, and I am one of the co-chairs of the Palisades restart panel. I'll introduce our team here, starting with Jason.

MR. KOZAL: Hi, good morning, again, Jason Kozal, Director of Division of Operator Reactor Safety, Region III.

MR. POOLE: Hi, I'm Justin Poole, I'm the Palisades restart project manager at NRR.

MR. MCKENNA: Good morning, I'm Phil McKenna, I'm the Deputy Director of the Division of Reactor Oversight at NRR and I'm also one of the panel co-chairs.

MS. NGUYEN: And good morning, my name is April Nguyen, and I'm the team lead in Region III for Palisades restart project, responsible for oversight of the inspection.

VICE CHAIR HALNON: So, April, are you based in Region III?

MS. NGUYEN: Yes, that's correct.

MS. PELTON: So thank you for the opportunity to speak to you this morning. We are looking forward to sharing the work that we are doing from a licensing, oversight, and inspection perspective to ensure that the activities associated with the Palisades restart are done first and foremost safely and in an efficient and timely manner. So next slide, please.

So we will talk very briefly about the project history. You've heard a lot of that already, so we can go through that quickly.

I'll talk about the purpose of the Palisades restart panel, what our goals are. Just want to go into more detail on the specific licensing actions, and then we talk about our existing processes. He'll talk through that.

We'll also talk about quality assurance and our oversight process. Jason will talk about that high level inspection plan. And April will go into detail about how our risks are informing our inspections and how we are (audio interference) in Region III.

Finally, we will talk about public engagement, the importance of that, and the focus that we've had on public engagement throughout this process. Next slide, please.

VICE CHAIR HALNON: So, Jamie, you need to --

MS. PELTON: Yes.

VICE CHAIR HALNON: -- focus in on that --

MS. PELTON: I apologize. Okay, thank you. So as we heard, Palisades shut down in May of

2022, and went into a decommissioning status the following month.

Early last year, Holtec engaged the NRC to talk about their regulatory path for reauthorizing power operations with a goal of transitioning to an operating status in August of 2025.

As you learned, the strategy involves returning to licensing basis to that of which it was prior to shutdown, with some minor modifications.

We are evaluating -- we are actively evaluating from a technical licensing oversight perspective the adequacy of the licensing applications as well as the activities going on onsite.

Our staff are actively engaged. With that, we'll go on to the next slide.

VICE CHAIR HALNON: Jamie, before you go on, can you go back to that slide. You say it's going to be returned to status prior to operation with minor modifications.

I understand that we understood that the GSI-191, open phase, and post-Fukushima actions will not be completed prior to that startup. Are those considered minor modifications that need to be done?

Or why is that okay that they can start

authorize restart without that guidance in place?

MS. PELTON: So part of the formula in GSI-191, for example, we'll be having some application of pre-application engagements on that later this year to understand that more fully.

And before we authorize operations, we'll ensure that we are satisfied.

VICE CHAIR HALNON: At least there's a justification for continued operations. You want that on open phase the same way? And Fukushima, post-Fukushima actions, they should, you know --

(Simultaneous speaking.)

MS. PELTON: Yeah, so we'll be evaluating closure of all of those.

VICE CHAIR HALNON: So let's -- just to make sure we --

MS. PELTON: Absolutely.

(Simultaneous speaking.)

MS. PELTON: Absolutely. April will go into detail on that.

VICE CHAIR HALNON: Okay, thanks.

MS. PELTON: Absolutely. So one of the first things we recognize is that this is a first of a kind restart.

The importance of engagement between headquarters and our regional office were absolutely critical.

So we established the Palisades Restart Panel and chartered this panel in November of 2023.

Recognizing prior large scaling unique projects such as Watts Bar, Vogtle, and the Watts-Bar Reactivation Group, Vogtle Readiness Group, these panels work together to ensure that all headquarters and regional stakeholders are on the same page.

So we are co-chaired by licensing organizations, the oversight organization in the region, and the oversight organization at NRR.

So, one of the primary focuses is coordinating efforts across the agency. So while it's formally led, my licensing oversight and inspection, our partner in MSS, NSIR, Office of the General Counsel, OCA, and OPA, are absolutely critical in ensuring that we've got the right resources, the right people, conducting these reviews and doing the safety evaluations.

As challenges are identified, the panel is the focus area where we evaluate these challenges, make sure that we have resolved those issues, and get the

right people in place and the right focus on resolving those challenges.

Recognizing also, we have external stakeholders. This panel is actively engaged in interfacing with our state, local, federal partners, and public outreach is a huge component of what we do as a panel.

We have quarterly meetings. Jason will talk a little bit more about that public engagement.

We also have information about this project to be easily accessible to the public, so we have a website that we have generated. It's linked on the main NRC.gov page.

That's a one stop shop for anything related to public meetings, all of our licensing actions, any communications regarding those licensing actions, all of our inspection reports, and other items of interest as we get questions at public meetings on certain helpful areas.

We'll share information on that website. So those are all focus areas for this panel. Move on to the next slide.

So again, very quickly, this shows our

leadership of the panel between DORL, DRO, and effectively, this team here in front of you.

We'll go on to the next slide. And this is just a very high level overview of -- this is a slide that we share, a poster that we share at our public meetings.

So it shows there is overlap between decommissioning and the restart activities. So, as the restart activities for licensing oversight and our environment review are increasing, the decommissioning activities are winding down, ultimately with a transition date in the future, assuming the actions are approved, that will eventually transition the site into the reactor oversight process.

And with that, I am going to turn it over to Justin to talk more about the specific licensing actions processes.

MR. POOLE: Thanks, Jamie. So, again I'm Justin Poole, project manager, DORL. So you heard earlier from Jamie, the NRC staff engaged in technical and oversight reviews and the activities necessary to support potential restart at Palisades.

And, but now we're going into some greater detail in the licensing and inspection strategy and how

we have structured the project to ensure safe resumption of the power operations at Palisades.

To start, I want to say that it's the NRC staff's position that Palisades has an operating license issued under Part 50 that is still valid, i.e., it has not been terminated.

However, the conditions of that license currently do not allow for operating the reactor.

In March 2023, Holtec sent a letter titled Regulatory Path to Reauthorize Power Operations at Palisades.

And in this letter, they laid out their plans to submit the exemption request, the license transfer, and the series of license amendments to restore the licensing basis of the plant to that which was just prior to shutting down in May of 2022, with some exceptions.

In this letter, Holtec references a 2021 petition for rulemaking, as you can see on the slide there, PRM 50-117, that was denied by the Commission.

This was a petition for the NRC to modify regulations for the scenario of a plan requesting reauthorization of operation after apparently shutting down, i.e., they had sent in the two certification

letters that you heard about earlier under §50.82(a)(1).

In its denial, the commission stated the following. While current regulations do not specify a particular mechanism for reauthorizing the operation of a nuclear power plant, after both certification of power submitted, there is no statute or regulation prohibiting such action.

Thus, the NRC may address requests under the existing regulatory framework. The NRC staff believes Holtec's plan to restore the authority to operate through the use of an exemption request through these and an exemption request, the license transfer and license amendments is within the existing framework as the whole process is defined by the regulations to modify an existing Part 50 operating license.

If all the NRC requirements are met, and all the -- sorry, if all the requirements are met, all the licensing actions are planned to be issued on the same day, as Holtec mentioned earlier.

This includes the completion of the environmental review. Given how the licensing actions are intertwined, staff felt it best to issue them all in the same day in order to avoid any potential

complications.

These licensing actions will not become effective or implemented until after the licensing is confirmed and is ready to operate the plant, as you heard earlier from Holtec.

When these actions are implemented, Palisades will exit decommissioning status and be considered an operational plant at that time.

Next slide, please.

CHAIR KIRCHNER: Justin, this is going to sounds like an unfair comment, but I'll say what I'm thinking, so it's my opinion.

Often in these things, if I'm in your situation, the applicant's situation, I'm laying out a plan of attack that has a lot of parallel paths, and I'm looking at the critical path.

Conceptually, as OGC raised any problems or have they legally, so to speak, I'm not a lawyer, agreed that this is a path forward that is going to meet all the requirements that are often on the technical side that this should go through?

Or do you get to August of next year and have a lengthy legal review? Adding on to that, I'm trying to understand whether or not general counsel has

basically accepted this path and that it's achievable in context.

MR. POOLE: So, understood. So I don't want to speak for general counsel.

CHAIR KIRCHNER: But they are part of your team.

MR. POOLE: But they are, correct, so they are part of the restart panel. They sit in on all of these meetings. They have understood the path that the staff is taking.

And at this point, we have not received counsel otherwise. I'll let Jason add.

MR. KOZAL: From the onset of the panel, once we recruit, created, we recognized the fact that, I like to call it regulatory entrepreneurship, but we're going to have to navigate a lot of different activities related to licensing, oversight, the QA program, all of these things that are related to an operating reactor that are happening during decommissioning.

So we've had strong support by the Office of General Counsel from the inception of the program, and they're involved in just about every meeting we've had along the way.

And right now, we have no legal objection.

CHAIR KIRCHNER: Thank you.

MR. POOLE: Next slide. There you go. All right, so this line is just a summary of all the licensing actions that you heard earlier from Holtec that they had planned to submit to restore the licensing basis.

We'll touch on these in the next few slides, although you've kind of already heard about most of these already from Holtec and their presentation.

But the dates on the left are when the licensee submitted the applications to you, or to us, the NRC staff, and then the column on the right hand side is the dates that we provided to Holtec and our acceptance reviews.

So like any other license amendment, requests that the staff here in accordance with NRR, we perform an acceptance review and we provide back an estimate, a completion time, and we spent hours.

Those dates on the left are when we believe we will complete the safety review. And that's what the note on the bottom points to, because there's an environmental review tied into all this that could be

longer than some of these dates.

So it's not exactly when we plan for the actual approval of these documents, rather the --

VICE CHAIR HALNON: Just to clarify, you're going to be finished and the licensing applicant will know on May 1, the emergency plan it's okay with (audio interference).

Or is there anything else?

MR. POOLE: More or less, yes. No, we are not going to issue -- the dates again on the right, they're not when we would issue approval of those different licensing actions, it's when we believe we'll be complete with the safety review.

VICE CHAIR HALNON: Will there then be a distinct letter for each one of those saying yes, we accept your tech specs, or we accept your emergency plan, or --

MR. POOLE: Yes, that's the plan right now. We've said in our letters to Holtec that we would notify them via separate correspondence when the safety review was completed.

VICE CHAIR HALNON: Because what I was thinking through was ten years down the road, another plant wants to come out.

Is there going to be a one stop place where they're going to get, other than potential guidance that might be put out there, but if you go back and look at the Palisades' restart, will there be one place to go get at least a reference to all the things that you all do?

MS. PELTON: So one of the things that we thought about as we developed our inspection guidance, as we developed our restart panel charter, is exactly what you're saying.

One of the things we will do is complete a lessons learned and document from a process perspective, all of the things that came up, the challenges, the lessons learned, and that will be available.

VICE CHAIR HALNON: Right now, the only constraints you have are what the panel was saying as far as maneuvering through the regulations, OGC's not on your panel.

So are you making sure it's proper from a regulatory perspective and statute perspective?

And when we get done, say, here's a bucket of stuff that we have. How can we organize it for the next one?

MS. PELTON: So we have laid out the framework in an inspection manual chapter.

VICE CHAIR HALNON: Yes, I saw that later on.

MS. PELTON: Yes, that Bill will speak to.

VICE CHAIR HALNON: Thanks.

MR. POOLE: Next slide, please. So again, these next few slides are just going to touch on all the different licensing actions that Holtec has sent to the NRC.

Again, you've heard a lot of this already, so I'll try not to spend too much time on it.

But so this was the exemption request that came in on September, as you heard, and it's in order to rescind the certification that they had sent before because per the requirements in §50.82, at this point, per the regulations, they are not allowed to operate the reactor, nor are they allowed to put fuel in the vessel.

So the staff has it for its review, and the review is ongoing. Next slide.

The technical specifications, there's two bullets here, right? Well, sorry, first bullet, licensee sent in two license amendments related to the

operating license and the tech spec, sorry, technical specifications, to restore those to what they were prior to shutting down again with some minor changes.

One thing that I do want to point out here, and it was talked about earlier, was the reference to revision 35, with Palisades final safety evaluation on board as the basis for the design of the plant and the analysis of the technical specifications were derived from.

Since rev 35 was the last revision, in effect, before shutdown, the NRC found both FSAR and the technical specifications acceptable to safely operate the plant.

At that point, the NRC staff's review is focusing on any differences that would exist in the applications between the FSAR or the --

(Simultaneous speaking.)

VICE CHAIR HALNON: Justin, how are you determining that? Because the FSAR was probably not kept up to speed, kept up to date, in §50.59. It was probably DSAR. It was not the -- are you comparing -- how are you making sure that all the documentation through the §50.59 process is complete? Because it's not necessarily captured in the last

revision of the FSAR, two or three years between --

MR. POOLE: Right. So, I think my answer to that is going to be, for stuff that they did for decommissioning, right, that's not what they're taking credit for, for the technical specifications and the design of the plant as its operated back in May, right?

