Secretary US NRC
attn: Rulemakings and Adjudications Staff
Public comment on PRM-50-71
NEI petition for rulemaking 10CFR Part 50
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1952 Palisades Dr.
Appleton, WI 54915

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Today is my mom's birthday - so - Well, I have to say this because it makes me feel better today, even if it possibly annoys you — I want to dedicate my work on this today to my mom who died of cancer this April 25th. She had ovarian cancer which later caused lymphoma. She struggled many years from the results of treatment, and was a very brave woman. She never understood my work on nuclear issues and really thought it was a waste of time and effort. Maybe she was right. But, in a way, I work for her, because cancer is so related to nuclear issues. We all have family members somewhere with cancer — you probably do too. There are a lot of unknowns, and we need to proceed with caution. Thank you for consideration of this.

OK - I have just read this petition the 3rd time and I think the key sentence in it is this one: It says, "Early Zr-Sn alloys tended to use relatively high tin concentrations until long term corrosion tests showed that there was an increase in the corrosion rate as a function of time." Material interaction, especially concerning corrosion, is a major concern for spent fuel cladding in dry cask storage, transportation of spent fuel, as well as disposal of it in the future. This is why cladding materials, especially, need long term testing very carefully evaluated.

Template = SECY-067

SECY-02

Problems in "generic" materials use in dry cask storage have revealed that each reactor is different, each pool temperature is different, chemicals in each pool are different, pouring is different, etc. etc. etc. a lot of what happens to cladding is dry site specific. This is of at most importance to be realized.

What NEI proposes to do here is to eliminate site specific exemption proposals for new claddings because they say they don't want to spend the time to do this, nor do they want to spend the *50,000 (which is nothing really to such big utilities). They would like NRC to make a rule change allowing them to use new cladding materials generically, at any plant, if they meet some acceptance criteria. (which they do not describe clearly in the petition.) It should be there — in full. The public shouldn't have to go to the library to find Sec. 50.46 (b)(1) and (b)(2). This is crucial to the petition. Just what are they proposing the criteria to be? They need to redo this petition so it is complete and clear to the public.

The NRC says, in the petition "justification" part, that the text reflects the petitioners point of view "word for word". Why was that? Seems to me when NRC puts a petition in the Fed. Reg., they should also make sure any additional material necessary for clarity and completeness be added (and identified that it was, of course) to the petition. * Why wasn't that done? It should be redone now. *

Also a petition should not be under the heading of "proposed rules" in the Fed. Reg.

There should be a separate section for "petitions for proposed rules" — receipt of — (still under the main heading of "Proposed Rules" — so that petitions are clearly understood as just proposals for future rulemaking proposals — not as proposed rules in themselves at the time of the petition. To do it with petitions under "Proposed Rules" is confusing to the public and not clear. A subheading of "receipt of petitions for future proposed rulemaking" would do the job I think. Please consider this problem.

In the beginning of the petition there is a description of the petitioner = NEI. I want to know if vendors are NEI members? "Fuel fabrication facilities" are mentioned there. Does this include cladding manufacturers as well as companies supplying the cladding materials? Does it also (NEI) have cask vendors as members?

My understanding is that the accepted claddings of zircaloy, or ZIRLO, have been in long term use and testing. I would assume dry cask storage, transportation cask, and disposal casks, have been using these claddings as a basis for evaluation analysis. So how does use of new claddings affect these? This needs an answer.

Also how do the variations in systems at each licensee's reactors affect the use of new claddings? This seems very site-specific to me, and the proper evaluation should be a careful review under an exemption request to the NRC, for such a site-specific change to a new cladding

NEI contends this is causing "significant administrative confusion and a potentially adverse affect on efficient and effective use of NRC, licensee, and vendor resources." Just what "confusion", they do not describe. What is it? And once again I think their definition of "efficient" means less time and money spent by utilities in exchange for less oversight of public health and safety by the NRC.

Considering the past history of coatings reactions in dry cask storage under "generic" rulemaking, and all the surprises there, it seems to me only prudent for NRC to be very cautious in accepting new claddings at specific sites. These claddings may be "within" some generic proposal of NEI, but that is not enough criteria to accept them generically. Long term testing is necessary, and differences at each utility need careful consideration for ramifications in the cladding at that plant, as well as in future life in casks. This is all part of the whole waste disposal system. What you use in reactors now is proposed to be sent to Yucca Mt. eventually. That always has to be kept in mind. My understanding is that the plan now is not to include the cladding as "a barrier" at Yucca, but that does not mean it can't cause problems when the casks finally break down. This cladding is for the long haul and very important. To take away the exemption oversight for specific reactors use of new

claddings may have far reaching effects in the future.

NEI makes it clear that zirconium was considered "excellent" in corrosion resistance at 1st, but then it was found (when?) that impurities decreased this. So they looked at tin alloys in support of higher burnup fuel use. AS TM specification were a concern, as some alloys were outside these.

** So just how close to compliance are these new claddings NEI wants to use? The public needs to know this information. "Within" limits, is not ALARA to workers, nor is minimal difference from the limit to the advantage to public health and safety. Too often this is the case for new materials (with unknowns). We gain something the industry wants, but loose something good for workers and the public. Is this the case here?

BWR types certainly have more corrosion concerns than PWR — as NEI admits (Crud is a real problem all through reactor use, dry cask storage — unloading casks, transport, and disposal of spent fuel.) BWR certainly need different site-specific cladding evaluation, as well as to PWR. Each one is different.

