



NAME

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DURATION

2h 12m 41s

35 SPEAKERS

Sophie Holiday

Angola Otto

Jamie Pelton

Phil McKenna

Philip Opsal

Morris Byram

Jean Fleming

Michael Schultheis

Joseph Jerz

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Andrew Johnson

Steve Blum

Paul Klein

Eric Reichelt

Liam O'Donohue

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Quinn Winn

Justin Poole

Jay Wallace

Seung Min

Jody Flynn

Craig Schultz

Alan

Ed Lyman

Lee Dubois

Ed Mcardle

Daryl Gale

Pat Morita

Richard Shmidt

Diane D'arrigo

Alfred Meyer

Micheal Keegan

Jan O'Connell

Mr. Berlin

Kevin Kamps

START OF TRANSCRIPT

Sophie Holiday

Good morning or good afternoon, depending on where you are joining us from. My name is Sophie Holiday, and I am a senior emergency response coordinator here at the US Nuclear Regulatory Commission. It is my pleasure to welcome you to our public meeting with Holtec Decommissioning International LLC, to discuss their plan to submit two separate license amendment requests related to the Palisades Nuclear Plant. The First Amendment request is related to the primary coolant system leak before break. Simply put, this refers to a methodology used to identify a leak in the reactor

primary coolant system prior to a break or rupture. The Second Amendment request is related to steam generator sleeving. This refers to a repair technique for steam generator tubes. Angola, please take it away.

Angola Otto

Thank you, Sophie. Welcome to everyone here to today's public meeting between the Nuclear Reactor Commission or NRC staff and Holtec staff. I'm Angola, and I'm a project manager in division operating reactor licensing here at the NRC. The purpose of today's meeting is to go over two license amendment requests that are going to be submitted later. The first one is related to the primary cooling system leak before break methodology. And the steam generator repair technique regarding the steam generator at Palisades. I will start with introductions. Then we're going to do open remarks. Jamie is going to do open remarks for the NRC staff. And then we're going to give Holtec an opportunity to do open remarks, and then start their first presentation. And with that, we can start with Jamie as far as introductions. And then we'll go around.

Jamie Pelton

Good afternoon, my name is Jamie Pelton. I'm the acting director of the Division of Operating Reactor Licensing. I'm also one of the co-chairs of the restart panel.

Phil McKenna

I'm Phil McKenna, and I'm the deputy director of the Division of Reactor Oversight. I'm also one of the co-chairs of the Palisade Restart Panel.

I'm the acting chief for the licensing branch for this project.

Aside from supporting this project

Steam generator engineer with Framatome.

Philip Opsal

Pilip Opsal, Regulatory Programs Director, Framatome.

Morris Byram

Morris Byram, Framatome project manager.

Jean Fleming

Jean Fleming, I'm the Vice President of licensing for Holtec.

Michael Schultheis

Michael Schultheis, director of regulatory and site strategies for Holtec and Palisades.

Joseph Jerz

Joe Jerz, is director of engineering at Holtec.

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And technical reviewer, Containment Plant Systems branch.

Andrew Johnson

Andrew Johnson, a senior materials engineer in the Corrosion of Steam Generator Branch.

Steve Blum

I'm Steve Blum, branch chief of the Corrosion and Steam Generator branch.

Paul Klein

I'm Paul Cline, I'm a technical reviewer in the Corrosion and Steam generator branch.

Eric Reichelt

My name is Eric Reichelt, I'm a senior materials engineer in the piping and penetration branch.

Liam O'Donohue

Hi, I'm Liam O'Donohue. I'm a project manager in the Licensing Projects branch.

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I'm __, member, observing

Quinn Winn

Quinn Winn, a senior staff engineer.

Justin Poole

Justin Poole, lead restart PM.

Jay Wallace

Jay Wallace, Office of Research and Materials Engineering.

Jamie Pelton

Good afternoon. Welcome to the pre-application meeting. I appreciate everybody's flexibility in the last minute change of plans, and I appreciate your your flexibility and shifting this important meeting to today. As I've said in our past pre-application meetings, these dialogues are so important to ensure that we have common understanding of the application that you're proposing. I look forward to a very open dialogue and look forward to hearing your presentation. With that, I turn it over to you.

Sophie Holiday

Thanks, Jamie. I think we've covered this open and closed session of the meeting agenda. Um, so we've done the introductions. The first part of the presentation is going to be the leak before break. Primarily it will be Morris presenting the Presenting the technical information. Intellectual types will be supporting with the schedule. And then when we move to the next section, it will be Phil presenting technical, and then Mike again with the schedule. And obviously any questions as we go through, please stop us. Our objectives for today truly is to seek staff feedback on the scope, the content, and the approach for the license amendment request for both submittals that we are developing, with the ultimate outcome of ensuring a smooth acceptance review and technical review for the process.

Sophie Holiday

For background, we've consolidated this from previous application meetings. The two highlighted pieces March 13th of 2023 (almost two years ago) we submitted the regulatory engagement plan for our regulatory path to reauthorize our operations. And then in December of 2023, HDI submitted the license amendment request that would support the resumption of power operations. One that relies on is revision 35 of our UF, SA chapter 14 for the accident analysis as part of our return to power operations. That's the basis of that tech spec law. At this point I'll turn it over to Morris to dive into the content.

Morris Byram

This content structure is consistent with NEI 9602, which is a document put together by the industry in order to make sure the right content is presented. We're going to talk about a reason for the proposed changes, description of proposed changes, technical evaluation, which will include the leak before break. Analysis, licensing, and background, approved... break analysis. The that is CM 367-A, and that references the bottom of the page, which will include CM 367-A application to Palisades. It will go through the regulatory guide 1.45 adherence, which is required by the CM 367-A. It will also include a section on regulatory evaluation. We will go through the different regulations and guidance that will be used for the LAR. We'll talk about industry precedent for an LAR such as this for leak break and then no significant hazards, consideration, determination and environmental evaluation. Regarding the reason for proposed changes, the Palisades will be presenting this LAR in order to recover unnecessary conservatism in loads analysis using approved leak before break analysis and taking credit for the PCs primary coolant system leak detection systems capabilities allowed by general design criteria for leak before break analysis for the plants was approved by the NRC in 1990 CM 367-A. Again, there's the ML number location for that. CM 367-A provides the technical basis for all the plants, for the leak before break analysis was performed. Again, this is the hot leg and cold legs of the RCS piping. The NRC evaluation for the CN 367-A did acknowledge that the analysis was bounding for the Palisades plant. For the first application of leak before break, it will be applied to reactor vessel internals loading, specifically the shroud bolts. A little bit of history there it shut down in 2022. Palisades did not have an acceptable bolt pattern analysis, otherwise known as ABPA, to meet section five of the MRP 227 requirements as a part of ABPA work process, review of the Palisades design basis is performed, which includes large break and predicting crediting leak before break analysis provides acceptable results for the ABPA. Description of the proposed changes. There are no text back changes for this LAR. It is simply to change the licensing basis in the described in the FSR and text based basis in order to incorporate it into the licensing basis. Sections of the FSR that can be affected are 1.9.2, which addresses time limited aging Analysis Section 4.7, which addresses primary coolant pressure boundary leakage detection 1473, which talks about the reactor internals, structural behavior following Aloka, and also delineates the loads that have been applied to the reactor vessel internals. Textbook sections will be changed. The basis sections will be changed to reference 145 Rev 03. 4.13 PCs. Operational leakage 3.4. 15 PCs. Leak detection instrumentation. The basis for the analysis is performed for 3.67 and approved by the NRC, was read at one 45th May 1973, which is the first revision of Reg guide 145. NRC evaluated Palisades Against the Red guide 145 during in zero 820. And that is known as the Integrated Plant Safety Assessment Systematic Evaluation Program. Back in October of 1982. And the issue of that. Uh Nureg zero 820 which applies is uh topic V five Palisades agreed to submit a tech spec and as a part of that report and closing out that report, Palisades agreed to submit a tech spec change request concerning operability of the leak detection system when a review of topic 3-5.A of the Sep. The effects of pipe break on structures, systems and components inside containment was completed. And therefore, the NRC concluded that although all of the leak detection. This is for the the approval for Nureg O 820. The NRC concluded that although all of the leak detection systems recommended by Reg 145 are not present, Palisades incorporates six additional diverse systems, and that small loss of coolant accident risk was low.