We're going to look at how the tech specs looked in May of 2022, the FASR from May of 2022, as the basis for the tech specs and the FASR going forward.

VICE CHAIR HALNON: I think the question is more specific. Is this any modifications that were done I think in my perspective were done in a different mindset.

We're staying in decommissioning. Therefore, the safety, have I created any actions, those questions, go away pretty quick.

If it was now, the same modifications, are they going to redo the §50.59s to show that they can be put into the FSAR for 36?

MR. POOLE: So what we're going to -- what we've talked with the licensee about to resolve this, I believe, to your concern, is again, they pointed to reg 35 and then talked about making potential changes using §50.59.

We do believe that we want to understand what rev 36 will look like going forward, so we have asked, not formally yet in RAI, but we are tracking it, to get the licensee to notify us what those changes are.

So rev 35 plus what is going to be what's going forward.

VICE CHAIR HALNON: Okay, will you be inspecting their §50.59 process, and then §50.59 total evaluations screened out.

They are screened out because it was decommissioned. They wouldn't screen out maybe readily if they were operating.

MR. POOLE: This is a great question. Yes, we are. The part of the plan for expecting system restoration is obviously ensuring that those systems that have to restart according to what score can be the current version of the FSAR, and any of those, and as the licensee and Holtec had talked about, as you do those restoration plans, they are validating that they're fine with their design basis.

So any changes that should be caught, caught, as part of that system restoration plan, and part of what we'll be inspecting is to ensure that is being done.

If there are §50.59s related to it, we make sure that they're done accurately and --

(Audio interference.)

VICE CHAIR HALNON: Okay, so either redone or just evaluated based on an operating mindset rather than a decommissioning mindset.

MR. POOLE: Yes, that's absolutely it. It's kind of just, we're going to hang ourselves a little bit, but that's kind of the crux of all of these activities, is inspection program, the licensee restoration program, pretty much all of the activities that are happening now related to restart, are with an operational mindset as if the submitted FSAR's in place, as if the QA plan that's been amended is in place.

So those activities, we have confidence moving forward when we do issue the licenses that the activities that have happened over the last year and a half are compliant with Appendix B and other regulations.

VICE CHAIR HALNON: Okay, because that goes back to the same thing with the license transfer. The transfer to an organization, the mindset they're going to decommission it, but now they're operating it.

They're redoing their technical and

financial obligations to try to get the decommissioning trust fund back up to speed and get all that infrastructure in place, regulatory infrastructure.

So you are looking back and making sure all that's in place? Okay.

MEMBER MARTIN: Member Martin, follow up question. I had a similar question to Holtec. Previously, and the answer I got for a lot of the changes that came with the transition to shutdown efficiency was that, we might have disassembled something, moved it to the side, and then the plan was just to take it, bring it back.

Now, would that be a change like under §50.59, that movement and back that you would review the activity?

Or do you just say, all right, it looks the same? And move on? I mean, most of it should be simple.

(Simultaneous speaking.)

MR. POOLE: Well, I would call it maintenance activity, right? So it would be no different than a plant like changing out a -- like they are online.

And they would need to make sure that when

whatever component is in place or if they've just assembled something, put it back together, was it assembled in accordance with their process, procedures, and their license basis, and we validate that as we do for all inspection activities.

And then as part of the restoration processes, they're doing a full suite of testing, baseline testing, surveillance, tech spec surveillance testing, all those to validate that everything works appropriately.

VICE CHAIR HALNON: Okay, we'll see how the maintenance goes.

MS. NGUYEN: I can provide an example maybe to help illustrate this a little bit a better. This is April Nguyen. I'm on a team at Region III.

So as an example of kind of this process, right, when the plant went into a decommissioning status, for example, the service water system logic changed.

You don't need as many pumps and you don't have the same kind of heat capacity that you're looking at.

So the system actuation logic actually changes during that process. That was controlled with

like a temporary modification type of documentation.

That's something that we have on our list to look at. Okay, are they going to change that back to what an operating plant would need, including doing the system restoration testing, to verify that that logic is in place correctly for the accident scenarios that you would look at for an operating plant.

So we're looking at those chapter 14 analyses, those design basis requests that you would have.

So things like that are on our radar as we go system by system and take their licensing folks to understand where the plant was, what was changed, and where they need to go back to.

MEMBER MARTIN: So the answer was, it depends.

MS. NGUYEN: Yes.

MEMBER MARTIN: Truly, that was your answer.

MR. POOLE: And then the second bullet there just talks about how Holtec submitted the operating tech spec licensing amendment to include a statement about what they were doing in the physical security plan.

The light VFs are, they are going to revert to the version that was in effect just prior to shutting down for the physical security plan that is rev 16.

And then again, if there's changes made either during decommissioning or in the future as they move forward, they're going to evaluate it using the §50.54(p) process, similar to how a licensee would do the §50.59 for the FSAR.

And if anything got flagged that needed NRC approval, they'd obviously have to send it to us. Next slide.

So again, common theme here, the licensee sent in, to restore the emergency plan, again to basically, the emergency plan that they had previously, or at least they needed to restore it back to one that supports power operations, as you heard earlier from Holtec.

It's not going to be exactly the same as it was before, because they're going to take advantage to updating certain portions of the EP strategies based on recent guidance documents and initiative.

But the emergency action level scheme is being restored to the last approval scheme, and as you heard earlier, they are reestablishing offsite EP

agreements that were removed as part of the transition to decommissioning. Next slide, please.

And then again, Holtec mentioned this briefly in their presentation before, they had an unresolved item during plant separation, Framatome notified all the affected plants, of which Palisades was one, of a deviation associated with the critical heat flux correlations utilized in the main steam line break analysis.

Prior to Palisades shutting down, the ultimate resolution was the issue of a topical report from Framatome, but since Palisades was shutting down at the time, they were not included in the version of the report that was approved by the NRC.

So this amendment would simply allow Palisades to use the same topical report. And again, this was, I think Holtec mentioned, this was unique to Palisades not something we would expect other licensees to come in with if they were tempted to restart a plant.

Next slide, please. All right, and again, the license transfer. So on December 2023, Holtec sent in their license amendment -- well, their application to transfer the license. And as you heard from Holtec, in order to essentially establish an

operational portion of Holtec and keep the decommissioning activities that Holtec has within HDI, so I think it was mentioned by members before, the staff review is going to focus on the financial and technical qualifications of this new organization as well as the review of the operational quality assurance program.

So with that, I will turn it over to Phil McKenna to talk more about quality assurance.

MR. MCKENNA: Good morning, this is Phil McKenna, and I'm the Deputy Director of the Division of Reactor Oversights.

So when Holtec made their presentation, they talked to their quality assurance plan.

The other thing I'll highlight in this slide is that we had two public meetings early on in the process to ensure that we understood the plan for Holtec's quality assurance so we understood that they had the right quality assurance in place as they were doing restart to the plant for Appendix B purposes.

So as you can see, in the end process, they submitted their operational QA plan for us to review. That's currently under review, and that will be completed along with the suite of other licensing actions.

And in its place, to supplement their decommissioning joint plan, they have the transitional joint plan that brings back in operational programs as they're doing restoring activities.

VICE CHAIR HALNON: I want to pose a question on backfit, but I don't know how to do it just yet to make it correct in language.

But when you open up a license amendment of this magnitude or immense, you can force the applicant to bring the plan up to the current, like flooding analysis, you can -- current reg guide type stuff.

Is any of that required in this situation? Or are they current enough on the present guidance for seismic flooding, all these other type things that normally would be a back fit to an operating plan?

MR. MCKENNA: So, I'll take a start at that. Maybe Jamie can supplement, is that we did not require as part of the licensing process to do any back fits to restore the plant.

MS. PELTON: Yes, the approach that we considered as we -- especially in the early days as we're figuring out how this process is going to work, fundamentally, the plant has the renewed operating

license through 2031 and had been operating safely at the time of shutdown.

So from our assessment, we did not determine that additional requirements would be needed for safety, that their licensing basis prior to shutdown with the proposals that they're making, if approved, would be sufficient for safety.

VICE CHAIR HALNON: So from a regulatory guidance, I'm sorry, requirement perspective, you're potentially pretending like it was operating during that timeframe and if whatever licensing basis they had before is modified going forward, you're not going to try to update any of the flooding guidance, seismic guidance, the requirements to use updated weather studies or anything like that? Is that correct?

MS. PELTON: That's correct.

VICE CHAIR HALNON: Why not? I mean, certainly, if a new plant came in with the applicant, application, and I realize that it could be very expensive in some respects, but we were all required to do it as an industry after Fukushima to show that we were okay.

Some licensing bases changed. Some didn't. But why would you not at least look

individually at things like post Fukushima's staff and say, okay, you have to bring this up to current standards?

MS. PELTON: I think we are at least looking from a post-Fukushima perspective of what open commitments were there to ensure that those are addressed prior to early -- the plan is in place prior to the authorization of restart.

We did have a lot of philosophical conversations of what would be required of a new plant.

In my background, I came from construction, and we had comparisons to Watts-Bar and Vogtle but where we kept coming back to is this is more akin to a plant that has been through an extended shutdown versus a plant that they hold a license, where we're not doing a new license review.

So that was the mindset that we brought into this.

VICE CHAIR HALNON: Okay. I'm not saying there was anything wrong with it, I'm just trying to find the rationale of delivery through that.

MR. MCKENNA: And I think the extended license or the systemic shutdown is the review point that --

VICE CHAIR HALNON: I'm pretty sure the 0350 factor had value in that.

MR. MCKENNA: Yes, I'll talk to that next slide.

VICE CHAIR HALNON: Thanks.

MR. MCKENNA: Next slide, please. So early on in the process, we knew we needed the inspection manual chapter to govern the process since we didn't have one in place.

We brought out the 0350 inspection manual chapter 0375. The 0350 is for a plant that's into shutdown due to performance problems. 0375 is the manual chapter that's used for when a plant is in an extended shutdown for other reasons.

So we looked at both those manual chapters and selected the best guidance out of this to build a new manual chapter 2562.

We wrote this manual chapter not specifically for Palisades but for any plant that would consider doing the same process that Holtec is doing and bringing back the plant from a decommissioning status to an operational status.

So the manual chapter lays out the establishing the restart panel, discusses the

inspection plan, and at the end of the manual chapter, it talks about the final decision on transitioning back to the ROP and how that can be done.

I'll pause and answer any questions. Otherwise, I'm going to turn it over to Jason.

MR. KOZAL: Okay, next slide, please. So for the inspection plan, so the Region III obviously consulted with the panel. We developed a publicly available, high level inspection plan. It was gamed from quite a few insights.

One was public meetings with the licensee to understand the scope of the work and what was intended there. Another was Region III has a ton of organizational history with Palisades and challenges they've had in the past.

So we leveraged our staff. We had a few meetings with them as well. And then we put together a team to basically run the project.

April, who is the lead, who is actually a former senior resident at Palisades prior to decommissioning, and so we've had a lot of different inputs to kind of inform what that plan would look like.

Additionally, one of the concerns, considerations that I think we had was we had two

parallel inspection plans.

We had decommissioning inspections going on at the same time as we were starting up restart inspections, which are typically connected to ROP type activities.

So one of the considerations we had was making sure that we leveraged each other so we didn't quote unquote double dip, right?

So there's a lot of, specifically on radiation protection and waste management. There's a lot of activity in the decommissioning side that we've integrated into our plant. So we're leveraging resources. Appropriately and not looking at the same thing too many times.

So beyond that eye level plan, we've created, and April continues to work on, developing a more granular inspection guidance.

We're using a very risk informed approach, looking at the systems that are highest risk and developing what our leveled effort should be in those types of activities.

We talked a little bit about this already, so we've got them in a few different bins.

One of the bins is what we call a baseline

related type of inspection. This is related to, like there were system restoration activities, the skillset we're looking at is generally resident inspectors, engineering inspectors, to kind of do those types of -- those types of inspections.

Additionally, we have a pretty broad suite of team inspections that will be accomplished to ensure that activities, that they're meeting their FSAR in regulation prior to going back to the ROP and restart.

Cyber and physical security, fire protection, specifically after post-mod and NFPA 805, and PRA is going to be an inspection activity, especially during that NFPA 805.

Aging management, license renewal, they are in a period of license renewal as well, up until '31.

Those aging management license renewal kind of overlap. And then a big focus on towards the end, when I say end, prior to saying, yes, they're going to get to start, problem identification resolution inspection.

Pretty broad scope, and that would include our look at safety culture. And that would be a formal look at safety culture.

The team, and we've had these discussions, one of our focus areas, and we've had this discussion with Palisades, is safety culture with who we brought up earlier.

This team that worked for us there has gone from 200 to over 1,000 right now, and so that's a pretty big uptick.

So ensuring that they have the right level of standards and nuclear professionals and safety cultures at the forefront is a big focus of our team.

Additionally, we are re-establishing the resident inspector's office in December.

