

July 24, 2009

Cover letter:

Dear Members of NWTRB,

Thank you so much for the transcript. As I read it, I always feel like I'm right at the meeting and learn so much. I write my comments as I read along, and I know some of it is repetitious. Sorry for that. Maybe nobody ever reads my comments anyway. I am really interested though.

I finished my notes yesterday and woke up this morning realizing that right now they are loading Nuhoms casks over by Lake Michigan in Kewaunee. That was in the transcript. I know that the documents long ago talked about that RAM transporter that is used at the plants to shove the canisters horizontally into the concrete modules. A concern was that it was leased and went from plant to plant. What do you know about this? I really appreciate your important questions on retrieval. Will hot cells be there? Will dry transfer equipment? Wet transfer room in pools? How would recasking or overcasking be done? — (and I add – how do you get shims out of seal welds? And if the ceramic tiles don't work because they were crumbled over time, or even at impact of the canisters being set on them for the 1<sup>st</sup> time, could the canister be rusted to the inner metal concrete wall? (That's a VSC-24). Or in Nuhoms, -- could a canister rust to a rail it sits on over 100 years? Removal and recovery is all important – especially in an emergency, in a full cask array, on a pad (or two pads) --- maybe full of lots of different cask designs. Can a plant even handle more than one? How long does just recasking one take? Timing may be important. How many casks will be in Wisconsin at Kewaunee and Pt. Beach in 100 years? What if a pad, full of casks, has problems? Think of all that can happen and keep asking those good questions, Thank you!

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Public Comments to all Board Members of the U.S. NWTRB on transcript of Summer Board Meeting June 11, 2009 from Fawn Shillinglaw:

Page 21 line 19

Dr. Garrick sure is right when he says, “It makes no sense”. I mean how can DOE continue the licensing process when the administration has said, “Yucca Mt. is unsafe.” – Where is the validation? How can we continue spending taxpayers’ money to have NRC and DOE work on a site no longer acceptable? And what are they licensing? Seems to me the nuclear industry wants to build new plants, create MORE radioactive waste, pile up the casks at plants along our waterways with no answer to the disposal problem after all these years. They are hoping for a licensing acceptance for the future, or what? Does that mean an NRC acceptable licensing plan could be transferred to the Wolf River Batholith of granite in Wisconsin or what? That seems illegal to me to go ahead with the licensing procedure at all now. It should be stopped. As you said, experts “are leaving”. (The ship in Nevada as they know it is sinking). Can’t the Board get a clear halt to this now? The budget should be used for the Blue Ribbon Panel on alternatives, not licensing.

Page 28 line 12, 23-24

What is this “licensing board”? Very strange that they accepted all Nevada’s safety contentions and DOE and NRC opposed them all! What’s going on here? Is this all political? Is there an understanding by the NWTRB about this? Should be ---- get some answers. Ask the needed questions.

Page 38 line 15

“DOE has offered – no actual plan for retrieval”. \*\*This has been a concern I have been asking about all along. To base the whole safety on drip shields (put in 100 years from placement) means we will all be dead by then. I always remember a worker at Pt. Beach

Nuclear Plant (when I asked him when the casks, on the pads already, would leave the site — he said, “Well, I won’t be around then”. He might as well have said “and I don’t care either!” We need to solve the waste solution BEFORE creating new plants and more waste by relicensing old ones. Wind and Solar power are workable!!

Page 66 line 20

He’s talking here about “consolidating (storage) into one or a few centralized interim storage sites”. I mean this is going backward. The history is that is what was tried 1<sup>st</sup>. Those poor guys tried everything to get just such a place accepted someplace and not one place in the U.S. would accept it. Then they bribed the Native Americans (which I think is awful). Above ground storage is just like full pools – it will get filled, deteriorate, need replacing, all be in different casks needing different unloading systems and transport systems etc. – We are starting the game all over again, yet making it sound like producing more waste at new plants will help global warming. This is just false advertising. Until the waste problem is proven to be solved, no more on this earth should be created. Doesn’t anybody care about our grandchildren? There are alternatives to solve our energy needs. It gets to be all about money and greed. Ask yourself that question – why create radioactive waste at all? Think of the total amount of money wasted all these years on this issue since the dawn of nuclear age.

