DOCKET NUMBER
PROPOSED RULE PR 72
(65FR3397)

DOCKETED
USNRC

'00 MAR 21 A11:56

March 14, 2000 (1)
1952 Palisades Dr.
Appleton, WI 54915

Secretary US NRC — comments on proposed rule 10 CFR Part 72 (RIN-3150-A632) to add NAC UMS cask to list of approved spent fuel storage casks
Fed Reg Jan 21, 2000 Vol 65 # 14 p 3397-3399 (attn: Rulemakings and Adjudications staff)

The Regulatory Analysis here says that the alternative to this proposed action is to give a site-specific license to the utility that wants to use the cask. You say "this would cost the NRC and the utility more time and money". Where is the proof for this statement? Has a study of evaluation of this so far been done? It should be. Would it really cost NRC more time? Would it really cost the utility more time? Would it really cost the NRC more money? The utility more money? Prove it.

It is probable to me that it costs NRC more time and money in the long run for all the site specific changes needed later, and the staff time and cost for all the inspection of problems and violations etc., and redoing everything — like the mess of UT testing for example. If each cask were site specific — the vendor and utility would pay for the time necessary to do a thorough analysis of what they need before granting it to the NRC. Seems to me, the NRC gets the burden of "fixing up" everything after general certificates are certified and the public (as ratepayers and tax payers) end up with the bill. Utilities and vendors would much rather the NRC do the work and spend staff time and money.

Also, the proposed rules for casks and the

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environmental assessments have become almost a "fill in the blank" form, where NRC just puts in the cask name. This need some rethinking. Did the cask addition rule really "envision" 20, 30, 100 or more cask designs out there in competition? How much thought to the future of standardization and integration of the federal system of waste was given here? Not much I fear. You say this proposed rule (as the others) "would have no impact on other government agencies". I disagree. It certainly impact DOT and DOE, and the whole Yucca Mt. program. Is competition for the cheapest, fastest fabricated, designs for casks really the best for this countries waste program as a whole? This need evaluating now. I don't think it is. A lot of the decisions by utilities are now being done on the basis of which vendor can get the casks to them the fastest! Pools are filling. There are few vendors and not many contractors with experience. More and more cask designs built by more and more unexperienced workers for nuclear QA, and rapid pace deadlines to meet, plus the cheapest materials (carbon steel wherever it will be accepted etc.) is going to lead to a mess in the long run. It's all going too fast and the end result is not being carefully evaluated. It's a lot easier to fill a lot of casks then empty them, or to empty them and put them in transport or disposal containers. This spent fuel needs to be evaluated for the long haul — the whole program! The utilities just want to get it in some cheap containers and get

it out of their backyard as soon as possible.
I'd like to see NRC specify some staff to look at the program as a whole and "go back" with a questioning attitude. It's all too easy, once you have an "acceptable" form, to just fill in the blanks and never read the rest for 10 years and forget where we were going in the 1st place with all this. I'd like to see NRC stop, take a long breath of fresh air and, look over where they are headed.

How will unloading and transporting all these designs really work? From the utilities to yucca at yucca? How would it work if yucca doesn't ever open? Do some creative thinking of future options.

Really, I think it's time for some brainstorming. Go back — what went wrong, when, why? How could you change things to better the whole cask program? What testing really needs to be done? What inspections? Are you doing the right things? Going the right direction? Too fast?? Think about it. Think about the whole system and how it works.

In the NCSSA "Radioactive Waste News" it said Maine Yankee Company is seeking an "accelerated licensing review and approval schedule for storage of Maine Yankee nonstandard fuel in the NAC-UMS!" "This would allow My apco to attract partners to join its bid for the gas plant." It says NRC suggested they load standard fuel 1st, but the Company wanted the amendment 1st even though only 25% of the fuel is nonstandard. It said that the SER and CofC was scheduled for Nov 1, 1999 and CofC for transport by April 2000.

However the NAC-UMS proposed rule wasn't in the Fed Reg till Jan, 2000 and only for storage — so I would expect the pressure is really on! This is what worries me. Just this kind of situation.