We've selected the senior resident and resident, and so they will be fully functional. In hindsight, day-to-day, starting early December.

And I don't have to tell you how important they are to our oversight mission. So any questions before I turn it over to April for a longer conversation?

Okay, April.

MS. NGUYEN: All right, so just really quickly, again, my name is April Nguyen. My background, as Jason briefly touched on, I was the resident and senior resident inspector at Palisades

from 2011 until 2018. So I was actually there the last time this committee was there.

And I don't say that to brag about myself, but to prove that operating history that is essential I think to understanding the challenges of Palisades in particular with its unique design, some of the aging related questions that you all have brought up already, and then being able to integrate that into our overall inspection plan.

That's a large piece of how our plan is structured, is using that historic operating experience, that knowledge of where are the equipment issues located, what items have been problems in the past?

Understanding industry operating experience and integrating that into the plant as well as taking all that information and making sure that a plant is up to what we would expect from a normal operating unit.

And we've established in Region III as well a team of subject matter experts. So, for example, individuals in our in-service inspection branch who have done previous inspections of the facility.

They know about the issues with the reactor

vessel, the steam generator, the head, so they know where to go look for these things.

And we thought that was really important when creating our team and establishing our plan to have that expertise available to hit the ground running and be able to jump in full force with these activities.

As Jason also mentioned, too, we are running in parallel with the decommissioning activities that are still going on, so we do have our group in the region that are completing the inspection program related to the decommissioning that is a requirement that they still have to fulfill.

But we're taking advantage of that opportunity. The individual we're using has a lot of expertise in both, again, the decommissioning and operating plant world so we can understand the nuances and the differences of programmatic implementation and the requirements involved in those conditions, and also looking to the future to see how a plant would normally implement those items in an operating state.

We are creating some new inspection procedures as we identify that they are needed. So we are working with Phil's group to find those items, whether it be to modify some existing inspection

procedures or guidance or to create completely new ones or to use them as they are already created.

The intent is to use them as guidance to focus in on the particular subject areas that we are think are important for restart.

So we might not complete an inspection procedure in whole, but we might utilize the proper pieces from that procedure to look at key aspects we think the licensee needs to meet to move forward.

And then we are going to be documenting all of the inspection activities that we are doing.

So currently, we are documenting them on a quarterly basis, but really, as Holtec mentioned, they're just getting started with a lot of these activities.

So many more of these activities will be coming into the schedule. We'll have many more inspections going on in parallel moving forward, and we'll relook at how often we put out that information.

But the intent, as Jamie mentioned, is to make it publicly available so that we're being transparent and clear with everyone as to what we're doing, why we're doing it, and what the outcome is.

And then all of this information will feed

into the panel's review of Holtec certification, that they're ready to restart, and then also the inspection activities to make sure that they're ready to move into that operator reactor status.

Go ahead and move to the next slide, please. So, to focus our sample selection, obviously, it's a large number of activities that are going on.

Think refueling outage and then multiply that by about tenfold, as far as the number of activities that are going on.

So, as Jason mentioned, we are using a risk informed approach. We have talked to our SRAs in the region already to review the PRA that was in effect that the time the plant shut down.

We are also looking at, and those individuals have started having conversations of what updates they're making, what changes are going to be occurring, so that we understand those deltas, and then letting that feed into the inspection process.

So, we're also taking a look at things as the group has talked about, too, where are your event initiators? Making sure that your mandating systems will operate appropriately under all design conditions.

Looking at the barriers, right, especially the reactor vessel and the primary coolant side, make sure that those are properly intact and that they have the right structural integrity to move forward for an extended period of time.

We are also looking at the system modifications. A lot of the ones that Holtec mentioned are on our list of items to consider, as well as others, again, where we know that there's been some operating history with issues.

For Palisades, specifically, it is an older plant, and Holtec mentioned the obsolescence issue.

There were a lot of identified items prior to shutdown of systems that needed to be upgraded, components that needed to be upgraded, that were either delayed or deferred because of the potential shutdown that we will retake a look at those items.

And then an important piece of all of this, too, with having the variety of inspectors onsite, is we do want each group to also focus on the corrective action program and the safety culture.

As we talked about, this is a key component to ensuring that the plant can operate safely in an

operating status.

So all these individuals will be feeding into a regional basically review of the corrective action program and a safety culture.

We're going to have a team go out, like mentioned at the end of the restart period to do an inspection, but really a lot of this information will feed into that to determine what areas do you need to focus on, what kind of in-depth safety culture type analysis would we want to look at, and any additional activities that we may want to integrate from other parts of the inspection program that we might not normally do for an operating reactor.

So using all that information, we kind of created a baseline I'll call it budget of hours that we think we're going to be using to do inspection related activities.

Those baseline inspections plus those team inspections, and we've estimated about 6,000-7,000 hours right now of inspection related activities that will be completing.

We started doing some of that, and then projecting out through the end of the calendar year of 2025.

MEMBER MARTIN: Bob Martin, I am more curious than anything. When you shut something down, it was a lot of things that are probably kind of obvious as far as changes.

You can look at it. You can see it. Things move left. Things move right. One thing I think is a little bit harder to kind of visually appreciate, the effective change and transition to shutdown, would be like I&C equipment.

In particular, do you -- this is first of kind for you all to review and inspect everything that you've kind of talked about, do you see something unique here with the I&C that requires new tests, additional tests, something more to kind of get you beyond?

Most of these things should be pretty straightforward, and there's going to be an element of uncertainty I think with performance of that equipment in particular, because it is whether it's computers or just like I said, monitoring equipment, there's something different here you'd have to do that you wouldn't do for any other plant.

MS. NGUYEN: And that's a good question. So I think we're still in discovery phase on that one a little bit.

As the licensee starts going through the efforts to test things like RPS, for example, right, relays, contactors, logic there, that's a good opportunity for us to take a targeted look at that type of equipment, right?

What was the state it was in? Was it used during shutdown? What does it look like now? Taking some samples then to inform us, maybe we need to do a deeper dive into those types of activities.

Maybe it comes out that they work perfectly fine, and we might not need to spend the resources in that particular area.

But the plan is to use some of our regional expertise as well, some of our electrical engineers and folks that have experience in I&C and use them as the boots on the ground to actually be in the field of serving those activities.

So we have the right expertise to understand is this doing what it's supposed to do and is there some other mechanism here that we're not aware of yet that we need to become aware of?

VICE CHAIR HALNON: So those integrated tests are very important, especially like the loss of power test where you exercise your ECCS and ESFAS or

emergency feedwater test, you're definitely going to have people on top of those, I guess.

MS. NGUYEN: Absolutely.

MEMBER PETTI: I just want to take Bob's question a little bit further. It's a little bit more abstract. So it's not necessarily directed at you.

What I'm struggling with is completeness. How do you know that what you've done and what your plan is, is going to cover all the bases?

It sounds really good. We're going to run it in reverse. We'll run our usual processes. That's what we heard.

And it sounds reasonable. And a team approach certainly is going to help minimize the potential for missing something.

And using a risk informed approach and hitting the high stuff. But is there any plan to have some independent folks at the agency do like a rev team above you guys, to say now we -- because this is unique.

This is first of a kind. Oh, yes, or below. An independent group that we've kept in a closet somewhere that doesn't know so that you -- someone with new, fresh eyes, because this is so out of what you do every day.

MR. KOZAL: I think that's a really good question, and actually, we had a panel meeting yesterday and this came up.

Because we're really going to first look at the restoration plans now, right. It's starting to be implemented. We're starting to see what it's like.

So one of the things we discussed and are considering is exactly what you're doing. We've got a couple of very high risk assessments, probably one active system, one passive system, bring folks that have not been involved in the project in to kind of do a, not a vertical slice, a large scale scrub to ensure that we have confidence in the restoration process that Holtec is using, identify the potential if there's any weak areas or areas of rest, try to address those, and then be able to move forward with more confidence if we decide it's okay.

If we know that this is how it's being implemented and we're comfortable with that, we can go towards more of a sampling, a vertical slice approach like we normally do in inspection, going forward.

So I think it's a really great question. It's really relevant. And it's something that's on our mind. And we appreciate that.

MR. MCKENNA: Jason, if I could just supplement. So you're looking at the red team right here.

So normally, there's not a restart panel for oversight. So that's why in this process, we have the director and the two deputy directors as the oversight in this process, not in place for the operational reactors.

MR. BALLINGER: This is Ron Ballinger. I think I'm wondering if maybe Dave is, I'll put words in his mouth, is not thinking along those lines.

He's thinking, I would be thinking along, can we have some folks come in who are from outside to break it?

VICE CHAIR HALNON: Like Region Two folks.

MR. KOZAL: This is exactly what we talked about yesterday, and it was region two that we thought about.

And if Mark Franke is on the line, I'll give you a call. So you all are thinking just like we were. So I appreciate that.

CHAIR KIRCHNER: The other thing that comes to mind, to follow on to Dave's questioning, line of questioning is then it's a fairly extensive list of

upgrades, modifications, repairs and such, and that's all commendable.

Will that consume all of your inspection time? And then I'll just throw out a rhetorical question. What about the main coolant pump sitting there for two and a half, three years, et cetera, et cetera?

And, I mean, can you spin those up when you got that reactor vessel head off? I don't think so.

So are you going to look at the overall plant? It's good that you bring April into this with her extensive period there at the plant, but things like that.

It's along the lines that Dave is thinking. Are there gaps, are there -- and is that enough hours? That's like four years, right?

MR. KOZAL: So, one of our main focuses, and it is for any operating plant, is assessment. Right?

So my division is there to do an assessment of safety, for any operating plant. This is no different than that.

So, one of the pieces that we have to consider as we plan, and again, April's here but there

is a larger team and we integrate with a lot of folks inside and outside of the region on this, is to ensure that we're talking about those things and making sure we're not missing anything.

That being said, it's a large complex system, right? So that risk informed approach is real important for us to be able to manage that.

So if we look at a system and it's very high risk, AFW for example, DC power, we're going to dedicate more resources to doing that type of analysis and oversight than we would, again, I'm not a CE expert yet, so a much lower risk system or something on the secondary side.

Are we going to ignore anything? Probably not, but we are -- we do have to be reasonable with our approach.

Remember, again back to what Phil talked about, this is a long -- we look at this as a long-term shutdown versus an ITAAC related new construction type of activity.

So we have to be balanced and risk informed really to do this and so we don't end up with having to take 25,000 hours to do this.

Now, that being said, the 6,000-7,000

hours is an estimate based on what we thought and the projection.

One of the things that the panel is doing is we're tracking our hours pretty closely so we can have, at the end of the day, a good understanding for potential subsequent projects of what it's going to take for the NRC to do their oversight.

So, I think that the big piece for us is having those assessment conversations. We've done it already with the internal -- you saw the presentation on the vessel internal inspections and the issues around steam generators.

You've set up a multi-functional team between the region and the NRR to deal with that, do those assessments, make sure that you're in agreement with the path being taken and those type of things.

VICE CHAIR HALNON: Okay, two notes. One is that's pretty comparable to the number of hours you would spend to continue to keep it up.

Second is, you've got five minutes to finish your slides.

MS. NGUYEN: All right, moving along. So again, just continuing the conversation on how we're planning out our inspections.

I won't go into lengthy detail on a lot of these because we hit this high level, but in using that risk informed approach, those PRA numbers, that historical knowledge to target at least what our initial set of samples are going to be and then use that to inform if we need to take deeper dives into different areas, programmatic elements, systems, components, those types of things.

Excuse me. One I'll just highlight on here that wasn't already addressed was related to the control rod drive mechanisms.

So we understand from the operating history of the plant that the seals have been a design issue in the past, causing early shutdowns.

We've been in discussions with the licensee already about what type of activities they are doing to enhance or improve the performance of those seals, what maintenance activities they are doing related to the system.

That's one we'll take a close look at to make sure that from that initiating events threshold, right, we don't get to a point where that risk is something that would be inappropriate moving forward. Next slide, please.

Another pretty short here, but looking again at risk to help us inform where we're going.

So this is a little bit more looking at systems and components that could impact overall plant operation.

So things like the component cooling water system, that's a large contributor to risk. Looking at the service water system.

So this is a good one to touch on multiple programs and aspects of operation. Holtec is going to work through a plan to inspect the piping, especially the buried piping related to the system, right?

That will lead to a period of discovery where then there might need to be repair replacement options, but also from an overall impact, looking at how the system was put into a standby condition in some cases, depending on where you are in the parts of the different aspects of the system, and then ensuring that it's appropriately clean, that it will still meet all of its capacity requirements, and that overall system testing is going to be important for something like this moving forward.

Next slide, please.

MEMBER MARTIN: Just a quick question on

risk informing. So you're working with Holtec with their PRA models, correct?

Now, there's got to be a lot of activity. Of course, those models are supposed to reflect the plant in its current state.

I assume that was carried through the decommissioning, so now it's a lot of going back.

Do you have a schedule for like auditing, you know, changes, just again, kind of the more independence. It's a tool that you're using for decision-making, but I feel like the changes will be coming so rapidly that you would need this concept three months or maybe something, some kind of objective view. Is that incorporated into this, in the maintenance inspection program and all that?