Page 71 line 6

He refers to dry cask storage as a “very well proven ‘technology’”. I disagree. Until I see some of those casks stored at Pt. Beach in Wisconsin all these years, actually opened, and the fuel actually inspected and actually accepted for transport and transported, don’t tell me it’s “proven”. I want to see the real thing time tested. And don’t forget — the longer until a repository criteria is set – and a cask for disposal is in final design, you will find all sorts of casks in use at plants – just as unstandardized and dis-integrated as it always has been. The pools are aging. The plants are aging. And each time a TAD or a cask from the pad needs to be opened or filled or replaced, the plant schedule is interfered with. Look at the total picture. No — these casks can’t stay on the pads forever. Our 1<sup>st</sup> casks were certified for 50 yrs. I think, and not transportable, some are 100 yrs. – but of course

that's not been proven. What if they deteriorate faster or have problems in harsh Wisconsin winters, and become brittle or the cladding falls apart, and you have powder in there instead of rods? There are still a lot of unknowns NOT TIME tested. Something will not be perfect. You know that. I get tired of the assurance of the industry to the public when their insurance won't even cover it. And terrorism at a plant with a full pad of casks is even more of a problem to protect. This all costs money. And where will the waste casks go? All that low-level waste has to go someplace too. Whose backyard? What state will we stick with all this now? Wisconsin will not take it. We've proven that before. Once you start looking for sites for any of this, operation will rise up again just as it did in the past. You already have 12,000 metric tons of waste at 44 plants in casks with no place for disposal!

Page 73 line 13

To go forward with TADS when you don't even have a site or a final disposal cask design for that site is wasting money in hopes that the TAD will eventually be used. Maybe it won't! You don't "design" a repository around a cask! (The cart before the horse again!) Industry just wants it out of their backyard. It should stay on plant sites until they have a proven answer to the waste problem – which they certainly do not.

Page 76 line 2-3

"There's a presumption that they would get them" (transportation license) before we have to move the fuel off the site. Well, our vendor promised that eventually our storage cask would be transportable too. Not as far as I know. Industry would just love to have DOE come with free TAD's and remove fuel from the plants. But until we have a site, there will be less and less standardization and less and less integration. Same old problem we have been complaining about from the beginning. And you can't design a disposal cask when you have no site. I predict a lot of reloading over the years. The plants will age, pools will age, casks will age and need replacing. Will they really last 100 years? Nobody knows.

Page 79 lines 11-12

He keeps talking about “interim storage” — “centralize and consolidate” — and larger casks. The push for this was tried – MRS – Monitored Retrieval Storage. Nobody wants it in their backyard and now any more than they did years ago when the big push was for the same thing. History is repeating itself here.

Page 79 lines 21-22

“DOE reimburses them with taxpayers’ money”. “It’s a huge liability for the taxpayers”. He’s right! The Industry made the waste. Before they make any more, they should solve the disposal problem, and they are making a lot of money when the taxpayers are in hard economic times now. This is not right. We should be paying for electricity not for radioactive waste disposal all those years. The economics of nuclear energy just don’t work.

Page 82-83 lines 16-18

He calls dry cask storage a “guaranteed growth industry” and says “we believe that the technology is well established to accommodate that growth for several decades, hundreds of years.” Now it’s not a hundred years — it’s hundreds of years above ground— where? And who pays for all this monitoring, replacing casks, etc.— the public that’s who. Industry would love to build lots of new plants and have the waste just whisked away to some other above ground site they don’t have to be responsible for. How easy for them, and how awful for the public!

Until you have a disposal site, you don’t know the design of the disposal cask suitable for the site or how many assemblies — burn-up credit etc. to predict a cask can accommodate. You cannot build TAD’s or anything else unless you expect to unload them all and reload again at the repository and all your dual purpose and multiple purpose casks may not meet the repository criteria even for above ground interim storage at the site. Lots of unknown here again.

Page 101 line 19-20

The military vitrified waste is calcine and he says, “I am told that this is calcine waste will outlast myself and most everyone else here in the room”. Is that supposed to make me feel good? What then? And this calcine hasn’t been time tested. Will there be problems? Nobody knows!

Page 105 line 25

He refers to the “Idaho Settlement Agreement” that agrees “to have all the fuel out of Idaho by 2035.” And just where this is supposed to go “out of Idaho”??? Dream on....