Morris Byram

Palisades license amendment 162 incorporates the primary coolant system, leak detection, limiting conditions, and operating operation AES and surveillance requirements into tech specs. That close SCP topic D-5. The 1982 SCP evaluation along with the licensing amendment 162. Uh therefore meets uh sin 367 a or the leak before break analysis uh stipulation to demonstrate that leakage detection systems installed at Palisades are consistent with the red guide. 145. So technical evaluation LAR content uh approved leak before break analysis. Is the basic analysis for all the plants for break followed Nureg 1061. Volume three. And again, the evaluation report stipulates that licensees must submit information to demonstrate that leakage detection systems installed at the specific facility are consistent with the reg guide. 145. Those are the actual words from the Technical Evaluation Application to Palisades 367A was fully applicable to Palisades when approved in 1990. The LA will address the following plant changes since NRC approval, and that is steam generator replacement, which was done in 1990, and license renewal, which addressed aging management in 1998. Thanks. For adherence to Red guide 145. Um, the LAR will include adherence to revision one over 145, even though it was just read revision zero that was available when the evaluation procedure was approved. We're going to go ahead and show that the plant is consistent with the red guide 145. Red one. Red one is expanded compared to red zero. LAR provides a comparison of Palisades design against Red guide 145, revision one includes information previously covered in Red zero. NRC evaluation in the closure of the the new Red and SCP topic five and it provides uh it provided to baseline Palisades design and leak detection program against most recent industry guidance and reaffirms that Palisades Meets the sea and 367 a stipulation to demonstrate that leakage detection systems installed in Palisades are consistent with the Red guide. 145. Since for the record, at 145 adherence Palisades is voluntarily made enhancements to the leak detection program. Since license amendment 162. Which, again, was requirement to close out the document or the new regular leak. 20, uh, implemented Palisades. Another change was implemented. Uh, the leak rate monitoring program in 2010, which specifies requirements for assessment and response to a rise in unidentified leakage, describes administration, assessment and response guidelines, data verification guidelines and actions in response to rise in unidentified leakage and follows industry best practices. Uh, per Westinghouse BWR owners Group letter G072 86 And a modified Palisades plant computer to provide or for automated or on demand PCs. Leakage calculations. Inventory balance of the RCS. The plant computer was also provided enhancements also updated to provide enhancements for real time trends for important leakage indication. And there are those indications that have been added to the plant computer on time indication. It is the Palisades position that strict adherence to read guide 145, Rev zero and rev one regulatory positions would require Palisades back fits previously evaluated by the NRC as not required based on low safety significance and diversity of existing leakage detection systems. So regulatory evaluation section. Uh, red guys, the appropriate red guys will be our, uh, general design criteria will be referenced. And then, uh, and then ten CFR 50, appendix B, quality assurance. All documentation, uh, will be up to the appendix B standards to support the LA. Uh Red guide 145 reactor coolant pressure boundary leakage detection systems. Uh, that all the again, all the uh requirements there will be addressed and also the technical basis for leak before break analysis Nureg 1061 volume three evaluation of potential for pipe breaks. Uh, that is the basis and getting back up to the, the GDC for, uh, environmental and dynamic effects design, the regulation that allows for leak before break to be, uh, incorporated into the licensing basis states that, however, dynamic effects associated with postulated pipe ruptures in nuclear power units may be excluded from the design basis. When analyses reviewed and approved by the Commission demonstrate that the probability of fluid system piping rupture is extremely low under conditions consistent with the design basis for the piping, and that is what the C.M 367-A evaluation uh, does. For precedence for the leak before break evaluation being applied to licensing bases. Originally 367 before it was approved in 1990 was approved for, Palisades Fuel. In the HTP fuel spacer grids to eliminate the large local loads already. It was not formally placed into the into the licensing basis at the time, because the Dash eight version had not occurred until 1990. So even though it was used as basis for approval, it had not. The document itself had not been approved for use for all the CI plans. So that's probably the biggest precedent that we have. And then, of course, there's all the other seed plants that have already adopted the CIN 367 a leak before break at Saint Lucie. Units one and two San Onofre, Arkansas. Nuclear one, unit two, Millstone Nuclear Power Station, Waterford Steam Electric Station. And the dates for those were ranged from the early mid 1990s to out to 2011. Okay. And then LA content finishing up with no significant hazards. Consideration of termination of the no significant hazards questions will be answered as part of the LA and consistent, consistent with ten CFR 5092 C and based on A on the successful. No significant hazards consideration, then the environmental evaluation candidate can use the categorical exclusion as set in ten CFR 5120 2C9. So that's finished with the content for the LA. So I think that Mike Schultheis is going.

Michael Schultheis

The anticipated schedule for the submittal, is early February at the latest. We're still targeting January 31st to have it completed. We are requesting an expedited review to be completed by middle of August to support a September. If you remember, this would be different than our transition for licensing basis because it is associated with a mode hold for plant startup and not transitioning to operating or licensing basis.

Eric Reichelt

I have a couple questions. This is Eric Reichelt, from the head penetration branch. I've noticed that you use Nureg 1061, which is the standard that you provided was SRP 363, also utilized as a guidance.

Morris Byram

In general, I don't know if it was even around. It was referenced in the CRC evaluation.

Eric Reichelt

That's what I'm asking.

Morris Byram

It wasn't referenced in the evaluation.

Eric Reichelt

Are you going to be taking a look at that?

Morris Byram

Yeah, we'll take a look at that. That might be something that would help us for our evaluation.

Eric Reichelt

Rev zero and one regulatory positions would require Palisades benefits. You're incorporating rep one, are you not? We are in this. There is one of the items in Red guide 145 that's not strictly adhered to. I think that's particulate. Radioactive particulate. That's not got an indication for but that was actually addressed in the original Nureg oh 820 document, which said that there are other six systems that that are acceptable.

Eric Reichelt

The reason I'm asking is because the word back fits is not a word that that's a dirty word we prefer. And in my mind now, this is just my opinion, but a back fit applies to a plant that's operating. And by all rights, you're not operating. You're going to restart. So that's something that no you need to go look at.

Morris Byram

If you if you have this kind of statement in your presentation, just make sure within the application, if you're not adhering to that, you put it, you know, strictly to all the requirements in the right guy. Clearly point out in in the application on the docket where you're deviating and why you think it might be okay.

Morris Byram

That's that's the that's the plan. So the only thing that the only other further comment that I can tell you is if you're looking for us to provide approval by August 15th, which is very demanding with the work that we have in-house right now, there's only a few of us that are doing this type of work. The only thing I can strongly suggest is that provide as much information in that lar so that I don't or whoever is going to be reviewing it does not have to go over our eyes. You know, a number of them, you know, one 1 or 2. Three. You know, personally myself, if it's not complete, we're going to ask you again. Okay. So more information that you have in LR for this topic, the better the review time for us. I don't know if anybody else has. Any comments or anything. Well I just had a question. When you're ready for the evaluation, I noticed that there's no mention of the GDC two. And in terms of the instrumentation and the be able to determine whether you have these, the capability of doing that after like a earthquake or something, that's very important. And I was just wondering whether GDC two is something that's, um, included in your regulatory evaluation for this detection.

Andrew Johnson

I believe that when the tech spec these systems were put into tech specs requiring AES, That that should have been addressed during that time. However, there is one of the Red God 145 adherence requirements that does address seismic, at least one one component being seismically qualified. And that's going to be addressed in the LA.

Jamie Pelton

May I just pause quickly to remind folks to introduce yourself before you speak? I am sorry, sir.

Eric Reichelt

To the comment made before, there could be a need for rise, and that's fine. I think what the staff is trying to say is, you know, do your best in trying to provide as much information as you can. You know, that way we don't have to say, well, I need this report, and then we have to look at that report and then we ask our eyes on said report. Right. If there's there's enough basis and application including, you know, maybe second tier calculations or whatever it is, you know, in the initial application that we can, you know, not have to do the digging and then ask questions. Right, right. I prefer if you provide me with a story, you know, if something isn't completely met, like you were saying, as one particular case of the Red guide, have it in the LA and then tell us why you think it's acceptable as is. Not that I have to try and guess what you're thinking. Right. Exactly.

Seung Min

My name is Seung Min with piping and head penetration branch. And I have a few very quick questions just for my better understanding. The first question is that one of the slides I was talking about a potential change to the USSR, especially time limited aging analysis sections. So I'm wondering if this LBB application and the LBB involve the time limited aspect, or time dependent aspect. So that that's the first question. And the second question is when we talk about large break loci and associated loadings, does this application mainly focus on exclusion of rupture like guillotine break type rupture, or is there any certain range of break size or flow rates in terms of loading calculations and so on? So those are two questions.

Morris Byram

I think that the the main thrust of the sea Sea Org analysis is the development of a fracture in the piping that could lead to a leak before the break actually occurred. And so it's any break that could occur in the main piping hot legs and cold legs. Does that answer the question?

Seung Min

Yeah, to an extent. But I mean, still, in my mind, I'm wondering if that's mainly focused on rupture, total rupture versus a certain range of breaks. I mean that that that's not really clear to me at this point. Just feedback. And the next question is about time limited aging aspect. I mean, of course we are not talking about licensing or subsequent license renewal process, but there was a was a reference to the TLR section change, but if my recollection is correct, the first license renewal related to LBB did not really identify any time dependent aspect, but I'm wondering if this application changes that position.

Morris Byram

No, it's the the application is going to be completely consistent with the analysis leak before break analysis. So it's totally dependent technically on that analysis.

Seung Min

Okay. Then I would guess that there's probably no change to TLA section. But yeah we can talk about that later. I mean especially when I see the application then yes. Thank you for the discussion.