MS. NGUYEN: Yes, so our regional senior reactor analyst, I got the title correct, he's already been in communications with their PRA expert, so the individuals that they talk to about that they have a contract who are doing all of the updates.

So he has what the latest version was. We've been talking about what those changes are going to.

And then he and I are talking in real time

about that information as well. I am feeding to him information on system modifications and other changes we're aware of so he can ask those questions and understand from the model side what the impacts would be.

But it's very much like a hand in hand approach that we have where he's basically another member of our team that's working through the process in real time as they go through.

MEMBER MARTIN: Thank you.

MS. NGUYEN: So this slide just highlights some of the inspection topics of interest. Many of them have already been mentioned.

So the concept here is we're aware of these items. We've already started doing inspections on a number of these.

So for example, we had individuals onsite for the reactor vessel inspections. We had individuals onsite for the steam generator inspections.

We're going to have folks out there for Alloy 600 when that occurs later on this year. We have a team established already from a fire protection standpoint to look at the NFPA-805 completion of

modifications and that transition.

That team is already in communication with Holtec to understand what their plans are, looking at timelines, stepping through when they want to be onsite into their activities.

And then finally, as NRR folks mentioned, we're part of the conversations to understand what the closure of some of these larger ticket items are, like GSI-191 and the open phase issue so that we can send our inspectors out at the appropriate time to look at the completion of any in-plant activities that are going on to support the calculational bases and other evaluations that will be presented to the NRC as part of the closure of those items.

And we have our PRA experts looking at the seismic hazards for analysis, as well.

And then finally, for the steam generators, again, a lot of this was already mentioned.

The highlight here is we are aware, we were there, we did release a preliminary notification to talk about those preliminary results.

And our experts along with experts in NRR are following very closely the data analysis and the progression of that activity to understand what the

corrective actions are going to be like.

Next slide. I'm going to turn it back over to Jason really quickly for our last slide.

MR. KOZAL: Yes, this is our last slide. So Palisades has a long history of internal stakeholder interest.

So the panel very early determined we needed to be committed to outreach and communications and transparency in the process here.

And so we've done outreach for state, local, and tribal governments, non-governmental organizations, and members of Congress so far.

The interest in the plant is of wide range. Quite a few folks that are interested in historical issues there with equipment, safety culture, age of facility, environmental impact, decommissioning activities, funding around that.

So one of the big decisions we made was to do quarterly in person public meetings. So we've had two of those quarterly public meetings so far, the first one outlining where we had about 350 attendees, the second one was closer to about 125.

We're doing another one next month in November. And the topics of those officially were

basically overarching what the function of the panel was and the activities.

The second meeting was a working meeting with Holtec on stage. Kind of going over a higher level version of what we talked about today.

And then insuring that we took significant time to answer -- take comments and answer questions.

The last meeting, I think we did that for about two and a half hours. So it was a pretty significant amount of engagement.

We've had a -- there is a significant national/international press from a media standpoint on this.

Each one of the members of the panel has done a significant amount of media engagement.

We've done press conferences as part of each one of the public meetings that we've had.

And answered hundreds of questions from both the public and the media. Additionally, because I think Jamie mentioned it a little bit earlier, is we've created -- there's a QR code, but the next slide -- we created in the public website, every plant has its own page.

We have modified that page to basically be

a one stop shop for everything Palisades.

So individuals can go look at every licensing action that was submitted with potential due dates for hearings, for when we think a completion is going to happen, all the inspection reports, all the environmental reports, previous environmental reports, pretty much anything you want.

Additionally, we created a Palisades restart panel specific email for the public and the media to use to reach out to the plant or to the team here.

This is my view. It's been a lot of work but I think it's been very valuable. There's been a lot of information in and out of the panel, in the majority, Palisades, and it's been a very helpful opportunity for us to provide whatever point of view we need to for both the public and other interested parties.

And that is the end of our slides.

VICE CHAIR HALNON: Okay, thank you very much for your presentation. I'm going to look to the members to see if there are any comments or questions before we move on.

Dennis, or Steve, or Vesna, you have any

questions or comments?

Okay.

MEMBER DIMITRIJEVIC: I'm good.

VICE CHAIR HALNON: Thanks, Vesna. Okay, so now we're going to go into the public comment area. Anyone online desires to make a public comment, please raise your hand in MS Teams. Or press star-5 if you're on the phone. And we will take your comments sequentially as you get online.

Because there may be many comments, we ask that you keep your comments brief and not to exceed five minutes.

Please do keep in mind that this meeting of the ACRS is different than the other public meetings that you have attended on this topic, and the purpose of this meeting is for the committee to be educated and informed on this topic and to hear the public comments.

If the commenter has a question, we will consider the question as part of the official record.

However, we will not necessarily respond to or answer the question in this forum today.

You're also welcome to submit any written comments to the designated federal officer, which was mentioned earlier, kent.howard@nrc.gov or

Lawrence.burkhart@nrc.gov.

We will consider all comments, verbal and written, in our deliberations. We also want to make sure that you know we have a hard stop at 12:45 so that any members of the public who have not yet been able to make a comment will have to submit them in writing to be included in the record.

At this time, I'm going to hand the microphone over to Mr. Burkhart to proceed with identifying commenters and move through the process.

If your comments go off topic, you may be muted and we will proceed with the next comment, so simply stay on topic, professional, and relevant.

Again, please take into account other stakeholders who want to speak, and keep your comments succinct and brief. Larry?

MR. BURKHART: Thank you, Vice Chair Halnon. At this time I would like to ask if there are any members of the public in the room who would like to make comments?

Okay, I see that there are no members of the public who desire to make a comment. And now, I do not see any hands raised for the virtual attendees,

but if anyone is interested in -- a member of the public is interested in making any public comment that they would like on the record, please raise your hand on the MS Teams.

If you are on the phone, you may raise your hand by hitting star-5. So I have seen that Mr. Edwin Lyman has raised his hand. So Mr. Lyman, give me one second to allow your mic. Your mic is allowed, and please make your public comment.

DR. LYMAN: Yes, this is Edwin Lyman from the Union of Concerned Scientists. I would just like to make a general remark about the schedule that has been laid out by the licensee.

We have concerns that this is an arbitrary timeline, that there are consecutive role, institutional, political, and economic pressures to do this quickly.

Yet the program of work that has been laid out, it's truly formidable. And I'd just like to express our skepticism that the suite of repairs, replacements, and all the other adjustments that are going to have to be made can be effectively carried out under appropriate NRC oversight with the attendant quality assurance as well as all the very important

administrative paperwork that's been discussed, and all to do that by the restart date that they have targeted.

So I'd just like to raise our concern that this process should not be driven by these licensee projected timelines, but the NRC needs to have the time and space, the resources and the personnel, and the inspection hours to actually carry out this very ambitious program of work.

And so that's my comment. Thank you.

MR. BURKHART: Thank you, Mr. Lyman. That will be on the record. Are there any other members of the public who would like to have their comments on the public record?

Okay, I see no hands raised. Is there anybody else in the room who would like to make a comment on the record?

No, so I will hand it back to you, Vice Chair Hanlon.

VICE CHAIR HALNON: Okay, thank you, Larry, and thank you for your presentations and dialogue, with the staff and other individuals who -- did you have a comment, Will?

Okay, as we continue to be interested in

the upcoming effort, at this time, I would like to ask the Committee members that were kind of in our deliberation timeframe, we can have a conversation amongst ourselves.

If there's a clarifying question or something that's an error, I would ask that the NRC staff or Holtec get my attention and let's correct it.

But any members or consults, Steve and Dennis, especially interested in your thought process about major challenges, decisive action that we can take going forward, those types of questions. Anyone have any discussion? I'll call you out individually, if I have to.

DR. BLEY: Hey, this --

VICE CHAIR HALNON: Go ahead, Dennis.

DR. BLEY: Well, Ed Lyman said something that has been sitting in my mind as I watched all this. This is really an impressive schedule and a tremendous amount of work.

I don't have to be skeptical about it getting done, but it would be truly remarkable if they could finish all this at the scheduled time.

And I'm not sure how much ACRS is going to be involved in the process. Is that addressed? Did

it just slip by me?

VICE CHAIR HALNON: It has not. I was going to talk about it during this session. Do you have an opinion if we should be involved in a different way or in the future?

DR. BLEY: Well, I don't know what a different way would be, but I would think some regular updates, almost quarterly would be very useful, to make sure some of the key things are progressing well and no troubles and issues that were risen.

VICE CHAIR HALNON: Since you've been listening, what do you think the major challenge is from a technical perspective?

DR. BLEY: It's a whole lot of work. The steam generators bothered me from the start, because I was thinking about nukes found after you've been in a layup condition and they have a lot.

And getting through that successfully means getting started successfully. There's going to be a lot of training involved at the site.

I'm not sure, I really don't know NRC's status on things like sleeving. Because I think there are key issues that have to be resolved and if they have to go back to unplugging previously plugged tubes and

sleeving them, that could start extending things quite a bit.

VICE CHAIR HALNON: Anyone else in the room, what do you think the major challenges are that we need to be focused on?

MEMBER MARTIN: You mentioned electrical systems and I&C. If you're energizing systems like that, who knows what's going to happen?

VICE CHAIR HALNON: I mean, maybe you'll get hit by lightning. Inside joke. Inside experience.

MEMBER PALMTAG: Something just kind of popped up, but one of my concerns, or one of the things I noticed was that they are only decommissioned for one year.

I suspect they kind of knew what they were going to do before they went into decommissioning.

Because they didn't do a lot of decommissioning activities. But what I'm worried about is these future plans, like TMI and plants that really did go deep into decommissioning. How are we going to deal with that? How is the NRC going to deal with that?

So I'm kind of worried. I have concerns

about this process but I also have concerns about other reactors to think of in this process in the future that have longer decommission findings.

VICE CHAIR HALNON: Dennis?

DR. BLEY: Yes, one thing I was a little curious about, and this isn't -- and this is Committee time now, but we followed the open phase work quite a bit.

It sounds like that might not be accomplished in time. I'm thinking from a positive side, their reworking of selective tripping of the breakers could make the open phase problems less severe than it's been at licensees that have served it in the past.

Something I'd want to follow as we go along.

VICE CHAIR HALNON: Anyone else in the room or online?

MEMBER DIMITRIJEVIC: Well, you know from the risk perspective, I mean, I don't see any really major challenges connected to the PRA.

They have two issues going on, which are in general challenging issues, like GSI 191 and the NFPA 805 and I don't really know for the moment, I was just

thinking, should we get involved in this GSI 191 which will be towards the end of the year, but I don't really see that that should present a definite time to follow what happens in the industry.

So, I am sort of -- I don't really have a strong opinion, so should we get involved or not.

VICE CHAIR HALNON: Yes, my understanding is that this 191 risk informed process, risk informed approach, has been pretty well established and some handful of plants have gone to it to resolve their GSI 191s.

So it shouldn't be new to get it through the staff.

MEMBER DIMITRIJEVIC: Right.

CHAIR KIRCHNER: Likewise, we've seen others like the main steam line break analyses. And it's new. We've been substituting the CHF correlation, which should go straightforward.

VICE CHAIR HALNON: And I heard Dr. Lyman talking about the timeline, knowing that there's quite a bit of work to do and some discovery still left and process, I mean, you can staff up to a certain extent to meet that timeline, but there's also going to be a limitation to work.

You may have to reassess the timeline as well. There's always receiving from extending feeling, there's always a pressure to get back online for revenue.

But the safety culture and focusing on safety first is one of the key things, and we interrogated that today and I think we'll interrogate that in the future as well, make sure that is sustained.

Steve, you had your hand up.

DR. SCHULTZ: Yes, just a couple comments associated with the NRC's activities. I'm very impressed with the public outreach and public meeting programs that have been already established and moving forward.

I look forward to hearing the meeting in November and expect that's going to continue on a similar schedule next year.

With regard to the inspection activities, what I sense is that with the very aggressive schedule that set out on all of the activities moving forward, the coordination of the schedule of the inspections and the reporting from the inspections and the interaction with the applicant is going to be really important in order to maintain the overall schedule.

MEMBER PETTI: Yes, Steve, I agree with you. I had the same thought.

VICE CHAIR HALNON: Dennis, you had your hand up. Did you want to make another comment?

DR. BLEY: Well, it was a leftover hand up, but yes, I did have a comment. I got to spend a few minutes here and looking at the NRC's public website and the section on Palisades, and it's really a big section with lots and lots of information.

There's some raised in meetings, but they primarily just said who was there. I didn't see any summaries of comments from those public meetings, and we didn't get a sense of what the feedback has been from them, so I think that's something we'd want to look at in the future.

DR. SCHULTZ: This is Steve again. That's why I thought it would be interesting to participate as a listener for the next public meeting coming up.

I would comment that the steam generator inspection report or communications between the applicant and the NRC was very well documented and very informative.

And so, that report was encouraging and I

expect the reports coming up from the other major activities associated with both the inspections and the activities with regard to the modifications, if that level of activity by the staff is continued to move forward, that will be very helpful.

