COMMENTS ON M-54
November 8, 2002

- Concern was voiced as to whether there was some obstacle that could be instrumental that could be seen in the program. I can see no obvious flaw that will prevent vitrification of the tank waste. It would seem to me we have some substantial concerns and I would like to focus on the ability to define the acceptable end state. I was looking for details and it involves multiple repetitive treatments from the waste – they hold to the form – they hold to the location of the waste but they don't get rid of the waste. Especially the hazardous – the radiological materials. The program concept about multiple handling, multiple processing operations with large quantities of very hazardous materials – outputs from the various steps in the programs are simply inputs to some other stage of processing so you never get to a point where you have an acceptable end state. Now alternatives can be and ought to be evaluated to see if there is a better way – at least one way . . . at least one concept of a processing program that would minimize the number of steps of processing we have, and we could show it would get us to an acceptable end state. Then any alternative technologies and so forth would have to be compared with a known and acceptable condition. It would be better if you could improve it. My conclusion then is that vitrification is feasible to be successful.

- With just three minutes, let me address for two minutes closure versus retrieval and then what I believe is an unacceptable decision putting the cart before the horse of regulatory decisions and public decisions on the construction in terms of reducing capacity for the low-activity waste streams. Number One – Closure vs. Retrieval: The public will not accept these current plans for closure, it is an invitation for disaster; it is an invitation for a political and budgetary disaster and my organization is worried and I know that other public interest groups have tried to express this to Ecology. Ecology is being walked off the plank of this ship into the sharks below. Ecology is being whip-sawed into a TPA package that will require, politically, them to approve closure. Ecology is already sitting on the contractors DOE'S closure plan. Contractors have said you have a week to get us your comments. It is a joke because we don't know how you can close a tank and we don't know what the big ticket issues are, which are supposed to be they say, "Identify them now or forever hold your peace." Well you can't identify them now because the Department of Energy has never done what it was supposed to do in terms of characterization of the vadose zone.

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- The vadose zone and the tank leaks need to occur before you can even do an EIS. You don't know how much waste is retrievable and you don't know the characterization of the tank itself and the remainder of waste after you have demonstrated all practical abilities to retrieve waste. Without that you can't do a risk assessment. Without a risk assessment, you can't do an EIS. It is vital that we separate retrieval from closure and – say you will proceed with retrieval – you will not proceed with closure; it is waste of money; we have too little to waste on this. The cart is before the horse here – there is no regulatory or public decision making process to allow removal of melters. We have always proceeded and said – those of us who looked at it for years – and have said we expect the capacity factor to be greater and now they are saying because we are going to get greater throughput, we are going to eliminate capacity. Instead of saying it's great we can get greater throughput with three melters we can get closer to completing waste vitrification by 2028. And, there is no information on the budget and I hope we will get that information next week.

- Well, I think it was particularly important that Suzanne put that history up there for all of us to see and for the new people on the block to see because they might not all understand some of our concerns without knowing the history we have had. I think the major thing we have seen with every one of their failures is the lack of a fallback position, or cutting off our options at the front before we have enough information to know what we needed. So – I have nothing else to say. Well, I want everyone to think hard about the cutting off of options and the fact that, for example, that if the supplemental treatment for the low-level waste turns out to be not technically feasible, or not financially feasible, do we still have the capacity to push that through on a timely basis. Have we got a reasonable fallback plan that will keep us on schedule without going back to square one.

- I, too, enjoyed Suzanne's presentation and the message I got out of that was that political answers to technical questions has been the norm as far as some of the past history of this program. With that thought in mind, what I think we should be focusing on is the closure EIS that will be in front of us and paramount to our interest with the right sizing of the waste treatment plant. My statement to you yesterday was that, frankly, I didn't care if it was one in three, or two in two. I want a plant first and then I will argue about what's inside it. But, right sizing is important. The third is alternate treatment technologies and down selection if there are to be any is a focus we should keep our attention to, and understand why. The fourth is a technical baseline – what is it – and what will it be and when will it be that. That is what from my perspective is the most important thing to have and to get and while it is going good and it is being constructed, we need to keep our eyes on that because that is where the political answers to technical questions will raise its head again.