Whose fault is it? Was the vendor and utility really ready with their proposal? Usually they are not. They haven't done the necessary homework and hope to get their cert issued fast, and "fix things up" later, using NRC time and money — (which means tax payer money really; so how much value is really public comment at all, when we know this thing needs to get done as fast as possible — so says the utility — that is not the NRC's job. Safety is your job — public safety and worker safety.

I see some difference here between NAC-MPC and NAC-UMS and I wonder why. Nobody really explains what "multipurpose" and "universal" mean anyway. These are storage only casks at this point and that's what they should be called everywhere in the documents as far as I'm concerned.

I see the PWR basket has stainless steel support disks with stainless steel tie rods. The BWR basket disk are carbon steel and it doesn't say what the tie rods are made of — ?? What is it? (p 1-2 SER) The carbon steel support disks are coated with electroless nickel — why? I distrust coatings. How has this been evaluated for all cask handling and unloading for material — pool water especially — reaction and formation of new materials that can interact? What about the aluminum heat transfer disks?

The NAC-MPC was using a VCC of 155,000 lb., but the NAC-4MS VCC is 221,000 to 238,000 lbs. empty. Has this weight been evaluated for all systems? The MPC VCC wall was 21 in thick, but here the 4MS wall is 28 in thick on the VCC — seven inches more — why? But the carbon steel liner of the VCC is one with less — why? In the MPC it was 3.5 in yet in the 4MS it is only 2.5 in. for the carbon steel liner in the VCC. Why are they using more concrete and less steel — to cut costs ??

The 4MS transfer cask (TSC) has a multi-wall (steel/lead/NS-4-FR/steel) design, however, the "extension", for operational height to accomodate control assembly insertion, is only a carbon steel ring bolted on. Why? Shouldn't the extension be made of the same shielding as the rest of the TSC? If not, why not? Has this been carefully evaluated? This carbon steel ring just bolted to the top of the transfer cask really sounds like a flimsy way to solve the problem. Can't something better be designed? How would this react in unloading? In a problem situation? How safe are the bolts, and is any pressure, stress, heavy load, etc. on these bolts in all handling in loading and unloading? How has this extension been evaluated in relation to all evaluations for the TSC itself? Could the extension come off in a crucial lift? Doesn't sound good to me.

Besides, control components should be low level waste, and not sent to any repository any way. Only HLW should be allowed in HLW containers. It will result in more handling and confusion in

the long run if you don't regulate separation of
** HLW and LLW right from the beginning in casks. Think ahead.

Also — "8 supply and 2 discharge lines" in the transfer cask wall. Adds to confusion and mistakes I would think. To introduce forced air to cool the contents and allow the canister to remain longer in the transfer cask. This is asking for trouble. Gets more complicated and workers "bank" on the time being available. And I don't like the idea at all of using the transfer cask "in the event that a canister must be removed from a concrete cask". What does this infer? To store it in there if there are problems or what? Just what do they propose here? Why?

I see on p 1-4 of SER that now we have "preferentially loaded and administratively controlled" basket positions! Whose idea was this? Anything to get around the rules. Talk about specifics! This is rediculous. Getting this precise really asks for trouble. A mistake is made — Then what? These workers are only human, and machines disfunction, and casks aren't always fabricated or tested correctly. Please let's not allow this. Leave a wide safety margin to protect the public. Cladding temperature is crucial!

P2-3 I don't think NRC has any real proof of the efficacy of Boral over a 20 yr. storage period in a cask. What does "assured" mean? Where is the real proof? This needs testing of the real thing. A lot depends on it working right.

SER
p 3-2 I found it interesting that the reviewer prefers to call the extension a "low alloy steel ring" here rather than "carbon steel". Why?

p 3-3 — Tornado missiles — why are they all to hit horizontally Can a tornado only blow something into the side? I question this. We had an awful tornado at a place we own a few years back. Any thing can happen — Things land on top of things and come down hard! a vertical missile is possible I would think. (Sorry, I see you do now talk of a vertical missile — but only 70% of the speed — why?)

p 3-3 Snow + ice — its not just the load — its the freeze thaw cycle and icicles forming and dripping over the vent holes. It has happened. This really does need more study for full cask array monitoring and clearing in an ice storm. They seem to be more frequent with goofy weather patterns the past few years. If vents are frozen over — you have a real problem. This can happen. Plans should be made for a full cask array with this situation. These casks may stay at the plants a long time and get a lot cooler.

