

U.S. Nuclear Waste Technical Review Board:

I really appreciate your having my comments typed and distributed to members. Feel free to use any part as you like. If it will help public safety, that is my main issue. The Board members ask such important questions. Keep doing your homework and thinking outside the box. Thank you so much for all your hard work. Your meetings are of utmost importance to help the public.

Sincerely,
Fawn Shillinglaw

Oct. 15, 2007

Public comment on U.S.NWTRB fall Board meeting of September 19, 2007 – by Fawn Shillinglaw, 1952 Palisades Dr., Appleton, Wisconsin 54915

Comments refer to page number of the transcript:
(To all Board members – thank you.)

p. 17.

Certainly the public should not have to figure out how to change the “constant 2000 dollar” cost to 2007 dollar cost. The report should tell it as it really costs now.

p. 18.

What will the public be paying per kilowatt hour fee for the repository in the future? For how many years? (Why should people who have never used nuclear energy pay for this?) The public deserves to know now what this will cost them in 2008 and for a 1st repository and for a 2nd repository. The truth of the whole future should be told now – old plants are being relicensed and new ones to be built – where is all this future waste going to go? What will it all cost? In 2007 – etc. etc. dollars? Let’s see the whole picture and plan the economic future here on a cost-benefit analysis that corresponds with the truth to the public.

p. 19.

Yucca Mt. is “full” by 2010 it says here.

p. 29.

So if the cash needed each year is \$1½ to \$2 billion through 2023, and they don’t even have this for the 1st repository, how will a 2nd repository ever be funded? Where is all this money going to come from? Plus what are all the costs the public will have to pay so that the utilities court cases are settled? Where are the funds for all that coming from? Taxes are public money.

p. 42.

Mr. Sproat says he is not going to wait until the license application is approved to get the infrastructure going. That seems totally unfair to Nevada and to the public paying for all this. You need approval first – it’s common sense.

p. 45.

The standard contract is a major item and to not take a hard look at the necessity to open the canister after transport, and repackage them is a mistake at this point. As I said over and over all these years – how do you know the condition inside TAD’s after all the travel – you don’t. That’s why MPC’s were rejected all those years previously when designs were being developed. It’s in the history. You know too many people constantly changing jobs at DOE and OCRWM cause problems – no continuity or knowledge of previous problems. Every time there is a mess, somebody leaves and we get a new person who just doesn’t know the history. There were lessons learned that are not remembered anymore I fear. Things are piling up at reactor sites especially with relicensing. Casks at plants are getting older. What’s happening inside?

p. 53.

By 2017 – 17,000 metric tons in dry storage at reactors already, and more coming; the facilities have to be evaluated to use TADs at reactors – what are the problems, costs? Is this coming so late that manufacture of TADs will be like our Wis. VSC-24 – made in a hurry – mistakes come with that as we well know. What will decide which utility’s waste will be 1st in line? Tradeoffs? Lots of details at utilities depend on all this. Cost-benefit to the public as rate payers and tax payers??

p. 57.

How well I remember the video given to me at the early Pt. Beach meeting about cask loading – all so simple – well, not so in reality at all! That’s why we had an explosion, weld cracks, seal weld problems, construction problems with contractors and subcontractors etc. etc. Murphy’s law applies –if it can happen that something goes wrong it will, and it sure did. This will not be as easy as they make it sound – and problems cost a lot of money. As Dr. Petroski says – prototypes need testing – and over time. Going to direct use before this, is asking for trouble! To “deploy as quickly as possible” puts the public at risk.

p. 58.

If things are “modified” – that means changes – I do not believe its all “existing technology” at all. They just are in a hurry!

p. 59.