- I support the decision to go to a second high-level waste melter and it's going to cost us but we just have to recover the money, or make up for it somewhere else. I also support early retrieval and demonstration on the tanks – we can get into the procedural mess of how clean is clean and how do we permit it and I think we should be much less ambitious in the number of tanks we retrieve and initiate this program. The alternate technologies I have some problems with, and they are not justified economically and I don't have the data yet to evaluate them. In particular the TRU waste, it was commented for $400M we spend in the next few years we will save two years of processing worth $800M net savings. The third LAW melter they don't run to cost – I assume it's less than $400M – their own table in sizing the right melter cuts off 17 years of processing vs. two years for the transuranic. So the alternate technologies are all up in the air and they need to compare apples with apples. One other technology of concern they have not considered or evaluated is switching from a borosilicate to one of the phosphate glass formulations which potentially could lower the value of the glass and increase the throughput of the melters and personally I would request that DOE take a look at that.

- Number One, I think we have to be open to alternate technologies for the next forty years. I don't think we have to put everything in concrete and never consider anything else. I don't think we can settle everything right now and before we start I don't know what happened to the battle cry to get on with it because we seem to be putting more obstacles in the way of getting on with it. The agencies are responsible for protecting the public and the environment and no one at this table represents the public by themselves. We all do. I think we can characterize an EIS for the next forty years and never do a darn thing. I am getting quite discouraged with the idea that we are going to progress and we can blame it on the government and we can blame it on funding and we can blame it on everything else, but let's not us be the obstacle.

- I would like to see lots of improvements in the procedures that we are trying these days and we are successful in. I'm not convinced yet that it's going to provide us with an adequate recovery. These problems will proceed on with that and hopefully we will get some of these things completed in time.

- Well, first off, I am a nuclear operator out at the tank farms and I am excited to see that CHG is willing to work with the Department of Energy to get things moving. Retrieval coincides with closure as part of it. We just can't get too focused on EIS statements and become an obstacle. We need to keep the options open and be flexible. I want to see quality and not quantity in retrieval – let's not get focused on a number and do a quality job. Don't make the mistakes I've seen with grout, you know. They were too excited at throwing it in there. Sand was considered because it's a lot easier to get out than concrete. Some technology might come up 50 years later. We need to be flexible. I've been out there ten years now – since 1992 and they were talking about making glass in the 2000 time frame. And I said, "Right!" They'll be lucky to see 2000. Well it's right around the corner folks. It's coming. I wish the DOE was a little more focused sometimes because you know they get a

project and then they go another way. I would like to see them stick with this one and make it work. It's going to have a big impact on the community.

- Several points. First of all I guess I take the strong exception to Ecology's bias toward vitrification of all the waste that comes from those tanks. Low-activity waste is low-activity waste. We have several million tons of it scattered around the place already. I think it's foolhardy to take the most expensive treatment option, which is vitrification, to the exclusion of other alternatives. I strongly support the completion of the initial vitrification plant to the extent they can add capability for expansion of additional melters and associated features to do so. A little increase in initial cost is well worth it to keep your options open. I think they need to support and complete the evaluation of alternatives for low-activity waste and the potential TRU waste from some of the tanks. These things are very helpful in reducing the amount of vitrification and saving time to complete the job is going to be very important. Just to keep that vitrification plant running for additional years beyond 2028 or 2030 or whatever it is, is many millions and billions of bucks and finally I guess, we need to get cracking on using the available risk assessment technologies to try to get some comparative evaluations of the risks and threats to the public and the environment from the various waste forms we end up with. The low-activity waste is just what I said low-activity waste and we have millions of tons of it already from dug-up soil contamination. Let's try to fight the fear-based hysteria that goes along with nuclear cleanup. Thank you.

- If William Shakespeare were here, he would probably say, "To vit or not to vit, that is the question." I agree with Gordon from the perspective that we have to be flexible and I would like the tank committee to continue to investigate alternatives and continue to request information regarding alternative technologies for the low-activity waste, keeping in mind the additional burden on storage and that sort of thing – that's one of the things I would like to have the tank committee do. In addition, I would like them to closely follow the negotiations that occur between the TPA agencies when these changes may or may not occur, especially as it regards to decision documents and Tri-Party Agreement changes that have to do with tank cleanup. Lastly, I would like them to follow closely tank closure as it relates to the ancillary equipment and contaminated soil mitigation in discreet tank farms. They are not always the same and we want to always remember that we want to protect the Columbia River and the water sources.

- I'd just like to say that I've heard a lot about the equipment and the tanks and I guess my major focus would be for the workers out there at the tank farms. I am also a CHG employee and I have been there for 16 years in the tank farms and I know that sometimes with these accelerated plans and trying to speed work up, we have a lot of people getting burned out and a lot of people working overtime. My own workers in my groups that I represent have over a thousand hours of overtime just for this year; and so my fear is that the workers are going to get burned out and there is going to start to be some complacency out there in the field and that mistakes are going to be made. I'm just hoping we can focus on the workers as well

and their safety. Another thing that Bob also said was about the grout or putting sand in the tanks. I see that as a huge disaster down the road just because of the exposure rates later on if there is new technology just to get that stuff out of the tanks. Those are my concerns. Thank you.