VICE CHAIR HALNON: Anyone else?

MR. BALLINGER: Yes, I could chime in a little bit on the -- I think the discussion that we've had, a lot of people have said the schedule was tight.

On the materials side, they have to deal with all of the materials issues that historically in our industry have happened more or less in series, and they got them all at once to deal with.

The steam generator, the mitigation, the head, all of that stuff, all at once. And that is a heck of a challenge. That is a -- that is a heck of a challenge.

And that's going to take some determination. Boy, oh, boy.

VICE CHAIR HALNON: Okay, I appreciate the members and consultants highlighting the areas at the top of their mind, and I think some part of this can give oversight on all that, make sure that it's validated and verified that it's all done right.

I think that I heard sort of a consensus that we want regular or periodic updates and we can work on it. Let's leave it at that for now, but we can work, whether it's after each inspection report has been issued or if it's after a public meeting, whatever the case may be.

We'll figure some trigger to schedule a time. It can be a shortened time. It doesn't have to be -- you've been educated quite a bit today what this process looks like, and you can look at the process stuff again.

And now we're going to be looking for updates on the inspection process, is there progress being made on improvements, mitigations, stuff, things.

So we'll work with the rest of our staff and with the panel and the other folks on the staff to set up some schedule down the road. We look about six months in advance. We can pigeonhole a couple hours in a full Committee meeting between now and then to do that again, get the up to date status.

I'm going to provide one more opportunity for any closing remarks from members or consultants, and then I'll turn it back over to Chair Kirchner.

MEMBER PALMTAG: I just had one more, this is Scott. I just had one more quick observation to say. It seemed like the amount of inspections didn't correspond to the amount of work that was going on.

Someone brought up that the inspections were three, three and a half hours, but you mentioned that the amount of work was 10 times the knowledge work.

And that just seems like quite a line up. It seems like there are maybe more inspections needed or more inspectors on site needed.

VICE CHAIR HALNON: Make that a topic.

CHAIR KIRCHNER: If I could join in on that, one of the things we would look for, I'm looking at April, is, and we do this when we have LR, SLR come in front of the committees, we really rely heavily on interrogating inspection team, about their assessment of the condition of the plant.

In this case, it would be maybe more what's the progress and the results from inspections, the progress making the modifications, and your overall assessment.

That weighs heavily in our deliberations in license renewal, SLR space.

VICE CHAIR HALNON: Okay, with that, we're going to go ahead and close out this session and hand the meeting back to Chair Kirchner.

CHAIR KIRCHNER: Okay. Thank you. This completes our scheduled agenda for the 719th ACRS Meeting, so I will turn to my colleagues and ask for any business, old or new business?

Scott Moore, Executive Director, are there any open items at this point?

MR. MOORE: No, Chair Kirchner, no. One thing I would like to add is I'd like to thank Holtec and especially the Region III staff for physically coming to the meeting.

And we will get back to you about when the Committee would like to be briefed again. We'll also let you know if the Committee wants you to physically come in. But thank you very much.

CHAIR KIRCHNER: Others? And once again, thank you, and to both the applicant, Holtec, and the staff, and with that, we are adjourned.

(Whereupon, the meeting in the above-entitled matter was concluded at 12:10 p.m.)

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: ACRS Meeting

Before: NRC

Date: 10-03-24

Place: teleconference

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate complete record of the proceedings.

Neal R Gross

Court Reporter

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HOLTEC INTERNATIONAL

ACRS Presentation

Palisades Nuclear Plant
Reauthorization of Power Operations

October 3, 2024

Presentation Agenda

- Introductions
- Purpose & Outcome
- Regulatory Path
- Project Milestones
- Project Overview
- SSC Readiness
- SSC Inspection and Testing
- SSC Reliability Improvement Modifications
- Questions

Introductions

- Holtec Decommissioning International, LLC (HDI)
  - Jean Fleming – Holtec International, Vice President of Licensing and Regulatory Affairs
  - Joseph Jerz – HDI, Palisades Engineering Director
  - Michael Schultheis – HDI, Palisades Director of Regulatory Strategy and Performance Improvement
  - James (Jim) Miksa – HDI, Palisades Manager of Regulatory Assurance

- Additional subject matter experts participating remotely

Purpose & Outcome

- Purpose:
  - Provide a summary of major activities that support the reauthorization of power operations at Palisades Nuclear Plant (PNP)

- Outcome:
  - Inform the Advisory Committee on Reactor Safeguards (ACRS) of HDI actions to address the important aspects of the reauthorization of power operations at PNP

Regulatory Path

- On June 28, 2022, PNP ownership and license transferred from Entergy Nuclear Operations, Inc. (Entergy) to Holtec Decommissioning International, LLC. (HDI) for the purpose of decommissioning
  - PNP transitioned to a decommissioning licensing basis prior to the transfer of ownership from Energy to HDI
  - At license transfer, Holtec Palisades became the licensed owner and, for decommissioning purposes, HDI became the licensed operator
  - The current PNP Renewed Facility Operating License (DPR-20) does not authorize HDI to receive new fuel or place fuel in the reactor

Regulatory Path

- On March 20, 2023, and May 24, 2023, the NRC held public meetings for Holtec to present a proposed regulatory path and framework for return of PNP to power operations
  - HDI presented a regulatory path through an exemption request to 10 CFR 50.82 to allow recission of certification of permanent cessation of power operations and permanent removal of fuel from the reactor vessel
  - HDI Regulatory path based partly on a previous denial of rule making and the existing regulatory framework of license amendments and exemption requests
  - Regulatory framework relies on reversing the actions taken to transition the power operations licensing basis to a decommissioning licensing basis
  - Allows for a continuum of PNP Licensing basis from power operations, into decommissioning, and back to power operations.

Regulatory Path

- September 28, 2023, HDI submitted a Request for Exemption from Certain Termination of License Requirements of 10 CFR 50.82 on (ADAMS Accession No. ML23271A140)
  - 10 CFR 50.82 has no allowance to rescind the docketed certifications of permanent cessation of power operations and permanent removal of fuel from the reactor
  - Once 10 CFR 50.82 certifications are rescinded PNP will transition back to a power operations licensing basis
  - Permits PNP to re-enter decommissioning after the second period of power operation

Regulatory Path

- December 6, 2023, HDI submitted a License Transfer Application for PNP Operational Authority (ADAMS Accession No. ML23340A161)
  - Authorizes Palisades Energy, LLC, (Palisades Energy) to receive fuel and operate the PNP reactor
  - Provides the Palisades Energy operating organization
  - Establishes financial assurance for new operating entity
  - Provides the Palisades Energy operating quality assurance program

Regulatory Path

- December 14, 2023, HDI submitted a License Amendment Request for Power Operations Technical Specifications (ADAMS Accession No. ML23348A148)
  - Reinstates previous Power Operations Technical Specifications
  - Based on the last docketed power operations Updated Final Safety Analysis Report
- February 9, 2024 , HDI submitted a License Amendment Request to Revise Selected Permanently Defueled Technical Specifications Administrative Controls to Support Resumption of Power Operations (ADAMS Accession No. ML24040A089)
  - Separate submittal to parallel decommissioning submittals for PNP licensing bases continuum
  - Restores requirements for licensed operators

Regulatory Path

- May 1, 2024, HDI submitted a License Amendment Request to Revise the PNP Site Emergency Plan to Support Resumption of Power Operations (ADAMS Accession No. ML24122C666)
    - Replaces the decommissioning permanently defueled emergency plan with a power operations emergency plan.
    - Updated to currently approved NUREGs

Regulatory Path

- PNP Renewed Facility Operating License (RFOL) remains active
  - License termination planning and activities not pursued during PNP period of decommissioning
  - No major decommissioning activities were undertaken
  - Licensing actions taken after 10 CFR 50.82 certifications were industry standard actions taken to facilitate decommissioning activities
    - Permanently Shutdown Emergency Plan and Tech Spec Exemptions and LARs submitted prior to license transfer
    - Permanently Defueled Emergency Plan and Tech Spec Exemptions and LARs submitted post-Zirconium Fire period
  - Reversal of the decommissioning licensing actions supports recission of the 10 CFR 50.82 certifications by restoring the power operations licensing basis

Regulatory Path

- PNP License Renewal 20-year term ends on March 24, 2031
  - PNP will return to power operations within the first License Renewal term
  - April 18, 2024, HDI notified the NRC of intent to pursue subsequent license renewal (SLR), a second 20-year renewal term for Palisades (ADAMS Accession No. ML24109A162)
  - PNP SLR schedule supports submittal of application by the regulatory required date of five years prior to license expiration (March 24, 2026)

Regulatory Path

- Quality Assurance Plan Transition
  - Entergy Power Operations Quality Assurance Program Manual (QAPM) was in effect prior to permanent PNP Shutdown
  - Holtec Decommissioning International Decommissioning Quality Assurance Program (DQAP) in effect during initial decommissioning only period (Prior to restart project)
  - Palisades Site Specific Transition Quality Assurance Plan (TQAP) in effect as of August 2024 for remainder of PNP Restart period (Prior to transition to power operations license basis)
  - Upon restoration of POLB, Palisades Operating QA Plan will become effective

Major Project Milestones

- Sep 2023, 10 CFR 50.82 Exemption submitted to NRC for Review
- Oct 2023, Training Program Restoration Activities Commenced
- Jun 2024, Primary Coolant System Decontamination
- Jul 2024, Discovery SSC Inspection Activities Commenced
- Aug 2024, Reactor Vessel Internals Inspection Commenced
- Sep 2024, Steam Generator Inspection Commenced
- Jan 2025, Corrective, Preventive, and Modification Work Activities Commence
- Jun 2025, HDI verifies restart activities required to support transition to a power operations licensing basis are complete

Project Milestones

- Jul 2025, HDI notifies NRC of readiness to transition to a power operations licensing basis

- Aug 2025, Docket recission of 10 CFR 50.82 Certifications and Transition from decommissioning licensing bases to power operations licensing bases.

- Sep 2025, Receive new fuel and place fuel in PNP Reactor

- Oct 2025, Complete Operability and Functional testing

- Oct 2025, Commence Power Production an PNP

Project Overview

- Public Engagement
  - Strong broad-based support from federal, state, and local partners as well as within plant community
  - Restart Plan Outreach and Communications
    - Attend and participate in NRC public meetings
    - Local community engagement and outreach
  - Continuous utilization of engagement tools to inform stakeholders and the public
    - Open House Meetings to engage the public
    - Holtec Highlight restart project updates

Project Overview

- Plant Staffing
  - Current Palisades Employees: 496*
  - Current Badged Contractors: 626*
  - Approx. 600 full-time employees during regular operation with large union workforce (two bargaining units)
  - Additional 1,000+ specialty workers to Southwest Michigan for regularly scheduled refueling and maintenance outages every 18 months

*As of September 2024

Project Overview

- Operator Training
  - Operations Training Initial Accreditation, completed Dec 2023
  - 26 licenses issued by NRC in Aug 2024
    - 18 Senior Reactor Operators
    - 8 Reactor Operators
  - Operations Training Full Accreditation Board Mar 2025

- Maintenance & Technical Training
  - Maintenance & Technical Training Initial Accreditation, completed Aug 2024
  - Training currently in-progress
  - Maintenance & Technical Training Full Accreditation Board May 2025

Project Overview

NRC Orders or Industry Initiatives at Shutdown with Open Actions

- GL 2004-02, “Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors” (GSI-191)
  - Work Completed Prior to PNP Shutdown
    - Changed the sump buffering agent from Tri-Sodium Phosphate to Sodium Tetra-Borate
    - Replaced the high-pressure safety injection pump mechanical seals and cyclone separators
    - Installed passive debris screens on containment sump downcomers, containment floor drains, and containment sump vent lines
    - Installed passive sump strainer assemblies at Emergency Core Cooling System pump suction inlet to containment sump
    - Modified the containment sump vents to enhance sump performance

Project Overview

NRC Orders or Industry Initiatives at Shutdown with Open Actions

- GL 2004-02, “Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors” (GSI-191)
  - Work Remaining to close GSI-191
    - Select closure option based on PNP parameters and industry closure initiative
    - Use of risk informed approach using the Conditional failure probability (CFP) recommended by industry experts
    - Develop/update initial GSI-191 calculations (debris generation, transport, chemical effects)
    - Conduct strainer head loss testing
    - Determine if Alternate Break resolution is viable for PNP
    - Develop/update follow-on GSI-191 calculations (strainer structural qualification, in-vessel effects, PRA inputs, risk/uncertainty quantification)
    - Submit GL 2004-02 response
- Planned NRC Public Meeting 4Q 2024