OK – so if the vendor is responsible for the design and licensing of it – who is liable when it doesn’t work right? The contractor? The utility? The subcontractor? The DOE? Is the vendor off the hook, if what they promised in their documents is not what is built or doesn’t work as anticipated? Or does the public pay for the mess?? It’s the “tweaks” that often cause the mess, because the total system is involved in every change. That’s why prototypes and testing are worth the time and effort. History in dry cask has proven this. Otherwise, so many changes may be needed you won’t even recognize the original design anymore. Standardization and Integration are the key words always for the total system (always to be looked at as a whole).

p. 60.

Dr. Duquette asked a major question – Is it just going to be who can build it the cheapest? You know the answer! That’s the big concern, always is.

p. 61.

I’ve written my concerns about this vertical, horizontal “flip flop” of fuel (repeatedly) and I worry very much about what’s happening to the assemblies and the basket structures, and the weight distribution, all the movement inside aging canisters (already on pads for years) and transported across country . NUHOMS is about as different as can be compared to our VSC-24 – all these different designs already in use at utilities.

p. 62.

Well – this is the worry. Mr. Kouts says – take it from the pool so they don’t have to load another, and put it on the pad. So then what about “oldest fuel goes 1st”? -- the fuel aging on the pads should go 1st – but how can a utility be unloading those, loading new ones, and do their regular work too? -- This all means using pool equipment and takes time – How will this really work? Will states get stuck with aging casks licensed for 50-100 years on pads as utilities ship out fuel right from the pool in new TADs, or what? What happens to our old “storage only” VSC-24’s at Pt. Beach in Wisconsin? This all needs more thought. Is the public paying for these “incentives” to the utilities to use TADs? How much are we subsidizing the nuclear energy that was supposed to be “too cheap to meter?” Think about it “de-ja vu” all over again!

p. 63&64

The Board questions from the members are so good here – you see some of the problems that apparently Mr. Kouts does not have a sense of reality about yet. What he is actually proposing is putting all the responsibility of closure welds on the plug and seal lid – quality assurance etc. on the utility if they use TADs and depending on the utility to put into the canister exactly what they say they will. The thermal loading of the drift with (the boiling pt. of the rocks outside the drift and water flow at lower temperatures between the drifts for steam condensation) all depends on the correct load placement of heat production in that canister. Are we now depending on utilities for credibility for heat load of the repository then? If all the 72 sites load TADs -- who’s liable when those canisters are put right from transport overpacks into disposal overpacks at Yucca Mt. and put into a drift? It may be fast, but is it safe? If DOE loads TADs, they will know exactly what is in each one and where to place that heat load in the repository, and they will check seal welds, etc. The Yucca Mountain workers would be experienced in this. If you have 72 different utilities all doing this very important job (with new workers that have never done this before) – there will be mistakes. And will the utilities have the TIME to do this right? They are on tight schedules with pool use. Who is responsible – liable when you have to retrieve a waste package from the repository? How will you really retrieve one after 20 more are put in behind it in a drift? – or even know if it has a problem after 20 years? You are putting a grave responsibility on utilities if you expect them to have the expertise to load the TADs right for disposal and DOE never checks them – DOE doesn’t know if the welds were done correctly on the seals. We had a great deal of trouble with seal welds in the past. And with welds on seams too. Look at the documents in the history. And I’m beginning to wonder about aging pads and the heavy use they will get at especially the relicensed plants. Will utilities really be able to unload all those casks

on aging pads after all the storage time? Has a study been done on the total efficiency over time of this plan in getting all the waste off site of the utilities?

p. 66.

So, how high does a vertical cask “fly” at 3gs in a seismic event? And what does such a cask cost? Good questions. Costs and benefits are a big concern to the public. Certainly wind and solar and other kinds of energy receive no such “incentives.” Why not? Instead, we want to build more nuclear plants and create more waste and build a 2nd costly repository. I just can’t believe the Board sees this as the economic best plan for our country’s future. Please keep asking cost-benefit questions on the best ways to do all this for public safety and costs. America no longer has lots of money to spare for such things. People can’t buy houses or sell them, men coming home from war can’t get jobs or health insurance; we have huge debts in the U.S. and lots of programs need money. Are we going to spend this on the most expensive energy program for the future of our kids and grandchildren? Makes no sense to me. My sister just went to Italy and our dollar isn’t even worth theirs any more. This administration has got to start realizing that public debts have to be paid in government just as we do at home. Just how much can this country really afford to take from other programs so badly needed, and pour the funds into nuclear waste disposal forever in the future. Costs go up and up and up for Yucca Mt. as the years go by and will get worse if problems develop (and they will).

p. 68.