Materials:

p 3-4 This needs constant watch. "Lead slumping"? "Thermal aging" — all reactions that could cause creation of new materials and new interactions between these newly formed materials. a lot of thought is necessary in this area. Don't forget our hydrogen explosion at Pt. Beach!

SER

p3-4 and 3-5 — Seems to me these support disks should be of stainless steel too. Why not? No reason is given. Everything else is stainless, why the change in materials here to carbon steel necessitating this electroless nickel coating to protect carbon from corrosion?? Coating are problems — some don't adhere, flake off, change over time and they are not time tested in such a situation as in a dry cask for 20 years. I just think that whenever you can do anything without a coating — then don't coat it! It causes problems and there are a lot of unknowns in long term storage and unloading reactions — these casks may sit there a lot longer than 20 years on that pad. Plan for it. Do you want to have to unload them all because of a possible coating problem? It's a risk that we don't have to take and put problems to future caretakers at time of unloading. I'll never forget that guy at Pt. Beach, when I was expressing some cask concerns, he said "well, I won't be around when they open them." That's the attitude too often — get the casks loaded now. We don't care what happens in 20 years!

p3-4 Charpy testing of material needs to be verified before any casks are loaded. I don't know how or why those casks at Palisades weren't charpy tested right, but the result was some couldn't be moved at lower temperatures any more. This could end up being a real problem. Who verifies the charpy tests of materials? Where is it in the document? Is it clear?

p3-5 Is "ferritic" steel different than carbon steel? It

isn't stainless. I wish you'd define the diffent steels so one reading this knows. I don't see why anchor base plate and optional lifting anchors are not stainless steel. shouldn't they be?

p3-5 You say Boral has "a long, proven history in the nuclear industry". for what?? You say it has been "used in other spent fuel storage and transportation casks" — which ones? how long? for what fuel? I'd really like to see a study done by NRC on this so called "proven history". I don't think boral has been time tested in dry cask conditions like those of today's cask designs. This needs to be done. What is boral use really based on as far as recent research??

p3-5 "Interlocking chemical lead brick" in transfer cask gamma shielding. First time I've seen this term. What does the word "chemical" mean here? What chemicals? And if water would eventually leak into this lead chamber what could the chemical create? Remember this transfer cask is a real "work horse" over the years — used over and over and over again — it gets highly irradiated and high (very high short term) temperatures and contamination. What happens to it over time? Especially the welds? If they leak and water gets inside those walls — then what can happen? you need to know this as this transfer cask is in the pool a lot. Who checks this transfer cask to see if there is any seeping of water into the walls? How often? What are requirements for transfer cask testing or checking over time? are there any at all? You know this really needs some thought.

Because if a transfer cask leaks and takes on water inside walls, or trunnions, or whatever, Then not only could chemical reactions start inside those walls, but there is added weight in any lifts that nobody would be aware of. I think it was the transfer cask at ANO that leaked, wasn't it? and had to be dried out. So then any way to weigh the transfer cask periodically to see if it has taken in pool water?? I do think this may be very important — and especially if you plan to unload casks inside the transfer cask or use the transfer cask for short term storage of an inner canister taken out of the concrete cover in an emergency situation. Don't just assume the transfer cask will remain "as built". this would be a mistake. How could it be checked?