Page 107 Line 12-13

He says the focus is to get the high level waste at Hanford vitrified “because of the risk being posed right now by the waste being stored in liquid form in the underground storage tanks”. Yes – I’ve read about that – I understand there is such a mix in some of the tanks, they don’t even know what all was put in some of these places years ago. A dangerous mess! Because nobody looked ahead to the future problems. And we are doing it again now! No repository, no disposal cask, yet make more waste at new plants. Make no sense to me at all. Public at risk!

Sounds to me like these logs are being designed for a Yucca Mt. repository even though they may go someplace else or no place else at all. This needs to be re-evaluated, before they go ahead and design and make vitrified logs that may not fit a new repository site at all. They should be vitrified for an above ground storage site as that is where they will be for a long time – maybe forever.

Page 132 line 24

On site storage “we’re pretty much looking at later than 2066, probably very much longer”. This is rather scary considering how much more safe the waste was touted to be “offsite” and all the promises at our hearings about how the casks at Pt. Beach would not stay on the shore of Lake Michigan in Wisconsin. We knew, when the casks were certified for 50 years, that it was going to really be a problem in the future. We of the

public in Wisconsin did not want “storage only casks” and yet we got them anyway – and the cheapest ones from a vendor that made a mess of manufacture! And now we are stuck with that bunch of early casks here! It was all done in a rush – even NRC certification of the 1<sup>st</sup> generic cask – we got all the problems – even an explosion in one – and the vendor, the utility, nor NRC, could explain it for quite a while. That does not promote public confidence in dry cask storage here, and nothing has even been transported yet – but we have seen the word “barges” quite a few times. On Lake Michigan? That would be safe? I think not. And who will pay for all this our future years. The ratepayers and taxpayers that’s who – that’s us!!

Page 133 line 10

And in no way do I want the “liability” removed from the utilities. That takes them off the hook and puts liability on the government – that’s us paying for that too! We pay the utilities and we pay the taxes – we should have a say in all of this.

Page 133 line 19-20

Exactly right. An MRS (Monitored Retrieval Storage) was rejected in the 80’s because it would be a “de facto repository”. And that has not changed. That’s just what it would still be. And the term MRS is misleading – “retrievable” means what? You keep recasking forever? Who would pay for all of this? Nobody would even consider allowing that then, and should not today either. I remember all that mess. So I was amazed when it was going to be allowed to site all those casks on the surface at Yucca Mt. The fear being it would never actually go underground.

Page 134-135 line 13

What is the status of the Private Storage in Utah? If the promised time limit was 20 years, what was that based on? Was that a promise to the Goshutes? If so, it was a lie! And the owners are lucky they never got a lot of casks out there yet. Is that the case? How would the waste “go back where it came from” in 20 years? What a farce!

Page 136

Well of course, higher costs “of reprocessing and recycling” plus waste still left to dispose of anyway certainly would not make the public want the utilities to let all their waste have “this place to go to” – That’s an MRS in disguise really. And certainly “nuclear weapons proliferation” in this age of terrorism is still a great concern.

Page 137 line 7

You know, this high temperature gas reactor idea of General Atomics, or even a deep burn modular helium reactor, has not been time tested and will have problems and waste. You can’t count on that as your solution and keep creating more waste nobody knows what to do with in the future. That extends the problem, not the solution! More Promises!

Page 138

Pipe Dreams! I mean really, why even mention subsealed, space disposal, deep boreholes in sheets. Who would ever consider any of that crazy stuff. That’s the kind of think that comes back to haunt you in the future — and underground disposal will too. Why do you think all these old oil tanks we had in people’s yards and gas tanks buried at gas stations – all that underground stuff polluted water and land – buried waste does that over time. We know that. And we are already finding “space garbage” and “undersea garbage” problems today.

Page 141 line 17-18

You know, I don’t think anybody believed that a 2<sup>nd</sup> repository wouldn’t be needed. I certainly didn’t and kept asking about it over the years. The “hush, hush” about it just was in hopes opposition at those sites would disappear over time. Well, a lot of us may be grandparents, but our kids are even more concerned about these things nowadays. More is learned and known about polluted sites. Witness the Superfund site of PCB’s in the Fox River in my backyard. Too many people have knowledge about past dumping sites and health ramifications. The public is much more knowledgeable about all these concerns now. No site will be voluntary or easy—you know that.