Mr. Kouts says here “First thing we need to do is get the facility licensed” – ‘at that time we can look at how to make it more efficient and to optimize it more.’” He talks about using a bigger cask for less loading at utilities. This is really scary for that is just how the vendor used his sales pitch for our casks at Pt. Beach – “just get this thing licensed and we’ll make the technical changes later” – didn’t even know how to unload the thing and it was licensed! Do it right the 1st time my dad always said. If they plan to make changes after they hastily license some plan they really do not plan to use in the future, everybody gets confused, and there is a lack of expertise – you go to a larger cask – everything changes in loading and unloading, etc.! All these issues with utilities and the cask plan need to be ironed out BEFORE NRC licenses the repository proposal. The licensing proposal needs to be complete.

p. 69&70.

It’s clear here that DOE has no legal obligation to accept the “devices” in Wis. right now. All the casks we have are not transportable and that was always our worry. When and how will these aging casks on our pads be unloaded? Is the utility in my backyard going to load TADs from the pool until the plant is ready to close? What condition will fuel on the pads be at that time far in the future? How will this really work for Wisconsin? Kouts says that in court the judge said these “devices” did not exist at the time of the standard contract and so they are not covered and DOE doesn’t have to take them. Great planning! We don’t have rail access at Pt. Beach, so are we really going to consider putting radioactive waste on barges on Lake Michigan? Is that still a consideration at all? This all had been discussed at our hearings here when the casks were loaded long ago in Wisconsin. We knew it was going to be a problem. And truck trip on our highways “forever” poses much more of a safety hazard than rail, I would think. Is rail the “Achilles’ heel,” as Dr. Abkowitz asks?

p. 76.

Nuclear energy may actually “pollute the air” so I resent the sales pitch on this page when we are talking about a repository that may pollute earth, air, and water in the future. And I resent the discussion of putting 500,000 metric tons of waste in Nevada. It’s just as everyone expected – dig a hole and they will dump everything they can produce into it in the future as if it “disappears magically once out of sight underground.” It does not. They will never be able to site a 2nd repository -- not in Wisconsin. I know that and we are on the hit list. So they want to build more plants and put it all in Nevada in the future. This is just plain wrong!

p. 78.

“Centralized off-site storage” he talks about -- that’s just what they plan to do in Nevada that was never supposed to be allowed at a repository site. “Storage” is “aging” – there is no difference and for DOE to think they are fooling anybody by calling those “aging” pads at Yucca Mt. is ridiculous. That is “storage” as plain as can be.

p. 79.

Does industry really foresee recycling – reprocessing – and opening TADs in the future? Is that what they are after? If so, then TADs is way too expensive to cut open and throw out as low-level waste. Is the public going to pay for this? Storing TADs in Nevada is a dangerous precedent. A time limit has to be set for turnaround. A cask should only be allowed on an “aging” pad in Nevada for a year of storage. Because if that isn’t done and Yucca Mt. has problems, Nevada will be above ground storage for the nation’s waste and a terrific target for terrorists in the future. Storage at a repository was not allowed in the regulation for a lot of good reasons. The industry would love to just load TADs and ship them out right away – that clears them in their backyard with their communities – until somebody wakes up and realizes they are following trucks and trains full of radioactive waste everywhere they go (with their kids in the car) for the next 100 years etc. Do you really want to be parked next to a nuclear waste cask at a rest stop or behind one while waiting for a train full of waste to pass. Would trucks and rails pass by the place you work or near your home or would you be waiting for that waste carrying train to pass your car every morning when you take your kids to day care? How close do you want to be to these transport vehicles and how often? Let’s think about what really will be daily situations for the public in the future.

p. 81-83.