Jamie Pelton

So again, this portion covers the steam generator license amendment request that we are currently under that's currently under development. Then we'll be covering the same sections of the law content that will be with Phil, and then Mike will cover the scheduling as well for that one. Next slide We cover this in the next slide. And then once again, we are, you know, soliciting staff feedback and questions to accelerate the review process for this licensing request. So we submit it to the regulatory path. That was 2020 3rd December of 2023.

Jamie Pelton

We submitted the technical specs. Um, once the request for resumption of power operations and then September of last year. The HDI and the NRC participated in a conference call that discussed the ongoing steam generator tube inspection activities in the ML number is listed there. So that leads us up to where we are today. This is all fine from the steam generator branch.

Philip Opsal

I'm Philip from Framatome, and I'm going to take you through the rest of the slides for Sleeving. The LAR follows again the any guidance in 0602 Rev nine. That's the outline that they give you to follow. And that's what we did. We follow that. We set this up similar to, uh, the last leaving, uh, LA that was approved by the NRC, which was for Watts Bar Unit two back in. The application was in September, on September 30th, 2019, and NRC issued approval on August 10th, 2020. The MLR number is 20156 alpha zero eight. I think that's later in the slides to see that. But what they did is they used a technical report that they had written, and customized it with the LAR, referring to various sections of that topic report for their technical justification. So we've organized ours in a similar fashion where we don't have a top of report that you can review and approve, approval. We wrote a technical report that we're attaching, so it'll follow that same logic to try to make it something similar to what you've already looked at. And then I'll get to it later. I think there's 34 references altogether in the LR, 18 of which are framatome documents that, bring out all the different categories, all the different things that we'll be talking about. Okay. So the first the first part of the LR is the reason for proposed changes. Then we get into the description of the proposed changes. Then a technical evaluation then a regulatory evaluation. No significant safety hazards determination and environmental evaluation. And as I just said, attached will be um, the supporting Framatome technical report.

Andrew Johnson

This is Andrew Johnson from the NRC staff. The Watts Bar two Amendment that you referenced. So that was the fourth time that we had approved this week limiting alloy 800 sleeves. Have you seen the previous withdrawal related to Beaver Valley Unit two with Beaver Valley?

Philip Opsal

Reasonable proposed changes. We talked we just talked about the report that was given back in September. The NRC issued the report in October. Um, and the atoms attention number is there. So there's a reason that we want to get in there and repair steam generator tubes with the existing steam generator. I'm not going to go through all that, because it's just the second time the power operating tech specs only allowed degraded tubes to be removed from service by plugging, so we don't have a mechanism to repair them right now, so we need to change that. Plugging reduces heat transfer and reduces the primary coolant flow available for core cooling. Sleeving will repair the tubes to prevent them from having to be removed from service, and can also restore previously plugged tubes to service to improve air flow. Description of proposed changes. Proposed changes allowed use of 680 sleeves. The other for use of 800 LR 800, is used a lot in Europe and Westinghouse opted to use 800. We're using LR six nine to repair degraded tubes as an alternate tube plugging requirement. 3413 is being revised to require verification of primary coolant system flow rate. Um, and the reason we have to do that is a plug. A sleeve tube takes 10 to 12. Sleeve tubes will equal one plug tube. So you have to we have to do an analysis to determine that we're still within the flow of the core. Um, so that that surveillance requirement is being revised to require that, uh, text back. Three 417 steam generator tube integrity is revised to allow the option to plug or repair tubes. Currently it just lets you plug, uh, specification 558 steam generator program is revised to provide provisions for plugging or repairing steam generator tubes. Update the provisions to clarify the two. Plugging is not a repair and include a repair tube. Sleeve and tube. Both sleeve and tube inspection interval that shall not exceed 24. Effective full power months or one refueling outage, whichever is less. And specify the allowable steam dinner and two repair methods which established a ten year sleeve in service limit. A quick question is Steve Blum. So do you not know how long your operating cycle is going to be 24 or 18? Based on the way you wrote that, I wasn't sure. We're we're giving the flexibility right now. I don't think it's been decided on. Operating cycle and it will stay that way. So while you're writing it for 24 or less, I'm just asking as opposed to being very specific. So in any event.

Eric Reichelt

24 months I'm just asking what they're doing.

Liam O'Donohue

Yeah. In the event they go to 24 months okay. That's a lot of work going on to improve fuel. That's fine. Okay. I won't get into here but Uh, it won't easily allow them to go to if, if and when that gets there. Gets through. Okay.

Jamie Pelton

Currently we're at an 18 month cycle. That's okay.

Liam O'Donohue

This is Paul Klein again from the senior branch. It's a real quick comment. We think it's a good idea that you put a term limit on the sleeves.

As part of this amendment. I think it's a good idea. Okay. We have it. There is ten years with data that back that up.

Liam O'Donohue

That backs that up. Specification 568 steam generator tube inspection report is revised to add reporting requirements for tubes repaired by sleeving. And the proposed changes are generally consistent with the standard technical specifications for combustion engineering. Um 1432 row five will also be provided. All this is pretty consistent with what the president said.

The other four that you were mentioning. Uh, okay. Next slide. Thank you.

Liam O'Donohue

Technical evaluation. Um, now, all this detail is going to be in the attached technical report that I mentioned earlier. So the string path through this, you know, piece together all the different documents to come to the conclusion. We do the to we do that for you in this document. Um, so the sections includes addressing uh, that documents got a proprietary currently obviously. Um, we're going to make a non-proprietary version, a redacted version, and include that as another attachment to the to the arm. Okay. Um, the sections uh, this this document includes sections addressing, sleeve design, description, sleeve installation, sleeve material selection and corrosion Rossion evaluation sleeve qualification testing and evaluation that includes mechanical tests, evaluations on linkage, axial loading and cyclic fatigue loading, testing and main steam line break and local burst and collapse evaluations. Uh, we'll have a section on sleeve inspection which includes pre inspection and post inspection. Eddy current inspection. Eddy current inspections, uh, sleeve structural analysis. And uh, or the structural analysis confirms that, uh, the sleeve design satisfies Palisades uh Asme code requirements because Sleeving is in the code. Now, I'll get to that in a minute. It's actually the part of the Asme code misleading. Uh, sleeve leakage integrity is another section and operating experience with our 680 corrosion performance. I'll talk about that about that later in the presentation. Additional additional additional details to be discussed in the closed session.

Angola Otto

Andrew Johnson from the staff again. So you mentioned, uh, a couple slides back that.

Andrew Johnson

The, uh, LA was still in development. And so I was wondering, in reference to your, uh, laboratory testing, have you finished your lab testing already, or is that still ongoing with the lab?

Testing is complete. Yeah. Richard Coe is our my technical expert on this. Okay. Thank you. Okay. Next slide. I'm on slide 33. Okay. Thank you.

Liam O'Donohue

Regulatory evaluation, uh, conformance discussions are provided for, uh, 5036 x 36 c2 c2 two Uh, limiting condition preparations. Let's see. Uh, 5350 50.363 C3 surveillance requirements 5036 C5. Administrative controls ten C4. Appendix Alpha. General Design Criteria 1415, 1930, 31 and 32. And uh, look through some of those. Reactor coolant pressure boundary is 1415. Reactor coolant system design 19. Control room 30. All reactor pressure ground boundary 31. Uh. Fracture. Prevention of reactor coolant pressure. Boundary 32. Inspection of rear coolant pressure boundary. I do want to point out that the following discussions specifically refer to the Gdcs and their interpretations, which existed in July and seventh, 1971 when the plant was licensed. These discussions should be considered as not be considered as commitments to comply with any interpretation document issued after this date. Any commitments to later design.

Requirements are documented separately in fields. Okay.

Liam O'Donohue

Okay. So and we also have discussions about ten CFR appendix B, our quality assurance program and ten CFR 5055 AA codes and Standards. And lastly regulatory guide 1121, which is the basis for plugging degraded steam generator tubes.

Next slide. Okay.

Liam O'Donohue

President. Thank you. Um, yeah. Most recent leaving amendment was what's bar is the section number there. And it was April 10th 2020 was when the NRC issued your Um, and we use that as guidance for making sure we have things covered for, uh, the Palisades things. What your what your weight is. When you looked at we looked at the other ones were Comanche Peak Unit one, and that was, uh, applied for in July of 20, 2003. Approval letter was March of 2004. Beaver Valley. One application was 127 2004 approval letter was ten five 2004 uh Beaver Valley two uh application was 328 218 the approval letter was 225 219. And then once our unit two, it was one all legal limits, all used 800.

Material. Okay. We are. Actually, still in 334. No significant safety hazard determination.

Liam O'Donohue

The proposed amendment represents no significant safety hazard consideration under the standard set forth and set forth in Tennessee. 450 92C and accordingly, a finding of no significant safety hazard is justified. And you'll see the write up below for that evaluation. Environmental evaluation. The proposed amendment meets the eligibility criteria for categorical exclusion as set forth in ten CFR 5122. Charlie. Charlie nine. Therefore, pursuant to ten CFR 5122.