- First we started out . . . very clear regional support we want a vit plant. We pushed hard for it and we got it. Now we're moving down the road pouring concrete, putting bar in and I have to say, I don't think we have a clear path forward. Our previous path has disappeared. There is pressure from headquarter on DOE to speed cleanup – find a way to do it cheaper, find a way to do it better. I think that's great, but I almost feel we now have a knee jerk reaction – throw out four or five alternatives and see what flies and what gets shot down. We've heard different proposals on melters. We've heard different proposals on new technologies. We've heard let's now pull out the TRU materials and ship it off, but there is no real clear definition on how that is going to happen. So, I feel we do not have a clear path, we don't know what path is going to be followed. It's fairly obvious that the regulatory agencies have not been brought into the circle, been consulted and gotten agreement. We have already seen increases in the cost of the vit plant which are probably all very well justified, but from the outsider's viewpoint it's now you guys got something and you're out of control on your cost again. I think before we start down any path there needs to be some definition as to tank closure. We don't have a definition of what constitutes closure, what the risks are, we do not have risk analysis to support closure decisions. And how clean is clean. And I think there needs to be a focused effort to take some of these issues on how many melters, what kind, all the technologies, and tank closure. What do we mean by tank closure? Take the time to establish a clear thought-through and agreed upon path forward. I think there's a lot of open questions to be addressed before the path forward issue can be settled. I would very much like to see DOE come in and say here is our path forward for the tank farms and the vit plant. Here's the alternates we are going to consider, but clearly here are the tradeoffs and here's where we are going to get some decision points whether it's by EIS or how I don't know, but at this point I don't think we have that.

- It's kind of hard to come forth with some ideas for this because my interests, of course, are on the other side of the river, but in listening to it DOE is doing a brain search of each one of us to figure out solutions. They don't have the solutions, but I think the method of approaching our problem is in a smaller package. We are talking about 177 tanks and what we are going to do with each and every one of them. I believe we should go back down and take one tank at a time and see what we can actually do. We don't have the abilities right now to find solutions to the problems that exist there. Five years, ten years, fifteen years. These young guys that are coming out of college, guys and girls, are going to have different thoughts and they are going to be able to find solutions and uses. Now we have a tremendous power source – an energy source that won't quit. We can't take and bury it and say hey, we're never going to do anything with it. Let's stick with this glassification program – put the materials in storage. Don't transport them all the time. Keep them right here.

Let's have the new development, the new thinking, the new ideas in Richland. Right here we have the very best scientists and people that can do this thinking, but right now what we have to do is take one small step at a time. Complete that step, know that it is reasonably close to being the answer we are looking for, but there is the potential that five years from now someone is going to see something there that they can do. We don't want to take and lock up everything so that nothing can happen. This world is going to continue with growth things, new ideas, new people and we have those people coming out of our colleges today. Let's not cut them off. We've talked about these different issues here and I have jotted down some notes. Most of the stuff I thought about has been mentioned. The thoughts are good ones. We want to be flexible. We want to have it so that we can do things to make our future great.

- Thanks, Todd. Nothing in life is completely white or completely black and I think we are at that kind of stage again. At the risk of disagreeing with Harold, I do see a path forward. The difficulty is it's not a rifle shot with clarity, but from an academic standpoint, I like the breadth because there are alternatives. On the positive side we are going forward with a vit plant. We are making progress, concrete is being poured, rebar is in there. I am particularly encouraged. This is the first time I have seen such progress in a decade and I think we are going to get there. Does this mean you should be complacent? Not at all. We should be particularly mindful about a number of areas mentioned. High on my list is the whole question of supplemental treatment technologies. We need to follow that like a hawk. The case regarding the handling of potential TRU waste – that was done in fairly cavalier fashion yesterday when it was discussed. I think that needs to be a high priority item. That impacts on the whole question of whether we do or do not, or will not need double-shell tanks on down the line. I think we need to be particularly sensitive to that. To follow the entire regulatory process regarding how closure unfolds is obviously high on my agenda.