Page 142

Congressman Udall was very correct when he said, “the potential host states no longer trust the technical integrity of the DOE’s siting decisions”. And we don’t now either. To just “name” Yucca Mt. was completely wrong and we all know that. It was a huge mistake to force that on Nevada. We knew it then and more so now. No state will trust DOE anymore than Nevada did. Certainly not Wisconsin!

Page 143 line 17

I remember the Nuclear Waste Negotiator – I think there were several. As you say he was “empowered to offer literally any inducement” to get a state to site an MRS. No takers. This was an outright bribe! What an awful way to do business! And it is proof about how the public is duped into getting this radioactive waste in their backyard without any real input from them.

Page 143 line 22

So the NWTRB was established “to address the issue of lack of trust over DOE’s decisions”. That’s pretty blatant—not just oversight— but to address “lack of trust”. I sure hope we can trust the NWTRB in the future. It is so important that you all remain trustworthy. These are grave decisions you make, and very necessary questions we need to you to ask. We depend on you.

Page 144 line 16

“Nothing has succeeded” he says as he reports on the historical failures to find a site for the waste to go to. Why do you think that is? I mean really, give this some serious thought. Don’t you think it’s time to re-evaluate nuclear power and stop making more waste as soon as possible? Shut down the old plants and don’t allow more. Isn’t it time for some common sense? The world’s getting technically smarter all the time. Countries are trading and dealing with each other all the time. There are “villains” all over the world in crazy disagreements over all kinds of things in their own countries or with other countries, that are willing to use plutonium if they can get it. Don’t think it can never happen. Sabotage and terrorism is getting more and more prevalent and when one

technical device is made, another is made to displace or defend or counteract it. The world is getting “smaller” and countries are more involved with each other as we travel by planes so easily. All these years radioactive waste has collected all over the world with no solution found or time tested to dispose of it. Where is the sense to make more of it? Human beings are going to get so much out of touch with the reality of the situation that it will be just as Pogo said, “We have found the enemy and it is us!” Don’t you ever worry about that? (Oppenheimer did.) The history is all clear, and yet it is ignored as if we learn nothing from past mistakes.

Page 163

In the General Atomics proposal there is 1,498 tons of waste coming out. “Where will it go” is asked. And the response is “into breeder fuel, or what ever!” And “storage for future use”—“of course, after 2100 you would think that they would have figured out the future use by that time”---“But (it goes on to say) the uranium is always a big question mark. It’s another of the technical issues that hasn’t been solved”. This has always been the problem--- promises to resolve all the issues in the future – we heard that from our cask vendor numerous times—even to the point when there were technical issues with the cask design to be solved after it would be NRC certified. I was outraged by that at the time. People do follow the documents you know and do know when they are being treated as “stupid” about all of this, as if it is all too technical for them to understand. Well, it isn’t, and often common sense goes out the window—things get out of touch with reality in computer models.

Page 174 line 13-14

I’m simply glad to see they opened a cask and studied the contents. Was this after 15 years storage? It says, “This particular fuel under these conditions”, but does not say what the fuel was or what the conditions were. Where was this Castor V/21 cask (it says “or 521 cask”) at Idaho. Was it always at Idaho? I am not familiar with this cask. How does it relate to all the numerous other cask designs in use on pads at plants now? How does the fuel relate to fuel in all these other casks? Were the chemicals in the pool (the fuel was originally stored in) the same at all pools? – I think they vary a whole lot. You

see the history of all these rods in very different at each plant, as well as cask loading and storage. Where is the standardization and integration that opening this one cask proves anything about all the other cask designs, pad placement configurations, loading processes, weather conditions of storage, transport method to pad, pool conditions, reactor problems etc. etc. etc. — can you really expect the same thing to happen in casks at all these different sites? I don't think so. It has been the problem all along. We get back to the “can of peaches” again. Open the can and see if they are rotten over storage.

Page 174 line 21-22

“There was some oxidation there, maybe a little bit of crud spilling, but essentially no visual signs of degradation”. Is 15 years of this going to be extrapolated to 120 years of safe storage promises? I should hope not. Are we going to just recask those things over time like a set of Russian dolls and never look inside for fear of what we may find?