Bravo, no environmental impact statement or environmental assessment need be prepared in Prepared in connection with the issue of the amendment. Um, and as previously mentioned.

Liam O'Donohue

Supporting technical report will be enclosed. Uh, and some of the proprietary details will be discussed in the closed session. Okay. Next slide please. Uh, similar to the program.

Angola Otto

Discussion.

We intend to submit no later than the first week of February that we're driving to, having submitted by the close of this month.

Eric Reichelt

Uh, also with.

Uh, an expedited review and approval schedule so that we can implement, uh, in September, um, coordination with mode changes for startup. As Eric said, this is a very aggressive uh oh, I'm.

Liam O'Donohue

Sorry, Steve Blum Branch Chief Eric said, this is a very aggressive schedule. And even though you're quote unquote following a precedent, it's is not exactly because it's a different material, different type of sleeving. And as Eric said, we need everything you've got from the very beginning. Um, and I'll say this out loud, but we may need to go visit Framatome and go visit the site, see the testing, see some of the materials, all that kind of stuff. And that all is going to add to a schedule that is already very aggressive. So I'm just throwing that out there. Now, in addition to what my two staff members are going to ask you questions on. Um, so just letting you know.

Jamie Pelton

Um, we understand we're asking for a very aggressive review.

Liam O'Donohue

We understand that. I don't know if you want to go. Which one are you going to? Yeah, this is Paul Klein. Uh, I'm not going to repeat what Steve said, and we'll save our questions for the closed portion, because I think it might involve proprietary information. But one thing that that could potentially speed up our review is if, you know, there's documents that maybe aren't going to be submitted, but will be very interested in is perhaps setting up a portal or some type of arrangement where everything's not sent in and docketed, but it might be some good reference material that supports the LA that that might be one way to help us out in terms of.

Jamie Pelton

Speed of review. And this is Jamie Pelton. I'll just add to what Paul said, if if we do have some sort of portal activity, if any of that information is.

Needed to make our safety determination, we may ask for it to be Docketed understand? Okay. Thank you. Okay. I think.

Liam O'Donohue

We're on to the.

Questions or comments. Next slide. Okay. Any further questions before the closed session.

Liam O'Donohue

Do you have a proprietary one. Please save it. So in terms of uh, this particular design, has it been installed in steam generators internationally or any other type of heat exchangers.

Eric Reichelt

No other heat exchanger or other heat exchanger? Yes.

Angola Otto

Um, and uh, but not any steam generator. Right. Well, we go over that in our.

In our documents as well with the history of, uh, use of this. Thank you.

Liam O'Donohue

Any more questions? I think I'm down to the thank you slide.

Your attention and thank you. Just, you know.

Jamie Pelton

Any last calls for, uh, members of the staff who may be online to ask questions? Any other questions in the room? Just want to make sure that. Okay, it looks like everybody we have online is members of the public. And we'll get them in the. You actually got to know someone. So thank you. No more questions from the staff. We can go ahead and go to the question and answer session section. Um, so thank you.

Sophie Holiday

Great. Thank you so much. Okay. So let's go ahead and open up the floor for clarifying questions or comments about today's meeting. Um, I will also remind you that your questions should be directed to the NRC staff. While you may ask them of holtec, they are not required or obligated to respond to your questions. So to ask a question, please utilize the Raise Hand feature on teams. You can find this at the top of your window with the hand icon. Looks just like this. For those that have joined us via the audio line, you can dial star five on your phone and that will also raise your hand. Teams will automatically put you into the queue in order of your hand raising, regardless of if you joined us on the application or on the bridge line. Once I have called your name, I will unmute your microphone. If you are on the audio bridge line, you may have to dial star six to unmute your microphone. Once you're unmuted, you are free to ask your question. We ask that you minimize any background noise and that you identify yourself in any group or organizational affiliation, if applicable.

Sophie Holiday

To ensure that everyone is given an opportunity to ask their questions should they have any. We request that you ask only one question at a time, and speak for no more than two minutes. If time permits and there are no additional questions, then you can come back and ask additional questions. Again, if you encounter any difficulties while you're trying to speak using the computer based teams application, please check that your audio settings are in the correct setting to ensure that your computer microphone is enabled. Alternatively, you can call into the audio bridge line and use that feature as well. Again, the phone number for the bridge line is (301) 576-2978, with the phone conference ID number 31652640 £1. That information is in the chat so you can view it there in case I was speaking a little bit too quickly. So with that I'm going to go with the first hand that I see in the queue. Please clearly state your name and any affiliation if applicable. So Jody Flynn, I see that your hand is raised. You should be able to unmute your microphone and proceed with your question or comment.

Jody Flynn

Thank you. You're welcome. My name is Jody Flynn and I cannot help but continue to try to ask the NRC to keep a perspective on what they are considering approving. Holtec. A company has never run a power plant before. Is asking you to adjust very serious safety risk when the NRC should be holding this particular plant to the highest standards, as it could be the first plant to reopen. So your decisions will affect the rest of the United States. So why? Why is the NRC willing to allow Holtec to ignore the safety standards of 2025 that you have set up? Um, that that is the year that they will be open, supposedly. So I don't understand why they are not held to those standards. And would the 2025 safety nuclear safety standards allow that many tubes to be adjusted? And is there a limit on how many tubes you would allow to be adjusted.

Liam O'Donohue

Thank you. I will start and offer up for any.

Jamie Pelton

Other of the staff to add. I appreciate your question and appreciate the the seriousness of the technical issue that's before us. And we have our materials and the steam generator experts that are that are here and prepared to review the application that's put in front of us. And we will only approve the the application if it is safe to do so. So, you know, I'll just leave it at that and offer if our staff want to add anything to this.

Liam O'Donohue

Yeah, this is Paul. I'll add to that. We're going to hold Holtec to the same standard as every other PWR in the United States. And and they must demonstrate that they're able to maintain tube integrity during the operating cycle. And if And if they're able to do that, then we'll treat holtec the same as every other PWR. And if they can't convince us that they can maintain tube integrity, then they won't be starting up because of that issue.

So, you know, thank you.

Sophie Holiday

Thank you. And just a friendly reminder for staff as you're responding to the questions. Not that you didn't do this Jamie and Paul, but please remember to identify yourself. And and while we can always refrain from using acronyms, at least please, um, define them for us before we use the acronym. Okay. So thank you for your question, Jodi. And thank you to the staff for responding. Next hand that I see in the chat belongs to Tom Flynn. Tom, you should be able to unmute your microphone. Tom, if you can hear me, you should be able to unmute your microphone and proceed with your question.

Liam O'Donohue

Yes. Thank you. I appreciate the opportunity to ask the question. My question relates to, um, Caltex application back in July of 2022, were applying to the Department of Energy, asked for a replacement of these steam generators. And now, um, they have a plan to say, no, it's fine, it's okay, it's safe, and we're going to repair it. But it seems to put a you know, this process seems to put a lot more stress on the system and thus increase the risk to the public and particularly us, who were the nearest neighbours to the operating plan. So my question is can you explain this? It seems like a back pedalling to me. Thank you.

Jamie Pelton

Hi, Tom, this is Jamie Pelton. Um, so you referenced a communications between Holtec and the Department of Energy. And those are. Those are outside of our our scope of safety evaluation.

So I can't comment. On communications between Holtec and the Department of Energy.

Jamie Pelton

But as you know, as Paul said and I said, we will only approve this if they.

Demonstrate through the information that they docket that it is it will. Allow safe operations.

Sophie Holiday

Thank you, Jamie. And thank you for your question, Tom. Okay, so the next hand I see in the chat belongs to Craig Schultz. Craig, you should be able to unmute your microphone.

Craig Schultz

Hello? Can you hear me?

Sophie Holiday

Yes we can.

Craig Schultz

My name is Craig Schultz. I'm a member of Michigan Safe Energy Future, and I live 50 miles from Palisades. Thank you for allowing me to speak today. Holtec received hundreds of millions of dollars in public grants to prepare Palisades for at least 20 more years of operation. The grant proposal explicitly included \$510 million for replacing the steam generators. Now, Holtec is proposing Sleaving, a fix that appears to prioritize short term savings over long term safety and reliability, replacing the 30 year old steam generators. As outlined in their grant, is essential to meet public expectations and ensure safety and reliability during our transition to cleaner, safer, less expensive electricity. Nrc, I'm calling on you to be the mature mentor in the room and hold Holtec accountable to doing what is best for the long term interest of the public and the nuclear industry, and not be swayed by inexperienced short term interests of the plan owner. I have three questions there. I believe they're yes or no questions, so I'm going to ask them quickly. They're simple. If one tube breaks could this can cascade to cause other tubes to break. Number two could multiple tube failures lead to a loss of coolant accident or needing to use the emergency cooling system? Something that we want to avoid with an Embrittled reactor vessel? And number three, will Sleaving provide the same safety and reliability as full replacement? Thank you.

All right. So this is exciting. So this is Tom Mccanna, deputy director of Division of Reactor Oversight.