- I think that was very well said, Jim Cochran, very well said, I would agree with what you said. My concern is always the end state. I am concerned about the entire tank farm area and what it is going to be doing in the future for future generations who live here. I am concerned with the safety of the people here . . . of the workers. The environment is of paramount concern to me because I believe strongly that the stake of you people who live in this area is so high that being vigilant and having involvement with the agencies and DOE is completely essential and that is something we must not let up on. We heard a lot of stuff yesterday and again yesterday I raised the question of what is under those tanks – how well are you going to take care of that – what is the risk assessment really going to be. I am really looking forward to the risk assessment aspect of this thing. Vitrification needs to go forward – it is going forward – I think the alternatives that have been proposed need to be investigated. However, I really appreciated Al Bolt the other night when he pointed out the potassium aspect of changing the vit stuff. I think that you have to look at all processes and see which is the best stuff to put in the vit so that any radionuclides that are going to be encased are encased for a very, very, long time so that you don't have these canisters, whatever you want to call them, falling apart one hundred years from now. I think that is key that you really have to look at the quality

of the stuff that the chemicals and radionuclides are going to be put into. I think don't under estimate the importance of that. I do believe that the cleanup has gone forward in many areas and I have been pleased with that, but again I think that the public involvement is just crucial here and I am very much supportive of everyone here who lives in this area because I want the very best for you. Therefore, I believe that communication between DOE, the agencies, and all of us is really critical. I just want you to know that we are on your side. I live in Oregon, but I really care about what happens to you and the whole future here. I want it safe and your communication process is key.

- Quite frankly I fear the political aspect is potentially taking us away from the technical solutions. Given that, I would ask as a board we take every opportunity that is presented to us to look at. When we get an opportunity for public input let's take it – take it seriously and use every advantage we have. Let's look at it. When we get an opportunity to look at risk assessments, let's do it. The other thing I would say along those lines is, if we feel we do not have adequate time to do so, let's say that. Really, that's my concern.

- I really want cleanup and I feel like we're going to get derailed, yet I really want to support some sort of acceleration so I feel very, very torn because I believe we are being sold a bill of goods, I am going to be that frank! You know that this is the fifth or fourth or fifth time I have been on this board and I am sort of a babe compared to a lot of you in terms of how long I have been involved in this. I got very concerned the other night and yesterday when I heard from the new management and the contractors that they did not understand why we don't understand that this is so wonderful. They don't understand why we don't understand – that is a huge concern to me. I also am very concerned that we are going to have some big political changes with the changes in Congress and the tightening down of the hatches and we are going to have another plan in another plan. I just hope that I am really, really wrong, yet I don't want that to keep me from saying I want vit and I want it now. I really heard what Madeline said . . . where is that battle cry, "Get on with this." But to get on with things, we need this vit plant come Hell or high water and the supplemental technologies right now are growing big and the vit plant is sort of plateau-ing here and we can't have that. The vit plant has to stay up here and the supplemental technologies have to stay down here. So, I am concerned. As a member of the tank committee, we have to keep the vit plant first and foremost in our minds.

- Okay, in principle, I think accelerating the cleanup of tanks is a good thing. It would be nice if we could get it done sooner. However, I have the following concerns for accelerating the cleanup of the tanks. I'm unhappy about the use of the term closure to describe a process that clearly doesn't meet the legal definition of closure. My concern is the implication of using that word, when you call it closed. Not necessarily here, but further east in Washington, when you call it closed, I think you reduce the motivation to go back and do anything else when the process is over. I'm real concerned about the acceleration to close, or whatever we want to call it, those

additional 26 to 40 tanks by 2006. And my big concern there is that this means that large amounts of waste will be left in those tanks because I don't know where we are going to put it all. There isn't room in the double-shell tanks to put this waste currently. So I'm concerned that this incentive to close these additional tanks or do whatever it is we are going to do with them by 2006, is going to result in leaving a lot of waste in these tanks. Really interested in the proposed reclassification of some of the waste in the tanks as TRU and if you actually read that PBI, they actually want to turn some of it into low-level waste. We want to be sure – I'm concerned that this not be a purely administrative exercise, but actually involves sampling of the tank contents to ensure they are really what we want them to be.