Page 176

Concrete... Oh yes, I remember that the concrete “oggregate” (I think it was called) that, was wrong on our first casks, and something about the ? being put in wrong, and the tops of the slots for the assemblies — oh it was something like 97 problems that were on a list of NRC that they discussed with us at one time— a real mess! So you see why we lost confidence right from the start. So many things can be done wrong! The devil is in the details! and these won't show up at first, but over time can cause big problems. Nobody can really say if dry cask storage will be safe for 120 years – where is any real proof? And at 1<sup>st</sup> our cask could be moved at the pad if (there was a problem) at 0° then they “upped” that to I think it was 32°, they said it was “because of worker comfort” at one of our public service community meetings, but we had the document that said it was because of a brittleness concern. I mean, in Wisconsin winters, a cask needs to be safely moved off the pad in below 0° weather—we often have that here and nobody has ever addressed the wet to dry cycle that has concerned me for so long. Wet fuel in the pool, dry in the cask, wet in the pool again to put in a TAD or transport overpack—(horizontal [from vertical storage] on a rail car – bumped across the county – then maybe wet in a pool again and dry in storage on a pad at the site—what happens when dry fuel from 120yrs storage is made wet again if it needs to be unloaded in the pool because of a

problem? The fear is unknown that we don't even know to ask about – just like the reaction with the painted surface in our cask to create flammable hydrogen that nobody expected! Don't expect us to be confident of 120 yrs or more storage or pads.

Page 175

Embrittlement is a concern. Oxidation is a concern. Temperature changes are a concern. Degradation of reaction shielding always was a concern too. And I have always been concerned about CRUD—blisters on the cladding and hairline cracks. As the surface dries out over a long period of time, what will really happen to cladding? I have always worried about the cladding. And the thing is—what will happen to this brittle dry stuff as it bumps along in trains and trucks through our cities in future transport? Will it be found that after really long term storage, it won't be able to be transported at all anymore? Then what would be done? This was always a concern, and I felt the reason why utilities wanted it off their land as soon as possible. Once it is transported off their site, then the public has to deal with further transport. Will it really be possible after 120 years? Nobody knows; nor will we know. A lot more study and thought needs to go into this. That's why it should stay at the plants where it was created, and with the people who used that electricity and allowed those plants to be built. It was all too easy to say --- “ship it to Nevada”, or sell it to the Native Americans with bribes- just get it off the plant properly and out of their liability. After all — they don't want it either, any more than any place else does.

Page 180 line 11-12

“Some have identified helium buildup inside the fuel rods, as we continue to have alpha decay over many years, might become an issue one day”. Well, of course, gases create other gases, chemicals create other chemical reactions, materials interact over time, to form other materials. Too many unknowns. Nobody ever intended the waste to stay in those casks at the plant for 120 years.

Page 181

Well here it is—just as we expected years ago. He talks about, “Canning, repackaging, or over packaging”. They just don't ever want to open those casks and know for a fact what

has gone on in them as far as degradation. Over packaging cannot be an option if this waste is ever to go in transport. You can't rely on the utilities telling what is really in those casks. They are going to want to get rid of everything in those pools. The monitoring and inspections will cost money and certainly be more than NRC can handle in the future. Who is going to pay for all this I ask once again?

Dr. Garrick says we need to change “the will of the people!” The only way to do this is to close the plants and open no more and make no more waste. You then have a fixed amount to deal with and I think the public would help find a solution. Until you stop making more waste, the public will not accept it any place. In your heart, you know that. History has proven that. Accept it, and let's move on to safer renewables.

Page 181 line 19-20

“You've got to consider whether you're going to transfer your fuel in dry fashion or wet fashion, how are you going to do that?” Well, that has always been unanswered. Is it possible to do it in dry fashion at the plants? Costs? Feasibility? Methods tested? We need to know this now. Who is working on this? The Board should look into this. These pools are aging!!

Page 184 line 4

I'll tell you it's pretty scary to hear Dominion Resources which owns the Kewaunee plant here in Wisconsin, say they hope the long term storage will not be at the utility. That's why we didn't want it there on the shores of Lake Michigan. It is a pipe dream to think that can site on MRS now anymore than they could in the 80's. It won't happen. I go over to the Kewaunee all the time bird watching. I drive by the plant. They have huge rocks place all around the perimeter—I suppose to keep a truck bomb from ramming in there. I would think sabotage by a disgruntled employee, or helicopter, or boat, or whatever, would be a terrorist option. We looked into everything when the casks were put on the pad at the Pt. Beach plant just down the shore from Kewaunee. Never should that much spent fuel have been allowed to congregate along that small stretch of lakeshore. Door County in Wisconsin is the tourist place of the state – people come from all over the

county to vacation on the peninsula there (My folks lived there) and now Hwy 43 up the Lakeshore and Hwy 42 are used more than ever by people coming up from Milwaukee and Chicago. All the cities along the shore—Sheboygan especially, are becoming more and more tourist attractions and if the waste is transported, it will be going on busy roads over there. Accidents will happen in storage and in transport over 100 years. It is not a perfect world and this is untested technology.