Transfer casks for all cask designs need specific criteria for examination periodically. Say after each use — check for some things. Then after 5 uses check for other things. If used ten times — a real check of everything closely — what to look for? Weld cracks especially! any place water could seep inside the walls. check for corrosion, contamination, scratches, dents, etc. any place the outer wall was purged in loading or unloading etc. Maybe transfer casks are way too neglected in NRC thinking and the documents need some definite criteria for testing over time of use. Please consider this. and the door parts especially need to be kept in good working order and checked too at the transfer cask bottom.

p 3-6 — NS-4-FR you say has been used "reliably" in several other cask systems. Which? How long? What does "reliably" mean? It has a high hydrogen content, and you say "is fire resistant". How has this been tested? And, if the NS-4-FR gets wet because of a transfer cask leak, what can happen? Can it change chemically and release hydrogen? You need to think about things like this — for if a transfer cask has the potential to leak, any place, (and it <u>does</u> have that potential) then it probably <u>will</u>, eventually over long term use. You need to know what could happen if pool water gets <u>inside</u> those walls. Could a gas form and pressure build up? Think of all the conditions the transfer cask is in during loading, unloading, (not even possibly short term storage) of spent fuel. Let's know this <u>now</u>, not later when it is discovered one has leaked for years. Remember the neutron shield material in the VSC-24 got wet too, because some areas weren't welded right in the encasement. This stuff takes on water and can "change" — right?? Has NRC checked the materials sheets from the manufacturer of NS-4-FR for the specifications? This needs to be done. Please do it. How should it actually be used and checked over time?

p 3-6 Oh no! An exception to ASME code again? Why should "partial" penetration welds be acceptable? You call it a "redundant" closure, however I think it really isn't. You can't UT the shield lid can you? Then it doesn't count as a closure as far as I'm concerned

The structural lid needs a full penetration weld with UT testing. This area is crucial.

p3-7 — No spine coatings — good! But you say this nickel/phosphorus metallic alloy "can" be deposited uniformly on all exposed surfaces of the support disk — but "will" it be so? Look what happened with Thorton at Trojan!! Will this coating adhere? Is it baked on? painted on? How cured? What is the criteria here? How checked that it is done properly? How checked for long term storage and unloading pressures, stresses, temperatures. Has NRC checked the manufacturers

* sheets for this coating?? You say the coating is "not expected" to react with SFP water, but many pool waters have different chemicals in them. Sounds like the way this is written, hydrogen or flammable gases are possible. Coatings cause problems. Make the disk of stainless steel. Why not??

And has Keeler + Long, as well as Carboline epoxy enamel, now been checked well for use on casks in actual situations. How has it been evaluated for the use its been in at Palisades for example. Any inspections or research done here? Do "patch up" paint jobs create areas that exacerbate corrosion for example? Check "the real thing". What happens?

p3-7 You say "Mechanical Properties" — most of the values in the tables were obtained from ASME Code Section II, Part D. What is the date? You say "some of the values were obtained from other acceptable references". Like what? What were the dates? Are these "acceptable?"? Please give the references here.

p 3-9 Here we go again! Just as I thought, There is a possible problem with those aluminum heat transfer disks and hydrogen creation. Don't allow this. Pool water configuration is different at each reactor and changes even at one reactor for differing reasons. and don't tell me you can take care of the hydrogen — The Palisades mess shows it just, in all liklihood, will not be done right by workers inexperienced in dealing with this. A flame means fire! — apparently nobody at Palisades knew this. Any material that creates hydrogen in dry cask use is not acceptable as far as I'm concerned. Use stainless steel or something else then.

p 3-10 The trunnion area welds certainly need inspection over time for possible transfer cask leakage of pool water inside the walls of the transfer cask that could affect the chemical lead and neutron material — and weight.

p 3-15 The pedestal weldment bothers me. Are you sure you have looked at all the possible problems here? This is a crucial area. One inch may make a big difference in deformation. Check this over carefully. I'd like to see a "sensitivity study" by an independent party on this area — not NAC.

p 3-18 Some with NAC "sensitivity study" for tip over analysis — I'd like an independent study. Your "reasonable assurance" doesn't sound very sure here.

p 3-23 You say the materials "are compatible with wet and dry spent fuel loading" and unloading

operations and facilities". Where is the evaluation for these materials for any dry loading and unloading? I haven't seen it. What dry loading procedures are you referencing? Unless this has been analyzed in detail, this should not be here. Please take it out.

p4-1 As said previously, the "preferential loading" is not a good idea — seems to allow for hotter fuel if put at the perimeter and is an area for mistakes to cause real problems

p4-1 Is there an explanation in the SAR as to detailed plans for what to do with the radioactive gases purged from the canister with nitrogen in unloading? Where do they go? How? Limits? Problems possible? How are gases filtered? How hot are they? How disposed? How does this work with plant emissions? — time element concerns? Has this been clearly thought out so it could be done the day after a cask is loaded, if necessary, and everybody would know what to do??