- I have the same concerns as many people, but perhaps in a little different terms. I am concerned that DOE has made some decisions about what is going to happen and they are forcing those things to happen by PBIs and contracts. They are saying, "Oh, yeah, we're going to do adequate scientific analysis," but they are making decisions assuming that the scientific analysis is going to be adequate. They are also putting a contractor in a really inappropriate role. CH2M Hill is going to have to be in the front in working with the Department of Ecology on tank closure. That's the responsibility of the Department of Energy. Ch2M Hill chose to sign up for that, but I think that is very difficult for a contractor. They have made a policy decision by moving to a second melter, a second high-level melter and reducing low-level melters assuming that we aren't going to vitrify low-level waste. They have not proven to us that there is a safe manner for treating that waste other than vitrification, but they have made a decision in the capital budget, so my strong advice to ORP is take a look at how this board felt about an inadequate EIS for RL. We will not accept an inadequate EIS – you must demonstrate to us scientifically and in understandable terms that the path forward is justified. There are people around this board that have the ability to file lawsuits if you don't, and I think they will. So, please take us very seriously, we want to be sure that this material is moved from the tanks, treated, and is safe to stay in this region forever because, frankly, I don't see it going to Yucca Mountain. I concur with Becky's concerns for the work force. The attitude is work these people to death and make things happen. Well, these are people with families and mental and physical health has to be taken into account. I think the same thing is going to happen when we see the Fluor PBIs, so I think the Health and Safety Committee can play an important role in raising concern of treating people well in a challenging work environment. So, those are my concerns, if we can come up with alternate technologies that work – great! Prove to us they work; prove to us it is a good path forward and don't make policy decisions through a budget instead of a NEPA process.

- This is a huge problem; it is a massive legacy that is here; it is a Columbia River problem; it's a regional problem; it's a national problem; it's a world problem. So, though I nod to the concerns over here, we are all together in the concern about this adequate cleanup for our children and our grandchildren, it's not just a tri-cities, or Washington or Northwest problem, actually. You know this are a lot of perceptions, images, particularly in the politics and support of cleanup. I hadn't thought of it that

way. But, accelerated has a certain sex appeal and a certain marketing appeal. Back east at headquarters or in Congress, "Hey we're accelerating." Well, it's easy to say that anytime you go faster. If you are going faster and if you are not more alert, you have real significant problems. This acceleration may sound great for perception purposes, but if you did acceleration properly to move it ahead, the money up front will save long-term money, but you should have to put more money up front if you are going to accelerate to save money in the long term. Not just take the same money and speed it up which is fraught with all kinds of problems. I share the concern – I don't know all the thinking of the original Tri-Party Agreement, but as I understand it, it calls for vitrification of the tank waste. Now that doesn't mean that they knew everything then, but I think there has to be very good evidence to do anything else with any tank waste unless very good scientific evidence is demonstrated, I assume all through the Tri-Party, so they are going to have to tell the public and tell a lot of us how they can prove there are alternatives to not vitrifying all of the tank waste because I assume it has to change the Tri-Party Agreement. The last thing – the word fear came up. Well, I don't feel hysterical. I don't think it's a matter of fear, I think it's a matter of concern for our kids and grandkids.

- I think we need to have as much money and talk about risks – as I hear more about what we are going to do with things. We need a lot more focus and professional approach on risk assessment as we accelerate.

- I am having major palpitations about political vs. technical and where we are going and those concerns became more elevated when I heard Beth Bilson say yesterday I want to get my hands on the speech that Jesse Roberson gave to the Scientific (?) Advisory Board down in Knoxville. My concerns have never been more elevated than they are right now concerning that. I really appreciated Roger's comments yesterday about the single-shell tank waste and the complexity of it and now getting into a fast closure and a quick and dirty deed. That helps with a little bit of my concern, I am really concerned that, and we need to focus very intently, that this is a very different animal doing the construction and design in tandem and we have to be diligent – the committee has to be diligent in understanding where we are and I know that construction gets ahead of design and then things slow down and then we are waiting out there. The workers are waiting to get building again. If we haven't figured it out, we should not be finishing this. We have to make sure that the contingencies are built in so that we are covered in terms of the number of melters we need in there. I think the supplemental technologies are great, but like Paige, I want to see them down here – I want to see the vit plant elevated – I want to see separation of retrieval from closure. I'm very concerned that we need to start some kind of dialogue about boundaries in terms of cumulative risks and get our arms around that and I don't mean sitewide boundaries, we have to find something that is more discreet and I don't know what that is. But, I think we need that – we can start that dialogue – we need some kind of framework to hang that dialogue on. I'm also very concerned about the ancillary equipment and the piping. I don't like the grout work – never have – never will. I think that was a disaster and I am very troubled with that

and I am concerned about the workers that are there now and the ones that will be there in the future.