Page 184 line 23

He wants not to put a number on it, but he thinks “beyond 100 years”. Just what we expected – that once those casks were allowed to be loaded, they would not leave the state for a long time, if ever. That’s way back when dry cask was a new technology at Pt. Beach in Wisconsin, and now you want to build more plants in Wisconsin and create more waste. I understand that people in Madison at the University are pushing to get rid of our state law against allowing any new plants until the waste problem was solved. An MRS is not a solution now any more than it was in the 80’s. It’s just getting it out of the plant’s liability. That is just plain wrong to do and a lot of people here know it.

Page 185 line 16 and 25

These seal failures letting water in at the site specific casks at ? show that problems can and will happen. I’ve never heard of “Siloh Seal Systems”, have you? These were used to replace the problem ones. These cask designs are very old. Will they last 100 years? I doubt it. I wonder what the replacement costs were.

Page 186 line 12 and 25

So when the low pressure in the casks was discovered, they just removed the outer lid – how do they know what happened under the 2<sup>nd</sup> lid then? What is the “polymer resin shielding” on the outsides of these casks? This just shows the great variety of designs out on the pads all over the country and the many many different problems with each design that can and will arise over 100 years. No standardization. No integration. How many times did the public complain on the lack of these and the problems that they will create in the future? Can a plant even load, unload, recask, whatever all these different designs

in an emergency? Nobody is talking about predicted pool problems. That needs to be addressed now too.

Page 187 line 13

Do you think “opportunity” inspections for corrosion, when a cask is moved, or “quarterly” data evaluations of dosimeters around the pad are adequate? I sure don’t.

Page 187 line 22

Yes the Nuhoms cask is horizontal and the ramming transporter (or whatever it was called) when I looked at that design long ago, any way I remember something about these being leased and not always on site. Tipping over 100 year old waste can be tricky on the insides I would think. I’ve always asked about that—assemblies vertical in wet pool, horizontal in transport or storage and dry – then vertical on a pad at an MRS or repository pad – Then horizontal on a rail down into the repository. What testing has been done on this repeated tipping over of the casks and assemblies? What can happen to the insides that get jolted and bumped about in these procedures? After 100 years of storage? Think about it. Always have worried me.

Page 188 line 12

So they are loading Nuhoms with “higher heat” rates now at Kewaunee. Will another pad be put there? It’s becoming a “de facto repository” right at the plant!

Page 190 line 9

I am not comforted by a restraint necessary here—that bar of steel. The thin walled casks are slid into these concrete modules. It may make it easier to put lots more waste on a pad, but it still doesn’t sound safer.

Page 190 line 17

There certainly should be “an ISI inspection program for those welds on the cans”. Why isn’t there now? A lot can happen to those welds over 100 years in Wisconsin freeze—than weather. And ice and snow can cover vents. There was a lot of concern about wasps

nests too. When the sun hits a large amount of snow on the top of a module or cask—even in winter – it will sag, drip, melt, and freeze again. That covered vents on the modules at Fort St. Vrain once if I remember right. It's a big concern if it happens to a large amount of casks on 2 pads all at one time, isn't it? We have blizzards and ice storms here and there is a lot of lake effect snow along the shore.

Page 193 line 19\*\*

These Nuhoms casks are fabricated in Japan? Why are we buying these things and shipping them from Japan? Cheap labor? Does USA inspect these plants or what? How is our NRC involved? Sounds ominous to me. If there are defects, do you ship them back to Japan? Do they come fix the problems? Are the ones in Wisconsin from Japan?