Project Overview

NRC Orders or Industry Initiatives at Shutdown with Open Actions

- Industry Initiative on Open Phase Condition
  - Palisades Offsite Power Design
    - Primary supply Safeguards Transformer (SGT 1-1) via buried cable to Safety Buses
    - Secondary supply Start-Up Transformer (SUT 1-2) via Overhead Transmission Lines to Safety Buses
  - Work Completed Prior to PNP Shutdown
    - Initiated Compensatory Measures
    - Installed Open Phase Detection (OPD) on Stand-by SUT 1-2
    - Commenced Monitoring SUT 1-2 for Open Phase Condition
  - Work Remaining to Close OPC
    - Complete risk assessment per NEI 19-02, Guidance for Assessing Open Phase Condition Implementation Using Risk Insights
    - Submit OPC closure letter based on risk assessment results

Project Overview

NRC Orders or Industry Initiatives at Shutdown with Open Actions

- BIASI Critical Heat Flux (CHF) Correlation
  - Used in PNP Main Steam Line Break (MSLB) Design Basis Accident (DBA) as described in Palisades Updated Final Safety Analysis Report (UFSAR) Chapter 14.14, Revision 35 (ML21125A285)
  - Adopt Topical Report titled EMF-2310 (P)(A), Revision 1, Supplement 2P-A, Revision 0, “SRP Chapter 15 Non-Loss of Coolant Accident Methodology for Pressurized Water Reactors” (ML23109A086 April 10, 2023)
  - Corrects the Modified Barnett CHF correlation and associated limit which non-conservatively predicts DNB for some MSLB cases analyzed
  - PNP License Amendment Request submitted May 2024 (ML24145A145)

Project Overview

NRC Orders or Industry Initiatives at Shutdown with Open Actions

- Recommendation 2.1 “Seismic” of the Near-Term Task Force Review of Insights from the Fukushima Dai-Chi Accident
- Beyond Design Basis Seismic Probabilistic Risk Assessment (SPRA)
  - Establish Equipment and Relay Groups
  - Develop Hazards Risk Assessment (HRA) Strategy
  - Build and Execute FRANX Code for Spatial PRA Analysis
  - Address Seismically Induced Flood and Fire and Sensitivities
  - Document Model and Analyses, Peer Reviews
- Submit PNP SPRA for Beyond-Design-Basis Seismic Hazard Reevaluation

Project Overview

Re-establish Power Operations PRA

- Support power operations SSC configuration risk evaluation (Maintenance Rule)
- Support Risk Informed Technical Specification Initiatives, Surveillance Frequency Control Program
- Support Risk informed SSC operability / functionality evaluations

Project Overview

Modification Selection to Enhance PNP Reliability

- Component Cooling Water Heat Exchanger Replacement (*)
- Station Battery Replacement (*)
- Main Feedwater Pump Rotor Replacement (*)
- Turbine Digital Electronic Control (DEH) Replacement
- Instrument Air Compressor Replacement
- Pressurizer Spray Valve Replacement
- Exciter Rewind
- Palisades Plant Computer (PPC) Replacement
- Control Room Heating Ventilation Air Conditioning (HVAC) Chiller Replacement
- Fuel Handling Equipment Replacements/Upgrades

- (*) More detailed discussion on later slides

SSC Readiness

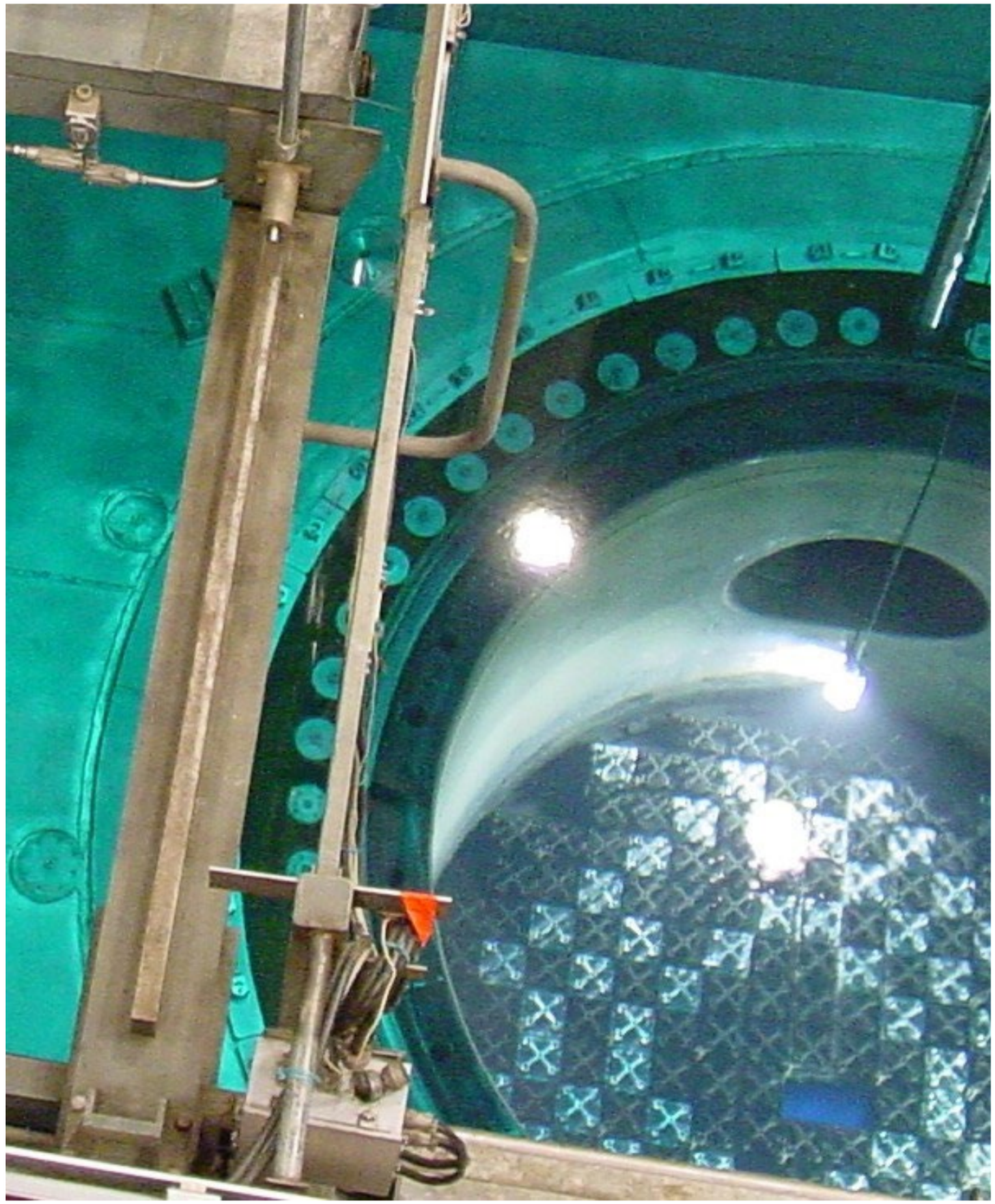
System Return to Service Plans

- **Plans are in development for all site systems:**
  - Assess SSC Readiness for Return to Service
  - Design and Regulatory Requirements
  - Pre-shutdown System Health
    - Work and corrective action program history
    - System notebook and health reports
  - Impacts to System since shut down
    - Completed Work in shutdown
    - Open Work Orders
    - Preventive Maintenance due
    - Surveillance/Testing/Inspections due
    - Open new discovery items
  - Program implications (ASME, NEI, MRP, Aging Management, etc)
  - New or open Part-21 issues
- Start-up Test Plans
  - Surveillance Tests to prove operability/functionality
  - Assure reliable operation
  - Logic validations
  - Post Modification/Maintenance Testing

SSC Inspection and Testing

Reactor Vessel Inspections (RVI)

- 10-year ASME Section XI Inservice Inspection (ISI) Vessel Exams
  - Vessel Cladding
  - Nozzle Welds
- Material Reliability Program (MRP) 227 Exams
  - Core Shroud Bolts
  - Clevis Bolts
  - Upper Guide Structure
- Results summary
  - ISI
  - MRP



SSC Inspection and Testing

Steam Generator Inspections (SG)

- Two Combustion Engineering Steam Generators installed in 1990
- Inspection Scope
  - Full length Eddy Current bobbin coil examination of all in-service tubes (except rows 1, 2, and 3 U-bends) in both Steam Generators
  - Eddy current +point coil examinations
    - 100 of rows 1, 2, and 3 U-bends
    - 100% HL Top-of-tubesheet (TTS), free span, and support interest regions
    - Outer 3 peripheral tubes at the cold leg in the TTS interest region
    - Special interest regions
- Results to Date
  - Inspections are complete in each S/G
  - Repair Strategies are under evaluation
- Results Reporting
  - Final inspection report is still in development

SSC Inspection and Testing

Containment Tendon Testing

- Post-tensioned, reinforced concrete cylinder and dome with a ¼” welded steel internal liner
- Technical Specification Surveillance Procedure for the Containment Building Post-Tension System has been completed
- The inspection is required on a 5-year frequency
  - Testing is conducted on a sample basis
    - Four Dome Tendons
    - Four Vertical Tendons
    - Five Hoop Tendons
- Results Reporting
  - All testing is complete
  - Final report is in development with no significant issues identified during testing

SSC Inspection and Testing

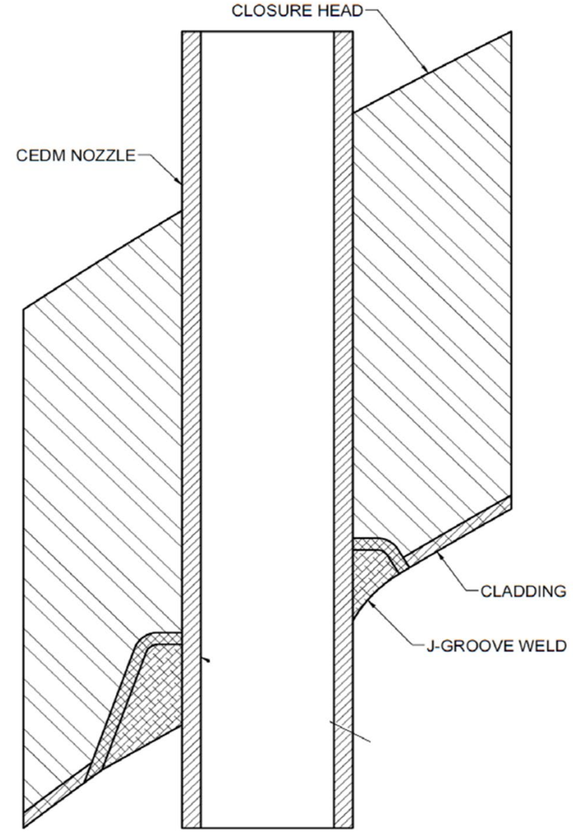
Containment Integrated Leak Rate (ILRT)

- 10 CFR 50 Appendix J Containment Leakage Type-A test
  - Palisades Containment is instrumented and pressurized to accident pressure and held for a minimum of 10 hours
- Test is scheduled in 2025

SSC Reliability Improvement Modifications

Reactor Head Penetration Dissimilar Weld Material Mitigation

- Palisades has 54 nozzle penetrations in the reactor head
  - 45 control rod drive nozzles
  - 8 incore instrument nozzles
  - One reactor head vent
- The reactor head will be modified to eliminate a susceptibility to Stress Corrosion Cracking (SCC) in the head-to-nozzle weld
- Palisades has executed this modification on seven total nozzles to date
  - The remaining nozzles will be modified to remove the Inconel 600 J-groove weld
    - 38 CRD Nozzles
    - 8 ICI Nozzles
    - Reactor Head Vent



SSC Reliability Improvement Modifications

PCS Branch Connections Dissimilar Weld Material Mitigation

- Several Pressurizer and primary loop connections utilized Inconel 600
- Highest SCC risk locations will be mitigated
  - Cut out and replace
  - Structural Weld Overlay
  - Weld Pad and Half Nozzle Mitigation
- Modification Objectives
  - Eliminate SSC susceptible weld locations in primary system branches
  - Reduce recurring dose accumulation due to inspection of high-susceptible locations
- Modification Details
  - All welds within scope of ASME Code Case N-770 will be mitigated
    - 15 Structural Weld Overlays
    - 12 Weld Pad and Half Nozzle Mitigations
    - 4 cut out and replacements