You say you have "reasonable assurance" cladding will be protected in unloading. I don't. It's never really been tried and tested. It needs to be done with the real thing. But I've been asking you to prove that for years!

p4-3 All depends on the "proper" determination of the design basis decay heat load apparently. How can you assure the public this is to be done "properly". Who checks this?

p4-4 8 min — 50 gal. of ~~gas~~ transporter fuel — fire —
Do evaluation for a crashed jet and its fuel instead. It is possible.

p4-6 It is of interest this "insulation" added to the outer cask surface and averaged over a 12 hr. period in (the air flow model) — What is this for? Also the check of thermal interaction among an array of casks — reducing the "view factor" to account for the cask being surrounded by 8 other casks. This needs to be done for all cask designs. Plan for it in a full cask array.

p4-6 These "sensitivity" checkruns that NRC staff asks for here and there are good, but probably should be done by independent evaluation. Fabrication tolerances here on gap size reveal that it would affect the canisters heat transfer ability increasing fuel clad temperature by 9°F and reducing the normal temp. margin 20% to 37°. I think That's quite a lot. Can't fabrication tolerances be tightened to not allow this?

p 5-2 "solid borated polymer (NS-4-FR) — Where has this been used and tested long term to prove it will work well in dry cask storage? What does the manufacturer's spec sheet give as criteria for use?

p5-2 5 in. Carbon Steel "temporary" shield to be used for welding, drying etc. — How is this used??

p5-2 cask bottom — 1.75 in of stainless steel (canister bottom plate)
2 in. Carbon steel (pedestal plate)
1 in Carbon steel (cask base plate)

Why the 3 in. of Carbon steel here — ? Should be Stainless Please explain the "pedestal plate". How is it used — for what purpose? What shape is it — why a pedestal? Can it rest to the cask bottom plate and the canister bottom plate

over time, if water condenses on it surface, thereby creating a problem in pulling out the canister? Why can't this pedestal ceramic? Why did the TSC-24 necessitate ceramic tiles here? Has this idea been abandoned? For what reason? The "fat lady in high heels" document at our hearing in Wis. was supposed to demonstrate the weight on tiles acceptable. Has that become invalid? (It created quite a lot of comment, understandably, as it was really quite ridiculous of SNC to send it in we thought). Therefore the ceramic tile idea has always been of interest, the placement of the tiles, the adhesive used — etc. (concern for breakage when lowering the inner canister on to them) — yet this pedestal for NAC-UMS (what's the M for any way?? why isn't it = USS? Universal Storage System) has not been explained here at all. I'd like it explained as to why it is there and what it does long term in storage please.

** I just realized I did not receive the references for this SER. Why not? Were they not presented by staff with the SER? I think references are very important — especially if somebody wants to check them. Also they are often dated in 70's which bothers me. The public wants the references and the dates. Please
** send me these missing pages from the SER you sent me. "References" is listed in the table of contents to be at the end, but I did not receive them.