I know this “extensive body of preliminary work between DOE and NRC” is helpful to getting the repository licensed faster; however, it also is the same sort of thing that happened with the 1st ever generic licensed cask that we happened to get in Wisconsin. In a new never-before licensing process, the NRC is feeling it’s way through – working out problems as they appear. Only later, after a lot of things went wrong and long after our casks were licensed and loaded, was there an official licensing process for NRC to approve certification of a genuine cask. There are similarities here – DOE and NRC are working “in the same box” – it is only later that the things that they didn’t look at – “out of the box” – will concern them. NRC has to keep looking for the things DOE isn’t looking at, but they don’t have time I think. Everything is supposed to be licensed yesterday instead of taking time to take a closer look and asking all the right questions.

NRC and DOE getting too cozy before licensing, can work for as well as against a safe repository plan. This has never been done before – there is no previous licensing process to use. Yes, there are cross-cutting issues between Part 71 and Part 72, part 50 and part 63 – how many “licensing risks” are you willing to take (that he references) to get the job on a fast track – who’s liable?

p. 89.

Just what are the differences between what he calls “the ill-fated MPC program 10 years ago”? The multi-purpose canister is the same idea as TADs isn’t it? How are they different? And is maximum reliance on the private sector where “cheapest is better” really a good thing?

p. 92.

Materials – neutron absorber material – where will all this come from? – he is concerned about availability and “urgency” – well, so am I – this is when they try to cut corners. A good cask starts with good materials in the 1st place and believe me, poorly made material makes a mess right from day one in constructing a cask. If manufacturers are on a deadline – they hire more workers not used to their quality assurance etc. – that’s when cracks, not disclosed, appear later in cask use, and welds to cover up cracks are hidden etc. Go to your video store and rent “china Syndrome” again. Remember the guy saying to Jack Lemmon – “well, we really can’t check all the welds” – when Jack accuses him of sending in the same film for lots of welds. -- It happens in reality. Things are mistakes and are covered up to keep schedule. Contractors, subcontractors, vendors, utilities – all have to be on a very strict quality assurance monitor right from the start. It became a main problem in the mess with the VSC-24 cask here. You can’t afford to have a crack in a side seam weld on the original cask cylinders and go right into the cylinder itself and try to weld over it etc. You can’t afford to grind down welds too thin. These containers are going to go into Yucca Mt. for a long time. They have to be done right. If industry bangs a cask against another and dents it – who will check that in Nevada? If a canister “jams” while being put into or trying to get out of a transportation cask, who will check for scratches etc. What condition will these canisters arrive in Nevada after all that transport and handling? How will you know? Once a utility gets it out of their backyard are they no longer liable for anything? They would love that. If it gets to Nevada and problems are found, who pays? Can it be sent back?

p. 92.

The Board really needs to know the details of this vendor-utility “demonstration” plan. Ask some questions. Get the reports. Is it just hauling an empty cask around? I watched that at Pt. Beach. Even the transporter to the pad didn’t work correctly at 1st. But loading real fuel and unloading it is a different story! That’s when we really find out what was unexpected – like the creation of hydrogen from a coating (never tested) or that unloading is do difficult they never did it at Palisades on that defective cask (even though it was licensed with unloading stated as “just the reverse procedure of loading” – one paragraph!)

p. 93.

What about those “tie downs” for seismic? Do you know? I asked about those when I saw them in the drawing. Never came across anything like that in any dry cask design before that I know about. Ask some questions about this please. Is it possible that tremendous amounts of storage

“aging” of waste will be above ground at Yucca in the future – all “tied down.? Is this wise? Cost effective? Dangerous? Way too much being sent at 1st!

p. 96.