SSC Reliability Improvement Modifications

NFPA 805 Modifications

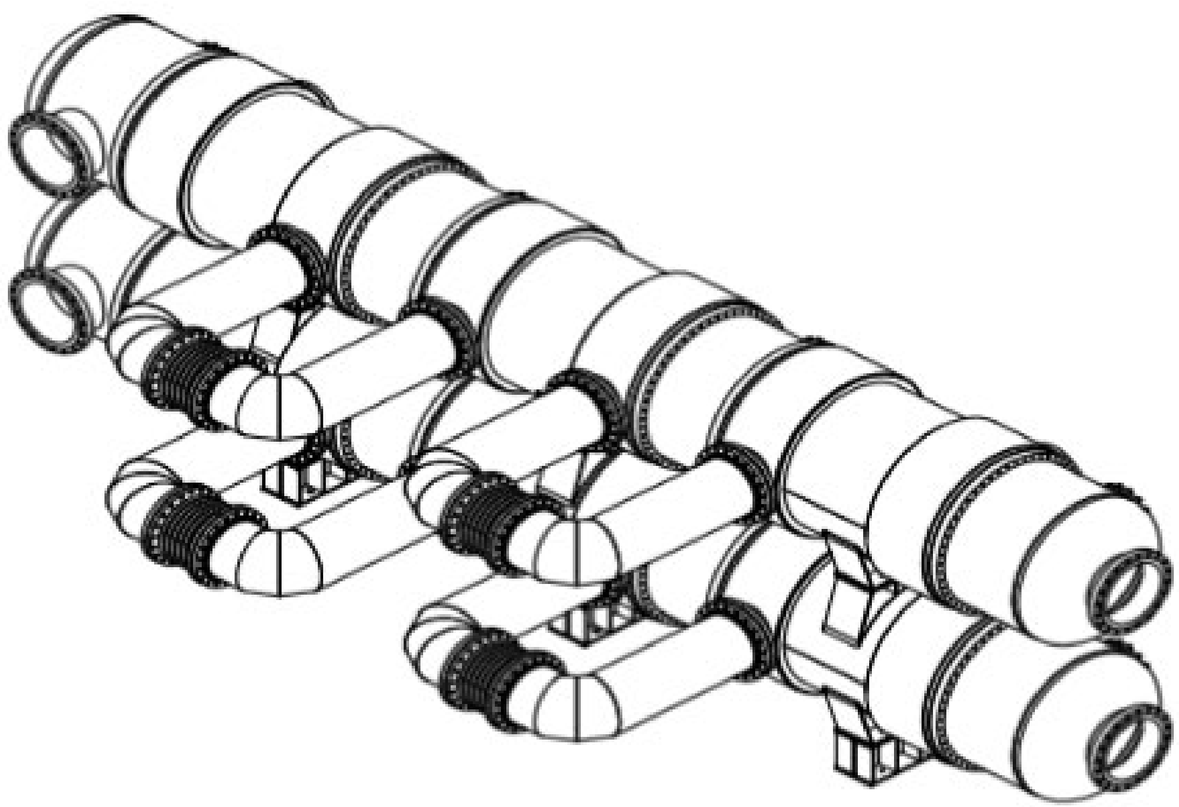
- Prior to shutdown, Palisades installed 11 most risk-beneficial modifications
  - Breaker Coordination
  - Fourth Auxiliary Feedwater Pump, Diesel Driven
  - Condensate Storage Tank crosstie from alternate source
- Palisades will complete the remaining 21 modifications for full NFPA 805 implementation
- These modifications assure full program compliance and reduced fire risk
- Modification Details
  - Fire Detection System Upgrades
  - Fire Barriers and Conduit Seals
  - Doors and Dampers
  - Revised logic and spurious closure prevention for plant valves
  - Local Control Power Sources

SSC Reliability Improvement Modifications

Component Cooling Water Heat Exchanger Replacement

- The component cooling water (CCW) system removes heat from systems which handle radioactive or potentially radioactive fluids
  - Heat transfer from CCW to the Service Water System (SWS) via the CCW Heat Exchanger

- This modification will replace the two CCW Heat Exchangers
  - Increased cooling capacity per heat exchanger
  - Improved CCW system heat removal margin



SSC Reliability Improvement Modifications

Secondary Plant

- Main Feedwater Pump Rotor Replacements
  - Current rotors have been trimmed to eliminate row degradation
  - Replacement of rotors eliminates advance of degradation from the removed blade row into subsequent rows
  - Improved feedwater pump reliability
- Heater Drain Tank Level Control
  - Modification to valve control
  - Modification eliminates the last unmitigated single point vulnerability at the station
  - Reduced trip risk due to single-component failure

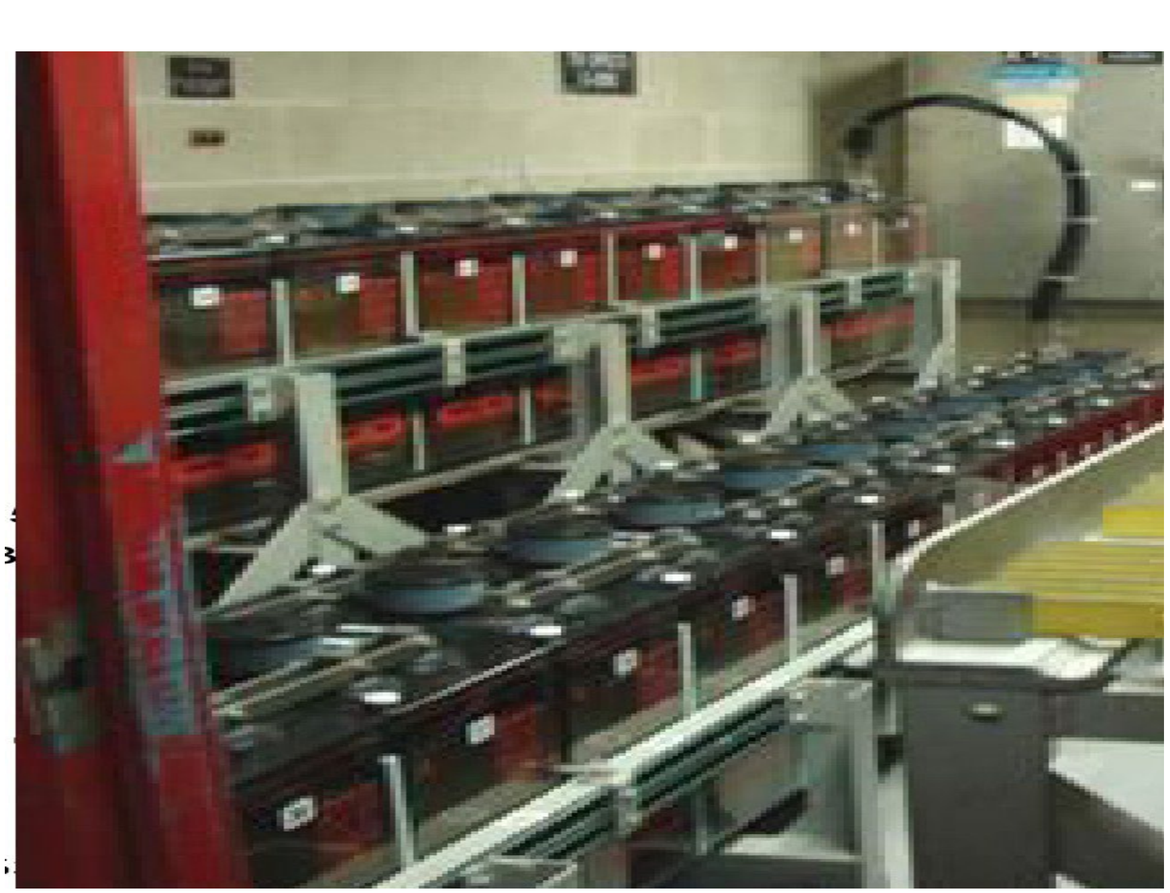
SSC Reliability Improvement Modifications

Station Battery Replacement

- Station batteries are part of the emergency DC system and supply and maintain emergency loads in a station blackout until AC power can be restored

- The batteries are at end of design life

- Replacement scheduled in 2025



Thank You

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Advisory Committee on Reactor Safeguards
October 3, 2024
Full Committee Meeting

Palisades Potential Restart Informational Briefing

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Agenda

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- Project History
- Palisades Restart Panel
- Review Strategy and Licensing Process
- Licensing Actions and Other Activities
- NRC Inspection and Oversight Process
- Palisades Restart Inspections
- Public Engagement

Project History

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- Palisades shut down in May 2022 and in June 2022, fully transitioned to a decommissioning licensing basis
- In February 2023, Holtec provided a proposed regulatory path to reauthorize power operations, with a transition date of August 2025
- Holtec's licensing strategy seeks to return the Palisades licensing basis to what it was just prior to shutdown, with only very minor changes, using the existing NRC regulatory processes and procedures
- The NRC staff is engaged in the technical, regulatory, and oversight reviews and activities necessary to support potential restart of Palisades
- Licensing and regulatory requests were submitted from September 2023 to May 2024 and NRC inspection activities are ongoing

Palisades Restart Panel

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- Established by charter
- Oversees regulatory activities
- Provides management direction for licensing and inspection activities
- Proactively identifies and promptly resolves any challenges regarding restart
- Focus on outreach and communication

Restart Panel Co-Chairs and Project Leads

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Licensing

Office of Nuclear Reactor Regulation

Jamie Pelton

Deputy Director, Division of Operating Reactor Licensing (DORL)

Office of Nuclear Reactor Regulation

Justin Poole

Lead Project Manager

DORL

Inspections

Region III

Jason Kozal

Director, Division of Operating Reactor Safety (DORS)

Region III

April Nguyen

Palisades Team Leader

DORS

Oversight

Office of Nuclear Reactor Regulation

Phil McKenna

Deputy Director, Division of Reactor Oversight (DRO)

Palisades Licensing and Inspection Transition Activities

NRC OVERSIGHT

The NRC will independently review Holtec's readiness assessment to decide if Palisades is safe to restart.

Exit Operating Reactor Oversight

Certifications of permanent cessation of operations and removal of fuel from the reactor vessel

Decommissioning Inspections

Decommissioning Reactor Oversight (Decommissioning License Only)

Licensing

The NRC will review Holtec's requests (Exemption, license transfer, license amendments) to reauthorize operation.

Inspections

The NRC will review and **inspect** Holtec's assessment of systems, structures, and components to return to operations.

Environmental

The NRC will conduct an **environmental** review of the potential resumption of power operations at Palisades.

Return to Oversight Process (Operation Authorized)

May/June 2022 (shutdown) | Fall 2023 | Spring 2024 | Transition Date

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Review Strategy and Licensing Process

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- NRC strategy for ensuring safe resumption of power operations at Palisades includes licensing safety reviews and inspection oversight
- NRC staff believes Holtec's plan to use an exemption, a license transfer and license amendments to restore the authority to operate is within the "existing regulatory framework" that the Commission referred to in its 2021 denial of Petition for Rulemaking PRM-50-117 (86 FR 24362), "Criteria To Return Retired Nuclear Power Reactors to Operations"
- If all NRC requirements are met, all licensing actions will be issued on the same day; when these actions are implemented, Palisades will exit decommissioning and be considered an operational plant

Safety Review Timeline

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Submittal	Licensing Action	Planned Completion*
Sept. 28, 2023	Exemption from 10 CFR 50.82(a)(2)	Dec. 31, 2024
Dec. 6, 2023	License Transfer	Dec. 31, 2024
Dec. 14, 2023	Operating License Technical Specifications	Jan. 31, 2025
Feb. 9, 2024	Operating License Administrative Technical Specifications	Mar. 14, 2025
May 1, 2024	Emergency Plan	May 30, 2025
May 23, 2024	Quality Assurance Plan (supplement to license transfer)	Dec. 31, 2024
May 24, 2024	Update to MSLB Analysis Methodology	Jun. 30, 2025

* Refers to the date the safety evaluations for each action will be complete, but not the issuance date. Issuance would only occur once all safety and environmental reviews are complete.