- I am a fan of tank closure. It's the prize – it's what we are supposed to be doing. But, I am not a fan of cleanup commitments and that is what led us into problems with spent fuel that we are still dealing with six years later. It also I think puts workers at undue risk. I simply do not understand how we can close 26 to 40 tanks in four years. In my math that means one tank every five to seven weeks. I can't get my head around that so one of the things I would like from the tank waste committee is to better understand not just the need for closure plan activities, but logistically – on the ground how this would work. Do we actually have the capability to do this. Second – supplemental technologies; we don't have an operating vitrification plant yet and as folks who have watched Hanford, we all should know better than most that rebar and concrete in the ground does not necessarily mean that we will have a finished product. So that's where my focus is. Exploring supplemental technologies is absolutely appropriate. In fact, I think it is absolutely necessary because we are going to need to augment that facility out there to finish within a reasonable time frame. However, what I heard yesterday was that we are going to clean up faster and quicker using supplemental technologies decreasing the capability of the waste treatment plant that we are currently building, I can't get that around my head either. Again, I think supplemental technologies should augment that facility but should not take anything away from that facility. I am extremely concerned about making extremely optimistic assumptions about technologies that are as yet unproven. The amount of waste that has been shoved into the supplemental technologies arena is a great deal by my math yesterday, it is on the order of 60 to 80 metric tons per day. That's a lot of waste to be treated even if you are just pumping it into the ground. That makes me worried that we are making very optimistic assumptions about what can be done. That being said I think we should explore the supplemental technologies to the extent that it does not divert our attention away from building and operating a waste treatment plant at Hanford.

- I really appreciate the comments constructive forum of this committee and the healthy dialogue. We need to hear this. This is a great forum. Roy said a couple of things yesterday. He did say he is committed to following the TPA process and he's also committed to TPA Milestones. That's one of the reasons we are trying to accelerate so that we can get to those Milestones. There's not an easy answer and to be honest, we don't have all the answers, but we do have many of the answers. We know that we need to build the waste treatment plant for instance. Going back to what Ken said – That's one of my primary concerns -- political answers to technical problems. I believe our best defense toward that is progress; progress in getting the plant built; progress in retrieving and I'll use terminology working toward closure of tanks. The only way we are going to be able to do that as a field office is to work with Ecology. It's a relationship. Relationships with our families, our colleagues, are not always perfect, but we do have to work through issues and I think we are trying to do that with Ecology; we are committed to doing that, we have to do that. The big key to progress in my opinion is not at the expense of quality

cleanup, but true progress. Actually getting waste out of tanks and actually getting the plant built so we have throughput. If we get that going, it's going to be very difficult to stop us. In my personal opinion whether it's 2028 or 2040, if we get going and we are working toward it and we are making that progress that's where we want to be. Thank you very much for the forum and we'll keep talking and keep working through it.

- I felt like I talked a lot yesterday. Actually having this sort of dialogue we've had yesterday and today is what I think really needs to happen for the regulatory agencies and the DOE because when we are at a potential time of change, whether those changes are big, or turn out to be not so big, getting the input from stakeholders, such as yourself, telling us what you think – I took notes and listened to what everyone had to say as we went around the room. There is a lot of good input there. Even necessarily the input that might be different from something I might give. What I really hear is we need to move forward with the vit plant and keep moving in that direction and I'm hearing so much support for the idea that there needs to be exploration into supplemental technologies because obviously the vit plant as it is planned does not get the whole job done. Then again, I also hear that we need a plan as to how we look at those technologies and compare them to the baseline and have a very well laid out plan as to how our options get considered, so we can all come to that consideration and look at what is in front of us and make good decisions during the next years on how we move forward. You know the original TWRS EIS looked at this big elephant of treating 53 million gallons and said that's just way to big to make one decision on, so they came up with the phased implementation and said start with what you know you can do; start with what you know you have support to do, and then move forward from there. I think that is where we are and I think that's a healthy direction to be going in. I'm concerned that just because concrete and rebar are going on out there, does not mean that it could not be derailed in a minute.

- It's not that EPA is not interested in this project, but Ecology is the lead, but we do have an interest in it – we obviously have broad responsibilities as a party to the TPA. We also have responsibility for groundwater as it is impacted in the tank closure realm. The TPA is the document that guides us on this cleanup and there is a date to get this work done. You saw an explanation yesterday on how those dates might and might not be met. It is our expectation that the date be met and if that means cranking up the vit plant, then I think that's terrific. Philosophically, we are certainly open to looking at other technologies, but the thing that always makes sense is that if technologies have improved, then you look at them and consider them, but I haven't been here that long and some of you guys have been here a long time and the idea that we are now going to start looking at treatability technologies, I can't help but wonder where everyone has been for the previous ten or 20 years. For me, I think you need to get on with the vitrification plant, you need to get it built; you need to get it operating. If on a concurrent path some things are done that find efficiencies or better ways to process materials that will meet the same environmental goals, we certainly are not averse to that at all. We would certainly

endorse it. If they can be cheaper, if they can be more effective. One thing we would like to see is the DOE come back to the TPA agencies and say we are doing better than we thought we would and we are ahead of schedule on money and we would all like to sit down and talk about where that money goes, because there are other risks at the site. The tanks are not the only thing that need to get addressed out there. We want to make sure we don't lose sight of what else is going on out there.