Page 194

Well it is almost the last week of July 2009 right now and you are now loading Nuhoms at Keewaunee at the 1<sup>st</sup> of 2 pads. 120 years, and you say you don't want the fuel on site for that long. Why not? Isn't it safe? Does it cost too much? You don't want it at the plant any more than the public in Wisconsin does. We don't want it eventually buried in Wisconsin anymore than we did at Nevada either.

Page 194 line 25

Yes, you have a transportation problem + a burn up concern. And he says, "Some of the fuel that we're currently putting in these canisters for storage may not be acceptable for transportation, because of heat load perhaps one reason but also for required hold down capacity". Then why on earth are they using them? Because they can't fit a lot in a small space? Because they got a cheap deal from Japan? Why? And they want the licensing changed. They want to change the rules to meet their wants and just load these in hopes NRC will change and give them loopholes and safety goes out the window or is mineralized once again. This is just plain wrong!

Page 195 line 12-22

I just can't accept this. They go ahead and load 33 kilowatts – not workable even at Yucca—and then they say a “long term aging facility” needs to be associated with a repository because of that. No—that is an MRS and was illegal for good reason. “Aging” is “storage”. We all know that—“weasel words” again.

Page 196

“Possibly even storing fuel in canisters that have known cladding defects”. And how will these be transported after 120 years on a pad? How handled in an accident or unexpected problem? Boy, are we way out of the original ball field now!

Page 198 line 12

They have resorted to storing higher burn ups and “much shorter cooling times because there's no room in the pool to let the fuel cool.” Not a good situation!!

Page 204 line 17

Well, if you can't visually examine the parts on the rails of the Nuhoms casks, isn't that a concern? Is that metal on metal? Remember the ceramic tiles needed in the VSC-24 so the metal on metal inner canister and surface of concrete line (metal) wouldn't rust together over time are keep the canister from being lifted out? Can the canister in the Nuhoms module rust, or adhere, to that rail in there over 120 years and cause removal problems??

Page 205

She says “to assume that we can utilize the systems that were only designed for 50 years, for an extended period, up to 300 years, is really not the best solution”. Where did this 300 years come from?

Page 205 line 15-16

She makes it sound “Oh so easy” when she says, “We can always replace the casks or the over packs or refurbish them as they degrade”. Come on—an aging plant, a full aging pool, pads full – and this can all be done easily? You ain’t talking about a few casks now—you placed a full cask array on several pads with high burn-up fuel and a lot of problems can arise there over time. Can a plant deal with even 2 casks at a time? Or even one fit into the plant schedule? This is just asking for trouble. Look at it realistically.

Page 206

EPRI has not looked at 100 years. Vendors’ analyses always need checking. They are selling these casks after all. They are not going to tell you the future concerns. They will be long gone in 100 years. Remember the shims in our welds?

Page 207-208

But, can you depend on that helium to always be there over 100 years? Seals and welds are the **\*\*Achilles heal here**. Welds are different material, they get ground down. (Have different stresses.) And certainly “improper installations” have happened, and will happen again with cask designs always changing. And sub-contractors are not used to dealing to nuclear specifics. We saw that in fabrication of the VSC-24 casks over and over. Problem after problem.

Page 211 line 10-11

Pinhole leaks, blisters covered by CRUD, hairline cracks – these have always been public concerns for the cladding. You loose any helium and you are in trouble.

Page 218 line 11-12

Let’s remember that: “You would not burden future generations with the nuclear waste”.—not with ours. Think about that will you please. Don’t you care anymore? It seems to me this era is full of more greedy fiascos than one could imagine. Trust in anybody or anything to be done right – technically right, morally right, etc. lacks in every area. It’s “I’ll get mine 1<sup>st</sup> and the heck with the rest”. Why is that? You do have to

consider society and vendors aims and utility aims and future generations. You do need to do that. Can we trust you?

Page 218 line 21-22

Well, thank you Dr. Duquette for saying it--- Yes the utilities demanded the repository and said “they can’t store this stuff on our sites for too long.” Now it’s—“100 years with no particular problems”—a real change in tune. The public sees this clearly.

Page 220

And yes—the “element of surprise”---“the Bridges sometimes do fall down”--- a cask has an explosion in Wisconsin at Pt. Beach and nobody knows why! There will be surprises. You can count on that. It’s only human nature to make mistakes and there are unknowns.