His “bridge” analogy is timely considering what just happened to the bridge collapsing in Minnesota. I just went to Wausaw recently in Wis. and another bridge was closed that didn’t pass inspection, as are others all over the county since the accident. Bridges need careful inspection as do casks. You can’t just build something and think it will last forever.

p. 98.

These court and settlement costs need to be factored into the total cost of Yucca Mt. in the future to the public. Does the Board really know a total cost-benefit analysis prediction? The utilities are going to get a lot of “incentives” it appears. And yet more plants and more waste will be created??

p. 107.

Mr. McCullum says “I don’t see any reason to bring the DPCs back into the utility pools.” Of course not. They don’t want to unload those old casks from their pads – they want DOE to deal with unloading all these different designs. Time? Problems? Costs?

There is not even a truckable design in the works.

p. 108.

Seismic problems – if all TADs have to have these expensive storage overpacks to be put at Yucca Mt. – then they shouldn’t be stored there at all. Leave them at the plants till ready in line to go into disposal as was the original plan for a repository. Yucca Mt. surface was not meant to be an above-ground repository as the industry seems to plan. Soil tests are very important for pad placement as we know from past mistakes. A fault is no place for a pad.

p. 112.

Mr. Arnold says “Good ridded to dry handling and a million lifts” – yes, well, I remember when dry handling was going to be the answer to everything – so much for that – I remember the designs at the beginning. But, that said, -- I’ve pounded away all these years at the wet/dry – wet/dry cycles of handling fuel and crud on it and blisters and hairline cracks etc. and who can tell me what happens when fuel goes from wet to dry all these times, plus horizontal to vertical and bouncing on a rail or road across the country? What will that fuel really be like in a pool in Nevada when DOE unloads it – nobody really knows – it’s the “can of peaches” I wrote you about. You don’t know if they are rotten till you open them.

p. 118.

There are thermal limits to pad placement and it sounds like this needs a lot of thought as to radiation limits – “shine” – monitoring etc. – but the main issue is seismic – chaining those casks to the pad just seems wrong to me. It is my understanding that because of a fault you have already had a change in the initial pad site – If a plant couldn’t be build there or a pad initially – how do these “tie downs or whatever” protect the public. Where have these been tested? – a TAD hasn’t even ever been built. This sounds very dangerous to make any site on a seismic area

a pad site. Wouldn't it be better to put the hotter fuel from the plant pools on the plant pads in a different storage overpack (doesn't have to be that robust for earthquakes at Pt. Beach in Wis for sure) and ship the cooler, less radioactive fuel from casks already "aged" on plant storage pads. "Oldest fuel first" as originally planned. Why submit the public to the danger of that hot fuel going on trucks and trains 1st? No reason for that risk. Public safety should be of utmost importance in this program.

p. 122.

Last I heard, our VSC-24 was still "storage only", but they were trying to certify those loaded casks for transport. If that were done there are shims in the seal welds that are really a problem in unloading. Does DOE have any concept of how to really unload all the different dual purpose casks that utilities maybe sent to them? We really had a lot of discussions about those shims here! A lid should fit – not necessitate shims. These are the things they don't reveal in the simple design for casks. Unloading the TADs from a repository also needs to be designed in detail. Can they really remove one and unload it as NRC requires? Ask for these procedure plans please. Picture what can happen in that drift – how will they deal with it?

p. 122.

Is the "unloading process the reverse of the loading" as he says in line 18? I've heard that before and it wasn't true!

p. 129.

This "steam bubble" in unloading can be a real problem especially if things take time and you have water in the cask – this isn't all as easy as it sounds. Machining off welds and getting fuel out may have some real surprises. Pool water chemistry is key to crud falling off etc. (At Trojan the coating came off in the water and clouded so badly they couldn't proceed.)

In Nevada, where do they put the extra assemblies from a VSC-24 assembly cask into a 21 assembly TAD? How long can these assemblies stay in the pool? They will have to be put where then? In a storage situation on the pad or how will this work as the extra assemblies fill the pool racks?

p. 143.