- Don't lose sight of the prize. The prize is vitrification and getting retrieval – don't let anything dilute that. It's silly to be talking about closure right now – let's talk about retrieval. Don't let them make you lose focus. Your job is to keep us focused as agencies – the prize is vitrification and retrieval. Don't let them sell a bill of goods to you. Don't let them oversell the program. Credibility is very important. Keep us honest.

- The Richland Operations Office is really supportive of the Office of River Protection. We view ourselves as partners – we are prepared to offer the best of what we are doing as new ideas or examples and we're counting on taking the best from them and utilizing that in our own challenges. Your point about political vs. technical and a political answer to a technical problem, any self-assessment of the DOE in the microcosm of the river protection or larger, would certainly come to that conclusion – it concerns me tremendously. I guess I can't control where the political wind is going, but I consider it our responsibility and what I would hope the DOE would do is be sure it is technically sound. I've looked at the cost of the detail in my areas. I do not believe they are dramatically different than any other areas on site. I believe there are costs that can be more clearly focused toward moving forward. So I don't see a connection that is hard-wired between acceleration and lack of adequate cleanup. I think there is a third answer and that is more focus. We are doing that – we are doing that across the board and that is exactly what the C3T group fed back to their leadership that they were dramatically disappointed with our efforts to reduce and streamline requirements and we are still working on that and I think there is a long way to go there. In closing, I think we see ourselves as partners in cleanup – in sharing that work force – being sure the work is done safely. We recognize that the systems are the same for all the work forces, or for the most part, and I believe RL is in the forepart for most of the country in identifying and being really focused on what really are the requirements, and communicating them just as firmly as the acceleration requirements.

- I'm encouraged by what I see in terms of the concrete placement and construction progress out at the vit plant site and I also recognize the mere fact that concrete is going into the ground does not mean that we are going to have an operating plant, but I think it is certainly a major step forward. I just hope that work continues and continues effectively the way it appears to be going now. I am generally encouraged by the speeded up process, but my concern is the following. Is it really – is this approach really consistent with cleaning the highest risk first? We've said we are going to clean up X number of tanks and we were also told, as the program management plan was being developed, that we were going to use an approach of

risk based cleanup. I don't see anything that supports the understanding that cleaning these 26 or 40 tanks is going to really result in reducing the highest risks right now. I would really like to see some concrete risk assessments that would provide the scientific basis for support of this. We have heard this echoed around the table many times. I feel the need for definitive risk assessments is very significant. I think some very good work is being done in those areas, but to date the work has been preliminary enough that we haven't been able to get our arms around it and see where it is leading. Those assessments need to be an important element in guiding the decisions. Alternative or supplemental technologies as they are being called now appear to offer some significant hope, but there is also a lot of uncertainty. I think betting the ranch on those technologies carries with it a very big significant programmatic risk and I would like to see that risk assessed in real terms. We are on a journey. That journey to date has been one with a lot of switchbacks. I particularly appreciate the chart that Suzanne put up yesterday showing that and spelling it out. I think we have to remain focused on the actual cleanup or stabilization to achieve a state that is fully protective of the people, the workers and the environment. As the HAB has said so many times, we've just to get on with it.

- I support very strongly Leon's last statement that we have got to get on with it. That's the bottom line. I think this program being outlined for us on vitrification and supplemental technologies and so forth has the potential to get on with it and we need to proceed with all deliberate speed. However, there are the technical and political problems that will cause that to be derailed maybe. We have to watch and make sure that it doesn't happen. As indicated by both Greg and Beth, the political problems are sometimes not easily controlled by DOE management and such. The only way they can control that as Greg alluded very strongly, is to have a good technical program and I think that is very important. It is yet for me to see that that is true and I'll be watching that. One problem that I see on the technical, or concern that was raised to me yesterday by one of the DOE managers, was that to vitrify water was a ludicrous statement I think. Such statements raise my concern about does DOE management really understand the technical aspects.

- My concern is right sizing and supplemental technologies. The current baseline is one high-level melter and three low-activity waste melters, and we're in a process of – shifting to two high-level melters and reducing to two low-activity melters. I guess I am not in favor of reducing to two low-level melters. I know Ron Avanti(?) showed one of his lines with two high-level melters, three low-activity melters and a treatment completion date of 2056. Now you can make a rough estimate and say well gees, what if you added a fourth low-activity melter. So now you have two high-level and four low-activity melters, maybe you're getting to something like 2035, but there might be something like a supplemental technology; something that Hal Bolt suggested that has to do with phosphate-type glass that might help increase the throughput, and you might be there with just that. Although you have the option of looking at the other supplemental technologies . . . so I would like to throw that out as a way of right sizing and supplemental technologies combined.