Liam O'Donohue

Are waiting for the technical staff to answer the three questions. Again, like Jamie said, we can't comment on any conversations between.

The Department of Department of Energy.

Liam O'Donohue

Yeah. This is Paul Klein from NRC staff. Uh, I'm not sure if I got all your questions down in terms, but I believe your first one was if one tooth break, can there be cascading failures? And there are two failures. That that's not been the experience in plants that have had issues. Uh, I don't think we can never say never, because you can postulate different type of accidents that are beyond design basis. But in terms of the history of steam tube ruptures, there's typically one tube that fails and then the plant is safely shut down. Uh, if you could repeat number two about the multiple tube failures, that would be helpful.

Craig Schultz

Yeah. So, um, the question was.

Liam O'Donohue

Uh, if there's multiple two failures, what a cascade.

To a Luca. That's correct.

Liam O'Donohue

I think there's multiple two failures there, there's a chance for a greater dose than a single thing. But it doesn't necessarily mean that you'll cascade to like a full brake lockup, for example.

Jamie Pelton

And then for the public, let's define what Loca is, please.

Paul Klein

A loss of coolant accident. Yep. Which in this case we're interpreting as like a a main loop break. Right. And then the third question was related to sleeving and safety reliability versus replacement of the steam generators. I mean from our perspective the safety case needs to be made for sleeving. And Sleeving is a known repair in steam generators. There's been literally tens of thousands of sleeves installed in steam generators throughout the world. So it's not a new design thing to us. And our And our expectation is that we're leaving. You would maintain the same safety reliability. It's also possible with the new steam generator to get into issues. So just replacing the steam generators doesn't guarantee that there there won't be any steam generator tube related issues. In terms of operational reliability, typically plants that replace steam generators do much better than plants that have older steam generators.

Jamie Pelton

Thanks for providing the operating experience with the number of sleeves that have been safely installed across the industry. Appreciate it. Paul.

Sophie Holiday

Thank you. And thank you for your question, Craig. All right. So the next hand that I see in the chat belongs to Alan Bland. Alan, you should be able to unmute your microphone. Alan, if you can hear me, you should be able to unmute your microphone and ask your question or provide your comments.

Alan

Oh, thank you. And thank you for the correct pronunciation. First, I want to just make a comment on the sleeving. So that would be my one question. And then hopefully on the next round I'll have a question on the on the leak before break. But first on the steam generators. Let me just first make a comment. I think the last questioner asked about is there a scenario where if tubes fail, that it could lead to the actuation of the emergency core cooling And you know, the the answer to that is yes. As a, um, does any licensed SRO at a Westinghouse PWR knows that if the steam generator to break exceeds the capacity of the charging system, the makeup system, then most of the, I believe, will require that there will be a manual safety injection actuation. So just that's my understanding of how that answer that question should have been answered. Now my comment I want to thank I couldn't catch the the person's name. He said he was from the steam generator branch. I want to really thank him for clarifying that there will be a number of additional steps necessary, in particular looking at the steam generator tube integrity and that you cautioning holtec that there will be additional submittals and meetings necessary for that. And let me just leave. It's going to be really important. You know, this is a high interest to the public. If there are no current technical specifications, really driving how Holtec is to make reports on their steam generator findings. So we're really relying on the NRC to keep us informed. And I know in terms of pre-decisional decisions, you know, your your your communications directly with Holtec would fall into the category that you won't share those with the public. And I would just leave it with the NRC is to be careful with that. And in particular with the steam generator issues, as we're going forward to to fail on the side of communicating Questions. Questions and answers with the public. Thank you.

Jamie Pelton

Hi, Alan, this is Jamie Pelton. Thank you for for your comments. I just wanted to say as as far as communications go, communications and transparency with the public is one of our main objectives, and we will be communicating with the public through our inspection reports, which are available on the public website. Go to NC gov. In the upper left hand corner there's a palisade restart page and all of our documents are available there. That includes the applications as they come in. Um, our, you know, the the steam generator calls that we've had are referenced there. And, you know, as, as we move forward in the review of this application that we anticipate we will if clarification meetings are needed, we will hold those meetings publicly. Um, you know, but that's how people communicate transparently through the review of our applications and through our inspection activities.

Sophie Holiday

Thank you, Alan for your comments and also for expressing your appreciation and recognition of staff's response to a prior question. Okay. Next hand I see in the chat belongs to Ed Lyman. Ed, you should be able to unmute your microphone.

Ed Lyman

Great. Um, can you hear me? This is Ed Lyman. Great. Thank you. So I had two questions. My first in response to a comment that was made during the leak before break. Um, section was regarding backfill. So is it the NRC's definitive position that a shutdown plan cannot be backfitted. As a result, the Backfit rule does not currently apply to palisades or to the other shut down plants that may be restarted. That's my first question.

Eric Reichelt

This is Eric Raichelt from the staff. I was just looking at their wording on their presentation. I we don't have an opinion on that. I don't have an opinion on it as, as of now. I'm just saying the word backfit is something that we try to avoid here at the NRC. You know, I think it would depend on the exact scenario that you're talking about as to whether or not a backfit would be applicable to a plant that's in a decommission phase and trying to restart.

Lee Dubois

So was it more than a legal question? I mean, are there technical aspects or is it ultimately going to be decided by OGC?

Eric Reichelt

Well, we've obviously got a pool again. We'd obviously have to have OGC involved in that discussion, but I think it would be a specific scenario type question of what thing you're talking about, whether a backfit would be applicable or not. I don't think we can just say yes or no. It would be entirely applicable or not applicable.

Jamie Pelton

Doctor Lehman, this is this is Jamie Pelton. You know, the commission has applied the Backfit rule to plants and decommissioning. But then you know, as Justin said, whether something is a backfit depends on the specific facts. So we would evaluate on a case-by-case basis.

Ed Lyman

Okay. My second question related to the leak before break analysis. So without really knowing the knowing the details of how the regulatory procedures for that. I do believe that there is some a component in addition to monitoring systems, but also in service inspection plays a role in making leak before break determinations. So my question is, are there any unique circumstances with regard to the Palisades restart that may differ from the prior leak before break analysis that were established using a certain baseline for plant condition and in-service inspection intervals? If that makes sense? I was wondering, someone could just comment on whether or how those aspects or plant aging or, uh, processes that occurred when the plant was shut down that may affect that baseline, uh, integrity, uh, How that might affect or go into the review of their license amendment for this. Thank you.

Jamie Pelton

Looking to members of the tech staff, if you're able to address Doctor Lyman's question.

Eric Reichelt

At this point in time, I would need to look at the LA and its completeness. Thank you. Eric. I'm sorry. This is Rachel again.

Seung Min

Yeah. This is.

Sophie Holiday

Thank you. So.

Seung Min

Yeah, this is something with the piping piping branch as part of the LBB review. Typically, technical reviewers are checking if there are any inspection results or operating experience supporting or indicating that there is a significant impact in terms of piping system degradations, Decisions such as stress corrosion cracking, fatigue and so on. So that's the typical topic of interest from staff's perspective.

Jamie Pelton

Thank you so much for jumping in.

Sophie Holiday

So thank you. And thank you, Eric. And thank you for your questions. Doctor Lyman. Okay. So next hand I see raise belongs to Kathy Barnes. Kathy you should be able to unmute your microphone.

Yeah. I have.

Jody Flynn

A question. Um, I was wondering who is, uh, Burma. Is it called Burma Tone? Um, where is it located? How long has it been in business? Is it a subsidiary of, uh, the nuclear industry? Is it connected to Holtec? Is it a part of Holtec? And, um. Or are they an independent agency? Uh, could the NRC do independent testing of these things? Uh, or are you going to, uh, just do oversight and accept the findings of this company? And, um, I wondered also, are they a US based or are they foreign? And, um, I'm questioning this because I couldn't find it online. Usually you could find things online. Um, so, um, I'm kind of curious about that.

Jamie Pelton

Hi, Cathy, this is Jamie Paulsen again. Um, you know, Framatome is a contractor of Holtec. Uh, the license amendment application would come from Holtec, and Framatome is supporting Holtec in that application. They're a company. I don't have all of the details. Um, but they're a company that has been in the nuclear industry for many, many years. And, you know, we will evaluate the technical.

Information that's presented and, um, and go from there. And again, we'll only approve if.

Jamie Pelton

If the technical information and the lab testing is, as folks have.

Referenced, is determined to be satisfactory to the staff. Okay.

Sophie Holiday

Thank you. Jamie. Um, I'll also add, uh, the staff has, uh, indicated to me that NRC oversees Remington's activities, and we inspect their processes and work activities, just like we would for holtec. So thank you for your question. Okay. The next hand I see belongs to Edgar McArdle. I apologize if I mispronounced that. Edgar McArdle, you should be able to unmute your microphone. And if you could hear me, you can unmute your microphone and proceed with your question. Okay, I'll try one more time. And if you can hear me, you can unmute your microphone and ask your question or provide your comments. All right. And if you change your mind, feel free to raise your hand again and we'll get you back into the queue. Okay. So the next hand I see belongs to Mark Muhich. Sorry, Mark. If I mispronounced that Mark, you should be able to unmute your microphone.