On p 5-3 here there is a reference to a set of skyshine

experiments at Kansas University, This was used in the NAC-MPC SER also. What is this? Date? Please explain the experiments.

p5-3 You say the code input "appears" to be appropriate. That certainly doesn't make me feel secure. Is it right or isn't it? What is shoved in that computer is all it has to work with — it doesn't really "think" of something it might have forgotten. You need to do that. Computer models bother me.

p5-4 Is there any way this peak dose rate of 2092 mrem/hr for PWR at the gap can be lowered. It is such a danger for welders and other workers in the area. Shield lid weld operations are hazardous. Also the top of a BWR sealed (in transfer cask) canister at 846 mrem/hr and bottom of transfer cask with a sealed PWR canister at 819 mrem/hr. is also high. Can't this be reduced in some way?

p5-5 I see here now why the extension is not shielded like the rest of the transfer cask wall, however, this bothers me. You say "the extension is located axially above the active fuel region" from the hardware regions — the control element is all that is in the extension area then, correct? But — is there any possibility that the active fuel region would be pulled up into the extension area? How does this work in unloading? Have you looked at all risks by allowing this extension to be used? — sounds inadequate and flimsy bolted on there like that. Will be a problem, I predict.

p5-5 If burns or walls are to be used — the reaction of the materials in them as tornado missiles needs evaluation.

p6-3 Wow — this is of interest. "When a fuel assembly's bottom hardware is too short, active fuel can extend significantly below the bottom of the poison panels,

a configuration not considered in the applicants criticality analyses." I don't like this at all. Will requiring a minimum length of bottom baskets really prevent this? Will workers measure it correctly? I think it would be safer to have longer poison panels for protection. (Are we cost-cutting here?)

p6-4 The 6.3.1 Configuration 1st paragraph is strange. You say there is axial reflection of neutrons from one tube to another axially by passing the poison panels under full or partial flooding conditions. Why? How does this affect analysis? Staff does not support the claim that the infinite length approximation adds conservation, Then remove it.

p6-5 Now this I like to see. NRC staff really looking at the Boral vendors product literature, good! You found something out too. This is something you need to do for all materials as I think most vendors don't read the literature at all — they go by what they think, or are told will probably work. The details are important here.

** I am not pleased with these "nonstandard" Boral sheets with possibly using natural B4C and less binder. They are an area where mistakes may be made and verifications not done. How can this situation be rectified and why wasn't NAC upfront about the problem in the 1st place? This is a big concern and needs more creative thinking.

p7-2 I don't know where this "evacuated envelope test method" to leak test the shield lid to shell weld, but it certainly sounds inadequate. The sniffer probe isn't the greatest test either. As far as I'm concerned, if you can't UT the shield lid weld, you can't call it redundant sealing (along

with the structural lid weld. Now that we know about all the flaws possible in these lid welds — there is great concern for future leakage — especially in shield lid welds.

p2-3 The source term should be specified by the applicant. You are depending on perfection if you don't demand this. The releasable radiological source term and the corresponding dose consequence should be provided to the public in these documents even though you and the vendor think its not necessary. We want to know and there is no reason not to require this. You may need to know in the future too!

p8-2 Two cycles of alternating vacuum drying and backfilling. So if the TSC-24 casks at Palisades and Pt. Beach did not have this done, how safe are they? Is there water vapor in them??

p8-3 cooling, venting, reflooding — you say steam and water being discharged to the spent fuel pool or radioactive treatment system. This needs very detailed definite criteria now. (Each cask user should also have site specific procedures in place to add to generic procedures here so that all is ready before any casks are loaded. NRC needs to check this.)

p9-1 Well, of course, I object to use of progressive PT examination instead of UT. UT needs to be done. You need the required volumetric examination, and your justification of allowable flaw size needs reevaluating. It is inadequate.

Use of a progressive PT exam, you admit, is not in agreement with ASME code. All this stuff about a 360° flaw that could exist under the

weld pass that is PT examined proves the point, doesn't it? Making it easier to accept flaws and making it easier to test welds is in the utility and vendors favor and certainly not in the safety of the public and workers.

p9-2 "Sufficient" intermediate layers is a "nothing criteria" — what does it mean? Get definite here.

* this is important. How many layers are required to be PT tested? This needs clarification.

p9-2 I made all my comments on permanent records in my comments on the NAC-MPC — don't not going to repeat them here. But make definite criteria as to what is permanent. Don't leave it up to licensees to decide, and find, 5 years from now, the photos are faded out or videos disappeared. Get definite here — records are important to the future.