Just when have Alloy A, M5, and Duplex (and any other new cladding designs) been long term tested? How long? Results? BWR testing? NEI needs to list references and dates as well as results of tests in a site specific exemption request. This is too big an issue to the whole waste system to call it "administration" as they do. It is not.

This reference to fuel assembly tests is of interest. It has been the practice of NRC to not require approval of these tests before placing them in reactors? Why not? This is to demonstrate performance of new fuel assembly materials. Certainly any new materials to be tested in a commercial reactor, in the public's backyard, deserves some NRC oversight before the test is done. Where is the use of "lessons learned" here? Tests could be going on with the same cladding at many reactors with no interchange between them of results or problem solving. This is where things become inefficient! NRC should know of these tests, and how they are planned to be done, before a utility does them. NRC should know the results and make use of them, especially if they differ from reactor to reactor — which things like this often do. This kind of lack of information exchange is what caused a lot of time and money wasted in VSC-24 problems. It was found that pool temp. and chemicals were site specific and made a great deal of difference in materials reactions. Let's not make the same mistakes with testing new claddings as were done with testing old materials.

I don't think that heating and quenching a cladding material is enough of testing for generic acceptance. Loss-of-coolant accident is not the only consideration that should be required. There are a lot more concerns here for long term cladding use in the

total waste system. NEI assumes "performance-based" tests for reactor use to ensure "adequate coolability" is all that is of concern here. It is not. For one thing, no dry cask has ever been unloaded. We don't know how cladding is behaving in different types of casks long term. We don't know how that cladding will react once put back in the pool, or in steam quench when unloaded. We don't know even if it will be transportable after 20 or 40 years in casks. These are all assumptions, not tests in reality. There are unknowns.

Conservation in cladding materials is of utmost importance. The public doesn't want new short term tested, just "within" acceptance criteria, materials in our reactors, at dry cask storage pads, traveling on our highways and rails, or in a repository in Nevada. New material is one of the biggest concerns. Utilities push for higher burn up fuel use, which creates a big change in all evaluations of the past using lower burn-up criteria in calculations. Then they act as if it is the fault of NRC and the public that high burn up fuel no longer "fits" a lot of the systems developed. Everything is supposed to be changed as fast as possible, with as little oversight as possible, and as cheaply as possible. This is to the detriment of public health and safety only to save the utilities money so they can use the fuel longer and purchase fewer casks. This is cutting corners.

Combustible gas control is a very important issue related to cladding. Hydrogen generation

created by materials interactions may not be the only surprise (long term) when new materials are used as "generic" (when they really are site-specific). Emergency Core Cooling systems are grave issues for the public and of utmost importance. The term "within approved cylindrical zirconium-based alloy cladding" is not good enough. "Within" is always a term that allows minimal meeting of criteria — not conservation. And "based" is an open-ended term that could include anything in the future. This is not acceptable.

Here we are trying to develop some sort of standardization and integration in the total waste system so that there is some long-term basis for dry cask storage, transport, disposal — and yet the industry continues to foul up any data and calculations by using new short-term tested materials. This causes more and more future problems. Already the VSC-24 can't hold new fuel they want to use, so Wesflex is proposed. But BNF decided, as I understand it, to put all their eggs in one basket — Transnuclear — hoping to use that design to transport Wesflex storage casks (instead of spending money for a transportable Wesflex design itself). So where are we in dual purpose casks? Where are we in coatings that don't cloud up pools so much that you can't see the fuel to load it? The history of cladding in waste problems and materials interactions shows concerns. This is not time for NRC to relax regulations because NEI forsees some exemption requests coming up in the

next 8 or 9 years"! So what? Lets deal with these exemptions on a site specific basis with full consideration of the materials that are new and the specifics of each reactor in which they will be used. The public needs NRC oversight on these exemptions. This is no time in the history of nuclear waste for NRC to let licensees take over their job and cut out public oversight and documents in the PDR. Seems to me that is the big push by NEI. If NRC needs more staff and funding to do the job right, to protect public health and safety, then Congress needs to know this. It should not be up to NEI to propose you "cut corners" in evaluations to reduce your "burden". (It is really their "burden" in time and money that is their concern as we all well know.) I, for one, as a ratepayer, would rather pay more, (and as a taxpayer for NRC work) — and have public health and safety protected conservatively — not just "within" limits which can mean often "right to the limit". This happens over and over again, conservatism is reduced as the industry tries to find ways to cut corners. It is not good, considering the timing, of the industry, expecting public acceptance of these spent fuel rods, and cladding, on their highways and railways near their cars with their families, and near their homes. Public acceptance will only be gained by conservative criteria that is set for their protection — not criteria to save the industry $50,000 here and

there. One mistake in a new cladding acceptance and use, on a "generic" basis, will cost a lot more money than that! You saw the time and money spent on hydrogen production problems in the VSC-24 cask. You saw the time and money spent on seal weld flaws in structural lid closure welds. Do we want to go through situations like that again because we let materials and procedures be "generic" and lack the site-specific oversight necessary? Why is NEI constantly asking to get rid of amendment process, exemption process, etc? It is obvious they want less oversight of change. But "changes" are what lead to all the NRC staff time and money wasted on industry blunders in the past. Changes to new materials and procedures need the maximum of oversight — not the minimum. So, please keep your exemption process and please keep close watch on cladding materials and long term testing of them at different sites. Keep the information flowing on problem solving and "lessons learned," and let the public be involved. We are the ones that will deal with problems in our backyards in the future.

Thank you for consideration of these concerns.

Jason Shillinglaw