Phil McKenna

Yes, indeed. Hello. Yeah. Thank you for pronouncing your name correctly. And thanks for holding this hearing. Um, I was incredulous to hear whole Texas, um, depending upon, uh, permits that were done in the 70s, 80s, 90s to early 2000, uh, as applicable to their plant renewal. Now, after that, uh, Palestinians have been sitting out on the lake shore of Lake Michigan two years, two winters running. Uh, yes, indeed. I would appreciate the gentlemen from the NRC and going out to Palestine and inspecting those tubes and the pressure vessel itself. This is, uh, as everybody's been saying, an unprecedented renewal. And I don't think that any type of dependency, anything on, uh, other permits from other plants is applicable in any way, shape or manner. I'm a graduate of Parkside High School in Jackson, Michigan, which is the international home of Consumers Power, which sold to energy because they didn't want to fix the pressure vessel, nor the the, uh, the generators. And so they sold it to energy and they didn't fix it. And then they sold it to Holtec and they didn't fix it. And now they're expected to renew it, uh, after it's been sitting up in the winter, two winters we go on. We love Lake Michigan too much. Thank you very much.

Sophie Holiday

Thank you so much for your comments, Mark. Okay, so the next hand that I see I'm sorry.

Jamie Pelton

So I'll just go ahead and comment on that comment. So part of the.

Phil McKenna

Restart, as part of our oversight of the restart activities, we do have inspectors in the field. Uh, as far as the Palisades pressure vessel goes. Uh, Palisades has to follow the inspection rules, and we oversee that. Uh, the inspection effort of the Palisades. Okay.

Sophie Holiday

Thank you. Phil. So, Ed McArdle, let's see if you're able to unmute your microphone this time. And are you able to hear me?

Ed Mcardle

On the leak before break section, I understand that the steam generators did not have a wet layup when holtec, uh, took over the plant. And as far as I know, you can't get an answer that they have not had a wet layup yet, so there could be massive amounts of corrosion that are not yet detected on the steam generator tubes. And so it seems like there's quite a bit of, uh, or quite a number of failures, uh, cracks. And of course, the cracks, I understand, is a direct pathway to the reactor itself. So if you're relying on leak before it breaks, wouldn't, uh, radioactive material be leaking? And I think this could be dangerous. And second thing is that, uh, it seems like over time, the rate of failure of these, uh, tubes is increasing. So with that, they went way up. I think the future looks pretty dire for leaving or leaking before breaks. So it would require, uh, new generators, I would think. Um, so that's my question.

Andrew Johnson

This is Andrew Johnson of the staff. So in, uh, I believe it was in the, uh, previous inspection outage call that we had back in September. In the notes, we documented that they had placed the generators in wet layup in May of 24. Um, and there was about a two year period where they were not in a wet layup with controlled water chemistry. So that was the the latest information that we had. Uh, as far as leak before break, the leak before break analysis is not applicable to the steam generator tubes. Uh, that is deals with, uh, different piping. So that doesn't apply to the tubes.

Jamie Pelton

And this is Jamie Pelton. I'll just add that, um, you mentioned the, you know, the NRC's knowledge of the condition of the steam generators. I just want to, um, reinforce that we have inspectors that.

Are both at the site and regional engineering inspectors who, um.

Jamie Pelton

Who inspect the steam generator activities so that they're well aware, as I believe Paul Klein mentioned earlier, we'll have further engagement on pressure testing, etc.. So the NRC is very engaged. And, um, on top of the the actual condition of the steam generators.

Sophie Holiday

Thank you Jamie. Thank you Andrew, and thank you for coming back and asking your question again. Let's go to Kevin Kamps.

Eric Reichelt

I do have some comments, but I also have a question. It seems that the NRC has prejudged the outcome of these license amendment requests, because the NRC has assigned a resident inspector to a facility that has no operating license or construction permit. This is in violation of NRC criteria. NRC appears clearly to be planning to relicense the operating license. Also, 600 tubes were plugged in 1990 and the current steam generators as a safety related precondition to the license renewal. From 2011 to 2031 that was approved back in 2007. So, this is a departure from the license that was relinquished on June 13th of 2022. This should not be reversed. That's an important safety condition that should be maintained. Also, Palisades is unique. The stress corrosion cracking occurred not during operation, but after the facility closed. The stress corrosion cracking cannot be cured by sleeving and affects not just the tubes, but the tube sheet as well, which is also a reactor coolant pressure boundary that was mentioned earlier. But it is not a precedent, it is a warning. Watts bar steam generators were replaced just one year later. This problem was created by incompetence. And I'd like to thank the NRC staffer who just provided a clear answer to a question that I asked on November 20th, 2024, in Benton Harbor, Michigan. Which was when was wet layup finally instituted at Palisades. We just heard it was May of 2024 that Palisades steam generators were placed into wet layup, a two-year delay in the chemical preservation of the steam generator tubes. This is gross incompetence. This is bordering on criminal incompetence. You're putting our region at risk because Holtec has never operated a reactor, is inexperienced and incompetent, obviously. Clearly. So I would like to finish by reading a short section from Arnie Gundersen. This 13-page report was published on January 7th, 2025. I'd like to know from the NRC how to submit this report. For the record, this is just one paragraph, and I quote from the report. Holtec suggests that it should sleeve the damaged tubes rather than plug them. However, one must remember that the tube damage is due to stress corrosion cracking, and sleeving increases the stress in the tube. According to the Electric Power Research Institute Steam Generator Sleeving Review Committee, and I quote from the process of forming a sleeve joint, which places an additional stress on both the sleeve and the parent tube materials. The additional stress in the joint increases the parent tube susceptibility to environmentally induced cracking. And I end the quote. This is from NEA magazine, a 1998 article that Arnie Gundersen cites in his report. So, my question is referring to the Watts bar warning. Has Holtec ordered replacement steam generators for the current ones that are so severely degraded? Has NRC been informed of this order for new steam generators? Is this just a bridge of Band-Aid fixes to get to new steam generators and to keep to Holtec announced schedule for restart?

Liam O'Donohue

This is Tony. I'll answer the resident inspector question. And first off, we assigned a resident inspectors to operate in reactors that are in a construction status. It's not prejudging the outcome of that status and going to operation. That is a part of our policy.

Jamie Pelton

And I'll just add, it is prudent for us to have inspectors on site observing every day the safety related activities that are ongoing. This is part of our commitment to public health and safety. So I will, you know, reemphasize what Phil said. There has been no predetermined outcome. We will only approve authorization. We will only authorize operations if it's safe. And that includes for the steam generator repair methodology that's been discussed today. There is no predetermined outcome.

Sophie Holiday

Bill. Thank you. Jamie. Um, okay, so the next hand I see in the chat actually belongs to a phone number ending in three, one, two, five. You should be able to unmute your phone and ask your question. If not, you may have to dial star six. The phone number ending in three, one, two, five. Did you hear? Oh, I think I can see that. Yes we can. If you could just state your name for us and then proceed with your question or comment.

Daryl Gale

Daryl Gale. I have two very short comments and a short question. As someone who watched with horror the catastrophe of the steam generator fiasco in 2012 at San Onofre, where tubes blew and released unknown quantities of radioactive nuclides onto the beach and into the air into the water. Now, no one in the community believes or trusts SoCal Edison or Holtec NRC. Why are you taking the risk to basically lose your credibility again in a highly, highly populated area? That's it.

Jamie Pelton

Thank you for your question. I want to start by being clear that the San Onofre steam generator issues did not result in a radiation release to the beach or to the public. So, I just want to be clear on that. Thank you.

Sophie Holiday

Jamie, and thank you for your your comments and question, Gail. Um, so the next hand that I see in the chat belongs to Pat Morita. Pat, you should be able to unmute your microphone. If you can hear me I think. Can you hear me? Yes we can.

Pat Morita

I'm thrilled. Okay. Well, I have a few comments. And then a question. First, Kevin Kamps asked several questions that were not answered, so perhaps he could be invited to come back on and restate his questions. I just want to point out that Holtec has never operated a nuclear power plant. They're inexperienced, and the lack of knowledge, and bereft of the idea of the need for a coordinated plan. And so they failed to maintain Palisades steam generators, which has been said here before, and they did not have the proper chemical controls to prevent corrosion after they took over the plant in 2022. Uh, they clearly did not have enough engineering and operating knowledge of nuclear power plants, or they would have immediately drained and replaced the caustic fluid with within the tubes. So it took Holtec an incredible two years to identify the problem in 2024. And I point out that the NRC did not identify the problem either. So now they would like the NRC to allow them to make unsuitable and unworkable repairs. Then, of course, there they have found additional damaged tubes. 700 additional damaged tubes were found in 2024, and this was more than the total of 600 previous tube failures that happened over 35 years previously. So the NRC first, if you're going to not get new steam generators, you need to fully analyze the extent of the damage. And it's almost certainly severe and extensive. A few failing tubes could lead to a cascading failure and the possibility of a core meltdown. And even without a meltdown, any escaping radioactivity that doesn't simply go away. It is forever. Everything it touches becomes radioactive, including people, animals, plants, land and water, and spreading a contaminated zone.