Page 223

Isn’t anybody concerned that all these casks are on pads near water? Lakes and rivers – why Palisades casks are practically on the beach. A lot of concern was given to the casks along the Mississippi. Our lakes and rivers may change a lot as climate changes. Why Lake Michigan has fluctuated a lot over my 65 years here. And if we have ice cap melts or floods—whatever—baseball size hole—(We had that here a few years ago. Astounding—windows broken all over the place). Freak storms and unexpected water levels are becoming a big concern. Can you predict all this for 100 years? How? I find that hard to accept.

Page 232 line 13-20\*\*\*

Here is the 1<sup>st</sup> bit of real information I see of great value in this transcript. A look at reality. He says that “at high burn up fuel, it has a rim structure on the outer surface of the pallet that could be anywhere up to a couple hundred microns thick, where the fuel has restructured so the grains are essentially sub micron size. We don’t have any idea how that rim area is going to behave in terms of when the fuel fractures, in terms of what happens in disposal of that rim area”. Now this is the true nitty gritty of which the public, members of Congress, vendors etc. do not know about or understand. This is the type of

thing that can cause unexpected problems. – Like the painted coating on our Pt. Beach cask. There is way too much computer modeling, and way too little actual testing and research on the details of storage for 100 years at the plants and transport after that is the really big question to be looked at carefully. 100 years is a long, long time. We will all be dead by then.

Page 238 line 10

I'm so glad Dr. DiBella asked this. What about the pad evaluation? Soils evaluation? For 100 years? You know, I think it was at Palisades, they built the pad and the public realized they didn't do the soils evaluation—they did it after the pad was built. So with limited space for pads at utilities—once a pad is built—as many are—how is the pad and ground evaluated—say for a full cask array of Nuhoms casks—when the pad was evaluated at 1<sup>st</sup> for low- burn up fuel – say in VSC-24 storage only casks? Who will make sure this is evaluated correctly over time as cask designs change and utilities put a wide array of different designs on the same pad. They want to put as much fuel as possible on each pad. “Shine” has to be calculated from one cask to another. How is this done with different designs? How far apart should they be? What about air flow from the casks in the vicinity of others—heat dispersion if some are taller or block others – I don't know—you ask the questions. Try to picture a lot of different cask designs – different weights, different transporters, etc. used over 100 years on the same pads. How big, how strong, made of what material etc. etc. should pads be? Will water puddle at the bases – how high should the bottom intake vents be in case of deep snow? How fast must snow be cleared from a full pad of casks etc. – Let's look at everything Mother Nature can throw at these casks – say in Wisconsin winter and spring over 100 years? What can you think of? Please think about this. Look at the real thing. A full pad (or two) is a lot.

Page 238 line 20

“The pad is not safety related.” Why not? You know that the pad at Palisades, years ago, was evaluated using the plant environmental impact statement—but the plant was on bedrock and the pad was on sand – one of the NRC inspectors himself was really upset later on, about this when the public revealed this was what had been done. What is the

criteria for pads for all these different designs for 100 years – is there any? Ask about this. And what about long term evaluation of the ground too? How are pads inspected? (After 10-50-75 years etc?)

Page 239 line 23-24

Good thinking—It is a geological issue if the pad gets into a threatening situation and you need to move everything. What could cause that? A sink hole that cracks or tips the pad (and the casks) —crumbling of concrete not built right in the 1<sup>st</sup> place? A flood of some sort – say rapid snow melt that blocks lower vents? I don't know – what could happen under a slab of concrete over 100 years? Animals (attracted to the heat) building tunnels under there? Is that far fetched? I don't know. I am concerned about snow & mud & ice. Maybe the tops of the casks should not ever be flat. Or maybe pads should be in elevated places---?? What? Flat roofs are always a problem in Wisconsin snow.

Page 241 line 9

Yes—we were concerned about condensation too. What can happen over 100 years as fuel is cooled? All this can affect transport in the future. That transport needs to always be considered. It is way too often forgotten. And that is why no MRS should be allowed. Once then, the casks may never be able to be unloaded or full transported. The incentive to get it off the utilities land is great. The MRS idea always was and still a “de facto above ground repository.”

I'm always amazed at the end of these meetings that there are a few, if any, real public questions asked. Where is everybody? Well, as always, I'm thankful the Board is still here and asking questions. It is so important that you know the history are still involved. It's a long haul! Have you ever considered creating no more radioactive waste and how that would affect the public will to help solve the problem?

Fawn Shillinglaw