Dr. Abkowitz states a concern clearly here. He says, "You basically have an extremely large aging pad to accommodate the shipments coming in at a much faster rate than you can emplace them." So, it is clear to me you have a large storage facility for quite a long time instead of a repository. That was illegal. That fuel is too hot to put on the repository. Why would it be allowed to be put on our roads and rails? Please ask about this.

p. 169.

The scope of the analysis that it starts at the fence line of the surface facilities is just plain wrong and needs to be changed. Risks taking place during waste acceptance and transportation are very important to public safety and certainly part of the integrated system. That's why TADs is called TADs – it includes transport. Dr. Abkowitz is very right to question this issue much further. It needs correcting for sure. Transporting hot fuel across the country for years is not anything like delivering reactor parts to a utility as this Mr. Frank implies.

p. 202-203.

I really appreciate Dr. Kadak asking how to bring more of the public to these meetings. But Judy is right – it gets too technical and people who worked on these issues so hard for so long got burned. Why at one time I worked on the microfiche machine at the Two Rivers library (1 ½ hours drive from my home each way) all the time. I copied every document that came out on the VSC-24 cask -- knew everything about it – even sometime more than the lawyers at the hearings. Was in constant contact with NRC, our public service commission, etc., etc. Finally, one day I took 2 station wagon loads of documents to the recycling center and never wanted to hear the word nuclear again! The public – most people do not have time – everybody works – and if you don't keep current, you can't follow what's going on. They took my public document room away from Twin Rivers. Well – all that was years ago, but I'll never forget all the problems with the VSC-24 cask – the lies, the cover-up, the broken promises, etc. etc. , all the problems and the explosion. Then everybody was interested. I think, though, that when people realize this waste is going on our highways and rails, it will generate a lot of news and interest when it finally happens. And when mistakes happen – there will be an outcry. I think of the Yucca Mountain project kind of like the Manhattan Project. Once they finally figured the atom bomb out at Los Alamos, General Groves and Truman wanted their “bang” for the “bucks” spent – and of course, the cold war was the result and, nuclear proliferation. This country is already relicensing plans and planning new one, with no assurance that Yucca Mountain will work or whether we should actually risk public safety for ever with radioactive waste production when there is wind and solar, etc. there. Why aren't those subsidized? It always takes an event in somebody's “backyard” to get the public to react. And with all that rail and truck hauling, all that fuel loading and unloading etc. – there will be reaction if not action now. Can I fly to these meetings? No. But I sure can read these transcripts and get the feel of being there and I am retired and have the time. Do I think anybody pays any attention to the public? Not much. But try and site a 2nd repository in Wis. and you'll start an uproar. I hope the Board keeps asking the hard questions. Good for you!!

Oct. 16, 2007
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Additional public comment to my Oct. 15 comments on the NWTRB fall Board meeting of Sept. 19, 2007 – all members:

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I keep thinking of those “hold downs” for cask storage (aging) overpacks at Yucca Mt. pads and the huge amount of above ground casks planned to arrive there, when only a small amount will be cool enough to be put underground. Those earthquakes necessitated “hold downs” attaching the overpacks to the pads and are just plain dangerous and costly.

- 1) Yucca Mt. should not be an above ground storage site
- 2) Casks should not be on pads in an earthquake situation
- 3) Transportation doses should be the least possible to plant workers, drivers of trains and trucks and to the public along the routes.
- 4) Earthquake proof overpacks and canisters for Yucca Mt. cost too much

Therefore, why not have the utilities load TAD canisters – but, keep them onsite in a different overpack suited for their storage location? Only allow fuel on our roads and rails that can go right into the repository when they get there, for the correct thermal load. This is the only way best for the public. To put hot fuel in transport across the country and above ground for years in Nevada is just plain unsafe and not cost effective. And I would think illegal. Public safety should be the main aim in this program for NRC and DOE. I ask all the board members to do some creative thinking about this. Thank you, Fawn Shillinglaw