Pat Morita

They've talked about crimping the steam generator tubes. I'm not an engineer, but I am a scientist, and this has been pointed out before. Even without a science background, a simple observation can show that damage is done when a metal is bent and it doesn't go fully back to its previous integrity. And if you move it back and forth a few times, it can weaken or even break. So any damage to the tube before crimping or after crimping, you can add that to the problem. I don't even want to sleeve around my kitchen pipe, so I'm crimping is a less safe solution, and it's an attempting to save money by not replacing the steam generators. So you could say it's an entirely unsafe or so-called solution. So there's cracks. Where there's pitting and there are holes and the tubes are exiting, exhibiting stress corrosion cracking with axial cracks going up the tubes and cracking going around the circumference of the tubes. And the tubes are worn. And there is the chemical pitting. So this is not the damage to a pair of shoes or even a single vehicle. Inexperience, carelessness and greed have led to train wrecks such as the one in East Palestine, Ohio, And two Boeing 737 Max airline crashes and as horrific as those were and are, nuclear power is a technology where precautions and defense in depth are far more important. The forever nature of radioactivity and the dangers it presents to the biosphere are issues not to be left to guesses, estimates, extrapolation, computer modeling, or chance. So the the NRC.

Sophie Holiday

Did you have a question?

Pat Morita

Yes I do I'm I'll move to my question. I want to know why why Holtec includes the option of replacing Palace steam generators in its in its July 25th, 2022 bailout application to the US Department of Energy.

Jamie Pelton

Hi, Pat. This is Janie Pelton. Thank you for your comment. As I stated earlier, we are unable to comment on communications with the Department of Energy that is outside of our purview. But what I can assure you is that we have technical experts that are ready to review the application that will be presented to us, and we will only approve it if it's safe. As Paul mentioned earlier, steam generator tubing is not a new repair methodology and has been used in the industry and we will only approve it if it's safe.

Richard Shmidt

I heard some terms that I that sort of caught my ear that during some of the discussions, there was some discussion about the safety injection aspect that could occur following a leaking tube or and also vessel embrittlement. That was talked about. And it brought to mind the possibility of, a process that I haven't heard much about lately about in terms of annealing the vessel. And I say that just because it seems to me like a process that can provide some margin to some of these accident cases. Accident analysis. And I was wondering if that process is even in existence anymore. I don't hear it talked about much anymore. And I was wondering if it's ever been considered since the plant's been shut down in an extended time period for the last couple years. Just curious if anybody knows about the status of that.

Jamie Pelton

Hello. Thank you for your question. This is Jamie Pelton. That is outside the scope of this meeting. Unless any of our staff have anything to add. We want to be cautious, not to be speculative.

Sophie Holiday

All right. Thank you so much. And that reminder, for those that have questions or comments, please make sure that they're related to the topics of today's meeting. That is the two respective license amendment requests that were presented. Then the next hand that I see belongs to a telephone caller. You should be able to unmute your phone.

Diane D'arrigo

Hi, this is Diane D'arrigo. I'm the radioactive waste project director at Nuclear Information and Resource Service, and we are obviously very disappointed that the NRC is considering the ridiculous plan to reopen this reactor. And the steam generator issues are especially important. Specifically, uh, the if there's a break in the steam generator. We will have a direct pathway from the core of the nuclear reactor out into the air and into people's lungs. There is that. There is no other way to stop it. Once there's a break, it's a big problem. It's a nine-mile point. Reactors in New York have had many other reactors. As you know, the steam generators were the demise of the San Onofre reactors. And it was a relief that the reactors closed when they did, so that it prevented this danger. And now the NRC is considering reopening that reactor without dealing with all of the dangers. The more sleeving, the more plugging, the more pressure there is and more leaks can happen. And it only takes one leak. One break to cause the release of deadly radioactive material. So, we call on the NRC to not proceed with this.

Sophie Holiday

Thank you for your comments.

Jamie Pelton

So this is Jamie Pelton. I just want to be clear that a steam generator to rupture is not a direct pathway to the outdoors for public release. I just want to be very clear that is not an accurate statement.

Sophie Holiday

Thank you. Jamie. All right. So the next hand that I see, I've not heard yet. Uh, is Lee Dubois. Lee, you should be able to unmute your microphone.

Lee Dubois

My name is Lee Dubois. I'm a professional engineer. I'm not affiliated with Palisades. I am familiar with pressurized water reactors and this type of design and steam generators. The sleeving methods that are being proposed here are standard practice. They've been proven over and over in the industry. I have high confidence that the regulatory body, the NRC, will ensure the safety of the public. This is based on my knowledge of safety factors of steam generator design, sleeve design and also safety factors. In accident analysis the NRC utilizes the licensees plans. So, I have total confidence that this repair method, as long as it goes through the adequate reviews by the NRC. Will meet the safety requirements. As outlined in all the regulatory. Guides. So that is the end of my statement. That is the only comment that I wanted to make. I have no further questions. Thank you.

Sophie Holiday

Thank you so much for your comments, Lee. Okay, so the next hand that I see from someone I have not heard yet belongs to Alfred Meyer. Alfred, you should be able to unmute your microphone.

Alfred Meyer

Yes. Thank you for calling this meeting today. I certainly look to the NRC and your charge of protecting public health and safety. The question I have is whether or not public health is better served by replacement of steam generators or by significant modification of old integrated components of these steam generators, which were slated for replacement in 2006, 18 years ago. Others have alluded to this, and I think it's significant to repeat that even though almost three years ago the idea of restarting Palisades was floated by Governor Whitmer, Hotel Holtec failed to put these significant, important components into the proper wet layup conditions that were defined by Entergy. So they further degraded these important components, and now they're proposing significant modification of highly engineered structures. Steam generators. Is this really protecting the public health? So I'm also asking, what's the rush for restart? Maybe beyond the pursuit of private profit over public safety? I know of no electrical shortages in the area or pressing needs for this facility to come back online right away, quick. There's been reference to the aggressive schedule at hand. And so I'm asking what's the pressing need for this aggressive schedule? And so that's one question. My other question is isn't it better for public health to replace the steam generators?

Jamie Pelton

This is Jamie Pelton again. I believe all of our staff has addressed the safety aspects of Sleeving versus new generators. Um, again, we will only approve this if it is safe. And with respect to respect to the timeline, the NRC will take the time it needs to ensure that the proposals in front of us are safe and they will only be authorized to restart if it's safe. We will do that in the time frame needed to assure safety. And we won't authorize if it's not safe.

Paul Klein

This is Paul Klein from the staff. If I could add to that, really the standard doesn't change whether they do sleeving in the steam generators or they have replacement steam generators. The regulatory requirements are to maintain tube integrity, and that's the standard that we intend to hold them to. Whether they do replacement steam generators or sleeve the existing steam generators. And the regulatory requirements for dose and those type of things don't change and the standard doesn't change.

Sophie Holiday

Thank you Paul. Thank you Jamie. And thank you for your questions, Alfred. Okay. I am going to go with Michael Keegan first and then Jan, as I've not heard from you. And then I'll circle back with Alan. So, Mr. Keegan, you should be able to unmute your microphone.

Micheal Keegan

I'm Michael Keegan with Don't Waste Michigan. I've been tracking this plant since the mid 80s. The steam generators were identified in 2006 by Entergy as needing to be replaced or identified by consumers as needing to be replaced. They haven't been. You're twisting the tiger by the tail. The steam generators are not the only major system at Palisades that's severely compromised. The reactor pressure head vessel should have been replaced. It was supposed to be replaced in 2007. It was not. I see that the strainers, the question about the strainers, and the insulation coming off will be kicked down the road until 2029. So, I see that back in the late 80s, consumers used a lot of hydrazine to be able to stretch the life of the steam generators. I want to know how much hydrazine is going to be used on the steam generators after they come out of this repair to allow them to reduce the corrosion, severely compromised the September 3rd inspection report was reported on September 18th. A report that followed October 1st, but an operating license, they need to report out at 180 days from September 3rd. When will they report out again on the status of the steam generators? Will that be within 180 days? Um, that's my question to you. Also, I take issue with the fact that you're going into a portal, a secret document room that is inaccessible by the public. You spoke about transparency as being a high priority for the NRC. Well, this clearly is not. So let's do away with the portal, and let's put all the documents in the docket so the public can review. Don't be doing this in the dark. Thank you. Will you be coming out with another report on this at 180 days? This is required by an operating license. Thank you.