Exemption from 50.82(a)(2)

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- On Sept. 28, 2023, Holtec Decommissioning International (HDI, Holtec) submitted a request for exemption from the requirements of 10 CFR 50.82(a)(2) to support restart
- The NRC staff is currently reviewing the exemption request, which would remove the prohibition to operate the reactor
- Specifically, the exemption would rescind the June 2022 certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, thereby allowing Palisades to exit decommissioning

Technical Specifications

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- On December 14, 2023, and February 9, 2024, Holtec submitted license amendment requests (LARs) to revise the operating license and permanently defueled technical specifications (TS) to reflect resumption of power operations
  - The application references Revision 35 of Palisades Final Safety Analysis Report (FSAR) as the basis for the design of the plant, which was the last revision in effect before permanent shutdown
- On July 9, 2024, Holtec submitted a supplement to the Operating TS LAR to revert the Palisades Physical Security Plan (PSP) to the last revision in effect before permanent cessation of operations
  - Any PSP changes made during decommissioning that will be retained in the reinstated PSP have been or will be evaluated in accordance with 50.54(p)

Emergency Plan

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- On May 1, 2024, Holtec submitted an LAR to revise the Palisades Power Operations Site Emergency Plan (EP) Plan to support resumption of power operations
- Proposed emergency plan and emergency action level (EAL) scheme for the resumption of power operations:
  - Re-baseline the Palisades emergency plan to the latest NRC guidance regarding EP strategies
  - Restore the EAL scheme to the last NRC-approved scheme for plant power operations
  - Reestablish the offsite EP agreements that were removed as part of transition to decommissioning

Main Steam Line Break Analysis

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- On May 24, 2024, Holtec submitted a LAR for approval of the Biasi Critical Heat Flux (CHF) correlation for use with the Palisades Main Steam Line Break (MSLB) Analysis
- Specifically, Holtec is adopting Framatome Topical Report No. EMF-2310, Revision 1, Supplement 2, to incorporate a new Biasi CHF correlation from Supplement 2 that was approved by the NRC in 2023
- This change is to resolve a previous site-specific topic at PNP and not part of the standard actions to resume operations

License Transfer

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- On December 6, 2023, Holtec submitted a request to transfer the operating authority for the Palisades plant from HDI to Palisades Energy, LLC (OPCO)
- OPCO is a subsidiary of Holtec International
- The request does not change the ownership of the plant or site, which remains with Holtec Palisades, LLC
- The NRC staff's review is ongoing and focuses on both financial and technical qualifications, as well as a review of the operational quality assurance program

Quality Assurance Plan

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- On May 23, 2024, Holtec submitted a proposed power operations Quality Assurance Program (QAP) Manual, Revision 0, as a supplement to the license transfer request
- The QAP will apply to activities affecting the quality of structures, systems, and components (SSCs) as part of restart that must be conducted in accordance with a QAP and the requirements of Appendix B to 10 CFR Part 50
- Holtec upgraded the existing decommissioning QAP to address quality activities conducted during the transition to potential restart of the plant per 10 CFR 50.54(a)(3)
  - Submitted and implemented the Transition QAP on August 2, 2024

Oversight Process – IMC 2562

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- Establishes policies, requirements, and guidance for inspection and oversight of a decommissioning reactor facility seeking to transition to an operational power reactor facility that would be subject to the Reactor Oversight Process (ROP)
- Derived from Inspection Manual Chapter (IMC) 0350 (Facilities in a Shutdown Condition) and IMC 0375 (Implementation of the ROP at Facilities in Extended Shutdown)
- Describes the restart panel, transition between oversight processes, and the development of an inspection plan
- Based on Panel recommendation, the Director of the Office of Nuclear Reactor Regulation (NRR) and the applicable Regional Administrator will agree on transition to ROP after recommendation from regional inspectors

Oversight Process – Inspection Plan

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- Region III has developed a high-level inspection plan, using the guidance in IMC 2562, that describes the process for conducting inspections and the types of activities that will be inspected as they relate to the key attributes of the cornerstones of safety
- The region has developed a more detailed, risk-informed inspection schedule, based on the licensee's planned restart activities, to ensure assessment of all key areas of operational readiness prior to potential restart
- Inspectors and technical experts from across the agency will be used to staff individual and team inspections
- These inspections will be bolstered by restaffing the Resident Inspector Office in late 2024

Inspection Process

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- Inspections will be conducted utilizing existing Inspection Procedures for operating reactors, decommissioning activities, and construction/new reactors
- Inspections will ensure decommissioning program requirements are met, while efficiently using resources for restart activities
- New inspection procedures will be created, as needed, to cover specific areas of interest
- Programs that were fully implemented prior to shutdown will be smart sampled to verify proper re-implementation
- Inspections will be documented in quarterly or standalone reports as completed, and made publicly available

Inspection Sample Selection

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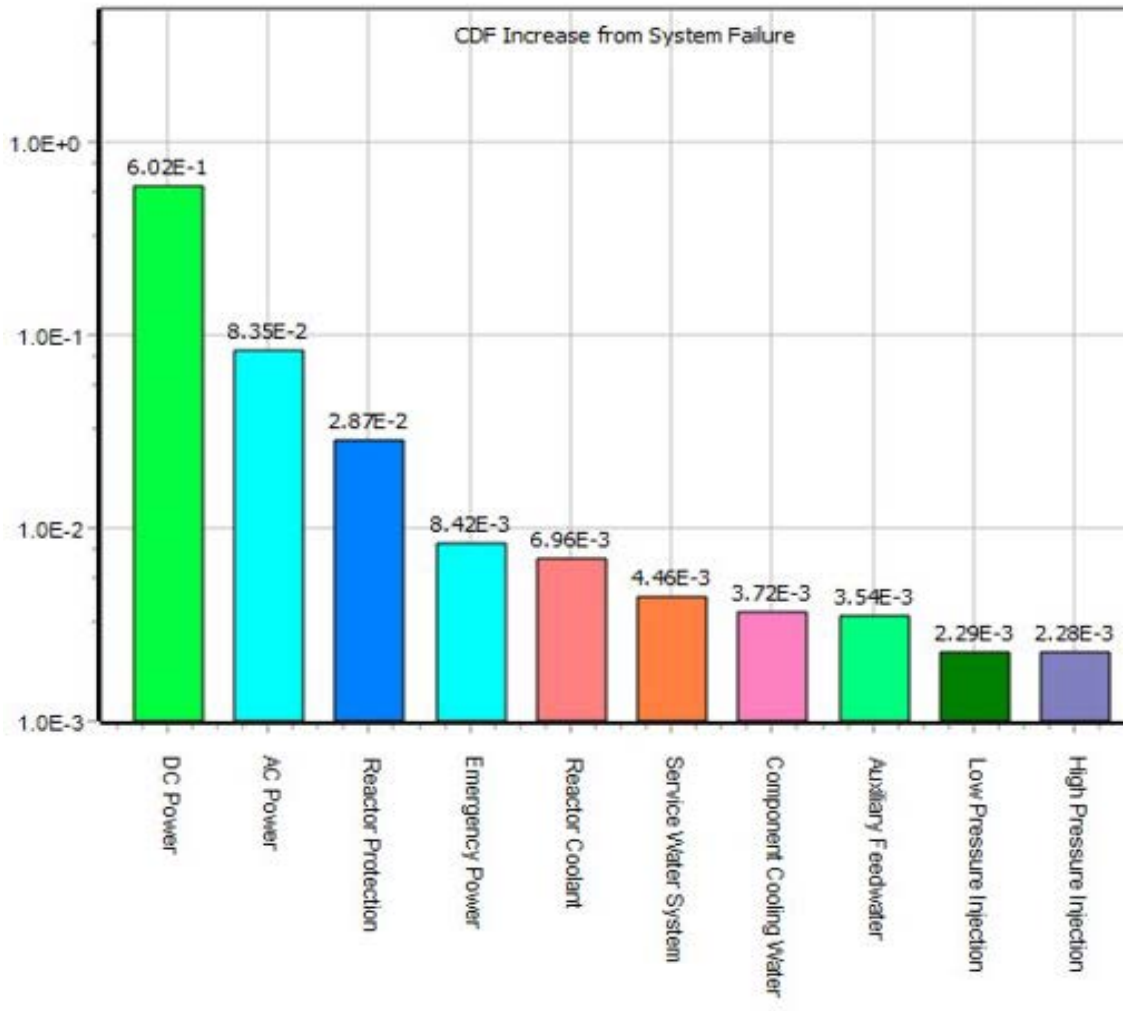
- Increased focus on return-to-service of high-risk systems that can impact the Initiating Events, Mitigating Systems, or Barrier Integrity cornerstones
- Review system modifications that can impact operational risk
- Address historic equipment, design, and regulatory issues, which includes open or deferred items prior to shutdown
- All inspectors will provide insights to the Palisades Restart Team on the licensee's overall corrective action program and safety culture effectiveness
- It is estimated that inspectors will spend **~6000 – 7000 hours** conducting team and "baseline" inspections

Risk-Informing Inspections



- Station Battery replacement – improve reliability and address previous operating experience for design issue
- Control Rod Drive Mechanisms seal replacements – address prior equipment reliability issue

Risk-Informing Inspections

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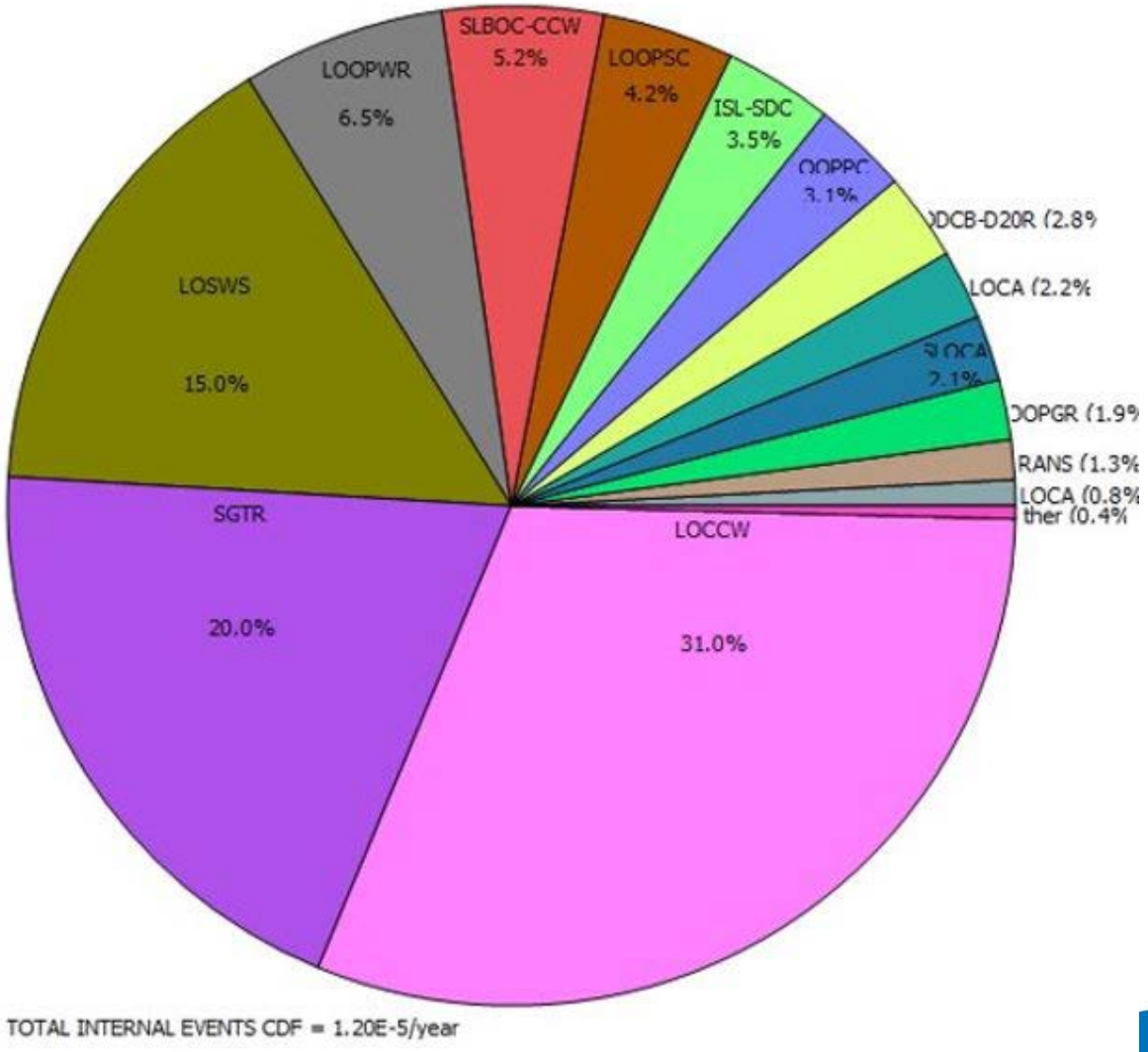

- Component Cooling Water Heat Exchanger improvements – increase capacity and defense in depth
- Service Water Buried Piping inspections and repairs – determine condition of system, address identified deficiencies to ensure reliable and safe future operation

Inspection Topics of Interest

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- Reactor Vessel Inspections: ASME Section XI code inspections of vessel welds; Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines (MRP-227) related inspections (i.e., core shroud bolts, clevis bolts, etc.)
- Alloy 600 Mitigation: full weld mitigation for dissimilar metals (notably on reactor vessel head nozzles, hot and cold legs, pressurizer surge line, and branch connections)
- NFPA-805: complete installation of modifications for full transition to a risk-based fire protection program
- Closure of Open Regulatory Issues: GSI-191 (verify containment modifications and mitigating actions implemented); open phase (NRC Bulletin 2012-01); seismic hazards re-evaluation

Special Topic: Steam Generator Inspections

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- The licensee conducted full tube eddy current inspections, secondary side visual inspections, and sludge lancing, along with other activities, in both the steam generators (SGs)
- Potential actions to address the indications include tube plugging, tube sleeving, and/or a combination of both to ensure the heat transfer capability is maintained to operate the Palisades SGs efficiently at full power
- The NRC released a Preliminary Notification on September 18, 2024

Public Engagement

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- Palisades public interest from local/county/state/tribal groups, non-governmental organizations, and Congress
- Stakeholder interest covers historical equipment/safety culture, facility age, environmental impacts, and decommissioning activity/funding
- Staff pre-submittal meetings on licensing actions had ~50 to 200 attendees
- PRP public meetings near the site in April and August
  - ~100 in person and ~250 online attendees for the April meeting
  - ~50 in person and ~75 online attendees for the August meeting
  - Next is tentatively planned for November 2024 as part of the NRC commitment to host ~quarterly public meetings on restart
- NRC scoping meeting in July discussed environmental review of potential restart activities

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Questions

Additional information on all the Palisades licensing and oversight activities is available on the NRC public website.