Check with experts on permanent recordkeeping. **

p9-3 This is strange. A "mobile lifting frame"? Sounds very vague. Is it a transporter or not? How does it work? Haven't they developed it yet? Reminds me of the video Pt. Beach put out during our hearing. All the talk of the transporter, yet the video animation really only showed something like 2 yellow vertical sticks. They hadn't decided on the transporter design yet!!

p9-4 Manufacturing test will be "representative" of each Boral panel. How many panels in a "batch"? How many will actually be tested to represent each "batch"? If you only test "representative", how do you know which ones to reject? Especially since this is to be apparently a special nonstandard group of batches

for this cask use. Doesn't sound good to me. Each panel should be checked. I fear these Boral panels will be a problem in the future after casks are loaded.

p 11-3 I haven't seen NRC's ISG No. 3, but apparently, from what you say here, it lets the vendor and utility "off the hook" as to letting the public know an analysis of the dose consequence from a ground level canister breach with 100% fuel rod failure. You say it is "not credible." You say the dose consequence analysis is "unnecessary". My view on this change in NRC requirements is that vendors and utilities don't want this analysis out to the public to reduce fear of such a failure's possibility and they just don't want such information out in the public domain as it might scare somebody living nearby. I really think this is "balony"! Certainly it is possible. Dry cask storage is only in its infancy. No casks have been out there long term — none unloaded — no full cask array — you don't know what can happen in the next 20 years at these ISFSI's at all for sure — or if this stuff goes in transport. Surely the public deserves to know dose consequences of all related events. What seems a "hypothetical" accident to you may end up being real one day. I'm really rather surprised you let this get by you. The NRC should be for public and worker safety. And the more information and education we can get on dry cask storage, the more we can help solve the problems and ask the right questions.

p 11-4 24 in. Drop — permanent deformation of the air inlet of the TSC pedestal and loss of parts of the inlets. I don't think the pedestal should be part of the inlets. Why is it?

p 11-4 "Explosion" needs more evaluation. Where there is hydrogen there can be an explosion. We know that in Wisconsin — we live near Pt. Beach after all!

p 11-5 You know all these off-normal and accident conditions always assume you have a cask fabricated correctly — what if it isn't? I know you can "what if" forever, but nuclear things are something one doesn't want left to chance. I guess I think fabrication problems and worker mistakes are the leading concern with dry cask. That's why the design has to have the best review possible, and instructions and criteria have to be simple and clear. We've got to do the best we can before giving a C of C to any of these applications. Don't rush these things. They will be on those pads forever!

p 13-1 A QA program is only as good as it is put to use. So we'll see. NRC unannounced visits to contractors and subcontractors is very important. Licensees need to give full documentation to changes in the design and keep the SAR current. We must learn from past mistakes of others. The path of the VSC-24 has lots of lessons learned — I hope!

p 14-1 "Nothing in this review considers or involves the review of alternate disposal of SNF". That's the main problem. I really don't think Yucca Mt.

will ever open. If it does it will be a political decision, probably not a scientific one. I predict real problems if casks are put underground. I think that right now you actually are reviewing "ultimate disposal", but it is above ground storage instead of below ground storage. SNF doesn't "disappear" underground any more than it "disappears" aboveground. It will be "stored" either way for a long long time. Your above ground casks are actually part of what you call the disposal system. The only thing it does is allow more creation of more SNF, if you send it to Nevada. More creation of waste nobody knows what to do with on this earth. That is what is a worry. Why not use the wind and sun??? Why allow more and more SNF to be created? Have you really really ever seriously considered this at all? (The costs are getting larger and larger as the years go by.) The money goes right down the nuclear drain.

I really wonder if in the end, even disposal of the empty casks and canisters won't be a problem. Nobody wants a low-level waste facility nearby any more than they want a high-level one. You probably won't ever change that. The word "nuclear" will forever bring up mixed views of mushroom clouds to most people. As more and more SNF is handled and transported, the probability of more problems arises I would suppose. What more can I say? I want my grandsons to grow up in a world with clean energy sources. And I want radioactive waste to be stored safely. Thank you for considering these comments and please send the missing reference pages. Thank you. —Jason Shillingford