Jamie Pelton

Thank you for that again. This is Jamie Pelton. We hold these meetings to the greatest extent possible in the public forum, and only those portions that require proprietary information are closed. As far as communications on portals, any information that is required for us to make our safety determination will be put on the docket. So any information needed to make our safety determination will be available for public review. If it's proprietary, it will be appropriately redacted. And with that, I just want to make sure that that is that's consistent with with our processes, with any licensee. We do follow the regulations and protect proprietary information, but anything needed for our safety determination is publicly available. And with that, I'll turn it over to Andy, who can address the other parts of your question.

Andrew Johnson

This is Andy Johnson. Regarding the 180 day report: tech specs require submission of that report. 180 days after the plant enters mode for its. Upon heating up from being cooled down. We currently we don't know exactly when that's going to be, but that was one of the very first comments we made at the at the meeting. Paul made the comment that we really would like to see the complete results of the inspections with this license amendment that's going to come in because we need to look at the holistic view of tube integrity with the steam generators. So that that was the 180-day report. As far as the hydrazine that you mentioned: the plants follow the ePrix, which is the Electric Power Research Institute. They have primary and secondary water chemistry guidelines. Uh, that's the standard guidelines that all the pressurized water reactors in the country use. And so they would be following those guidelines to maintain their hydrazine in accordance with those guidelines.

Jamie Pelton

The only other thing I will add, again, this is Jamie, is that any inspections that are completed by our regional staff will be available on our public website.

Sophie Holiday

So much Jamie. Thank you Andrew. Okay, so my last first round commenter will be Jan O'Connell.

Jan O'Connell

My name is Jan O'Connell. Why doesn't the Nuclear Regulatory Commission require Holtec to completely replace Palisades severely degraded steam generators? Palisades original owner operator, Consumers Energy, admitted to the Michigan Public Service Commission in the spring of 2006 that Palisades steam generators needed to be replaced. Yet the NRC has never required this, as during Entergy's ownership and operation of Palisades from 2007 to 2022. So it was never done. Why does the NRC allow severely degraded steam generators to be run into the ground like this? Given the potential for a reactor reactor core meltdown and catastrophic release of hazardous activity? Shouldn't Palisades be closed for good in order to avert such catastrophe risks? Wouldn't the more than 8 billion that's with a B and still counting a federal and state taxpayer funds requested by Holtec Holtec to be wasted on the unprecedented, unneeded and extremely Risky. Palisades Dinosaur Reactor Resort restart be better spent on safe, secure, clean, reliable and cost effective renewables such as wind and solar power. Energy storage. Energy efficiency. Wouldn't this be better for human health, environmental protection and the public good? Why does Old Tech's bottom line outshine the public um, interest, both in terms of pocketbook impacts as well as health, safety, security and the environment?

Phil McKenna

We answered the steam generator replacement question several times. Our safety purview is the integrity of the steam generator tubes.

Jamie Pelton

Thank you. And public health and safety and the environment are our number one. We will only allow authorization if it is safe.

Sophie Holiday

Thank you so much, Phil. Thank you, Jamie, and thank you for your your comments and your question, Jan. Now I'm going to go to Mr. Berlin. Thank you for hanging around with us, Mr. Berlin. You should be able to unmute your microphone.

Mr. Berlin

I was going to ask a question about the first license amendment request, but there's been so many good questions on the steam generators. I'd like to just talk about that first. First, I recognize that the purpose of the meeting was to discuss the license amendment request for the sleeves. For the record, I have no concern with the NRC processes that you'll be using for that evaluation, and I have full confidence in in the outcome. So please don't take any of my comments that I'm going to say now that goes towards that issue. But there were a lot of questions asked from the public and about what happens if there is a steam generator tube break? And I'd like to comment on that, because it really goes into one of the issues that we've raised in adjudication in other petitions that I'm sure that makes it unavailable for you guys to comment on in this forum. But let me just make a few statements. I was the vice president of nuclear power in the year 2000 at Indian Point. And I think one of the other persons recognized that there was a steam generator tube rupture, and I'm probably the only person on this conference call that's actually experienced the steam generator tube rupture. I was that we entered the site area emergency in the emergency plan, and I was the emergency plan director for that event. And I can tell you that the reason that we were turned out as well as it did, it never turns out well, but as well as it did is because we were able to do a rapid depressurization of the steam generators to reduce the pressure by blowing down the steam to the steam dump system. Now, what that means is all of that contaminated water was contained in the condenser. It wasn't released to the environment. Now, I'd like to make a comment and respectfully ask Jamie to to reconsider what she said when she was at asked, is there a direct at Palisades now? Is there a direct path from the primary coolant system to the atmosphere if there is a steam generator tube rupture? And Jamie said no. Palisades has a unique licensing basis, and that was referred to back in the earlier discussion on using revision 35 of the FSR as the licensing basis and design basis. And part of that is that the steam dump system that we had at Indian Point, by design, is not available at Palisades. So the alternative at Palisades is to use the power operated relief valves to steam the steam generators to the environment, and so therefore there will be a release to the environment. So everybody who is involved in adjudication and petitions, they know that this goes to my concern about using revision 35 of the FSR. Thank you.

Sophie Holiday

Thank you so much, Mr. Berlin, I appreciate it. Okay. Let me go to the next hand. Unless staff want to respond to any of that.

Ed Mcardle

Thank you. I'd like to kind of build on what Mr. Berlin said. And also on some others. On page 17, on the leak before break, there's some radiation monitors listed, which I think are kind of bothersome for the containment, of course. They have a chemical volume control charging letdown flow. I wonder what that is. A condenser off gas radiation monitor. So it's possible to get radioactive gases from the condenser, and then the steam generator blow... A radiation monitor there, too. So to me, it's kind of disturbing. Does this mean that there is a chance that to be radioactive material particles or gases released from these components? And radiation monitors that are throughout most nuclear power plants in the United States?

Sophie Holiday

We only heard part of your answer before the room unmuted.

Ed Mcardle

Okay. I was just thanking him for his comment and that the list of radiation, uh, monitors on that slide are standard radiation monitors throughout those nuclear power plants.

Sophie Holiday

Thank you. All right, Kevin Kamps, I see that your hand is up. So, Kevin, you should be able to unmute your microphone.

Kevin Kamps

This is Kevin Kamps again with Beyond Nuclear and also on the board of directors of Don't Waste Michigan, representing the Kalamazoo chapter, which is 35 miles downwind of Palisades. I think I have this quote written down correctly from Miss Pelton, on the NRC staff. She was referring to the San Onofre steam generator tube rupture in 2012, and the quote is did not result in a radiation release to the beach or the public. End quote. I challenge that, first of all. But it also implies that no such leak of radiation from a steam generator to break at Palisades could happen. That implication as Allen Blinn just clearly explained is inaccurate and false at Palisades. I would like the NRC staff to correct the record on that, please. I think Alan Blinn probably knows what he's talking about since he was a senior engineer at Palisades for many years. But I'd like to say a few words about leak before break. I would like to point back to the Davis-besse reactor vessel closure ead near burst in in 2002. It had been leaking, and both the company and the NRC did not notice the leak. That nearly caused a burst of that lid. The most serious incident in the United States since the Three Mile Island Unit two meltdown. And I would like to point to Indian Point, New York. Alan Blinn spoke about it. A steam generator tube rupture. I don't think that that was forewarned. It happened very suddenly. Byron, Illinois in early 2012. San Onofre two and three. Early 2012 steam generator tube ruptures where there was no leak before break. And the final thing I'd like to point to is that Palisades and Point Beach Unit two, according to the NRC itself, are the worst neutron embrittled reactor pressure vessels in the country. And that certainly could be a sudden failure of a vessel as opposed to a tube with no warning, no leak before break. And we heard it earlier that.

Kevin Kamps

These system structures and components of palisades that are on the brink of they're on the brink of breaking are interrelated. So if the emergency core cooling system is activated because of a steam generator tube failure, that could be all she wrote for the reactor pressure vessel. That could be the final straw that causes a through wall fracture on the reactor pressure vessel because of pressurized thermal shock. So these are the risks of radioactive Russian roulette that are being taken at Palisades.

Sophie Holiday

Thank you so much for your comments, Mr. Kamps. Okay, well, with that said, we have covered all of the hands that were raised during this meeting, including those that were on the teams web application or on the phone line. Um, as a kind reminder, we would love for you to fill out our public meeting feedback form. It's the only way that we're able to improve our meetings and the interface and interactions that we have with you. Um, so please take a moment and let us know what you think. So without further ado, I'm going to turn the meeting over to Jamie Pelton, the deputy director for the Division of Operating Reactor Licensing in NRA, to conclude our meeting and to provide us with some closing remarks for the NRC.

Jamie Pelton

Thank you to Holtec and Framatome for presenting the technical information that you shared this afternoon. Thank you to the members of the public for your engagement, your questions and comments. Um, again, safety, safety, security and protecting the environment are our that's our mission. That is our role here. And, you know, for additional information on San Onofre to address the last comment, you know, information is available on the public website. There is no measurable dose to the public. I misspoke on anything, I just want to be clear. There was no measurable dose to the public. Um, but with that, I will close the meeting. And again, thank everyone for their participation and comments. Thank you.

END OF TRANSCRIPT



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