- I would like to remind the committee to keep their eyes on the prize; and remember that at Hanford, progress does not mean success. We have a wonderful vacant bus lot at Hanford and when that bus lot was in use with commuters getting on buses to go out there it was old, crummy, ancient asphalt. As soon as the curbs went in, the parking lines and the re-pavement, that was the clue for DOE to get rid of the buses and tell everyone to drive their own cars out there. Out as the N-Reactor as soon as the new paint went in, everyone knew that was the death mark and that was the end of N-Reactor. I'm not arguing for buses or the N-Reactor. I'm just saying that progress does not mean success at Hanford. We have rebar and cement and it's marvelous, but now more than ever is the time to keep the eyes on the prize. I'm going to throw a couple of metaphors at us now. The one thing that I do in my life that earns me a little bit of money is that I write a column for the Herald about birds. One of the birds I have written about is the Killdeer. Killdeers make a lot of noise all the time. They always go deee deee kildeee and they are doing that distraction play, pretending their wings are broken night and day – in the air – on the ground—they are always crying. Yet they do their distraction playing most intensely when eggs are about to hatch. I think that the DOE is a pack of Killdeers right now and I think we can't let ourselves be distracted. I think we need to be a pack of Redwing Blackbirds. Redwing Blackbirds rise as one and the technical term for this is harassment and mobbing and predators don't have a chance. We need to be a bunch of strutting Redwing Blackbirds and mob anything that is coming near our precious vitrification plant.

- I was sitting here earlier yesterday and heard the manager of the Office of River Protection say 70% to 80% of the waste that is now in the high-level tanks. Low-activity waste is basically water with a little bit of radionuclides, plus some chemicals and organics, so if we vitrify it, it's like vitrifying water. If this is the Manager of the Office of River Protection, it makes me very worried about the future of the Columbia River.

- Actually as we look at the history of Hanford we see a lot of different actions have taken place. We see canister storage buildings built before we had a facility to produce the logs to be stored in them. We didn't actually understand the size they would be, yet we were able to build the storage unit before we made the logs to be stored there. It appears we are in a process that could produce good results. I imagine 100 years from now that future technology will be anticipated. But, we can't stop the vitrification project; we can't stop cleaning up waste just because someone might have a good idea at some time in the future. We must not lose sight of what we are doing and what we are trying to do and continue cleanup.

- I think we have to focus on the retrieval in that vit plant and I'm all in favor of looking at technologies and I am hopeful that something will be there, but I wouldn't want to call it and put all my eggs in one basket. I find this panel type discussion very useful and I would strongly urge that we do this every six to eight months on this particular topic and secondly, I would strongly urge that senior DOE and agency people be here to hear it. There is so much that comes from this that you can't just record and

get back to those people. Even if we could get some of the headquarters people sitting in on something like this. I want to commend the leadership whoever set this up. My belief is there is a pretty general consensus on where we ought to go – there are some little ripples, but I think it represents a common ideology, a common philosophy, on a path forward.

- My name is John Abbitz – I work at the University of Washington in the Department of Environmental Health in the same suite of offices as Tim does. On behalf of Tim and myself, I thank the board for this mechanism for his participation. Tim wanted his comments to be addressed on the topic of risk and he wanted to follow-up on a comment from Roger Stanley yesterday that Ecology had not seen any documents from DOE on the supplemental technologies. On that topic, Tim wanted to make the observation that several different project areas have been described in the past few days. Each posing a need for risk assessment and each with associated uncertainties. Those project areas being separate treatment of TRU waste in tanks; second – supplemental technologies for the low-activity waste tanks; three – closure of tanks. For each of these categories there likely will be potential tradeoffs with regard to risk categories, such as risk to workers, public health and ecological risks; and in turn different risks for time periods before, during, and after remediation activities. In all of these areas, Tim urges that the risk assessments incorporate evaluations of all these categories and that these risk documents be shared with the HAB and with the public.

- As a second comment, a related concern is for risk to increase with time. With regard to the supplemental technologies, a two-year time frame on its own face seems a reasonable period for an evaluation. Each technology seems to have its own set of uncertainties. If that timeline slips or if evaluating those technologies produces delays in tank waste treatment timelines, then health and ecological risks may very well increase with time. Such increased risk may not be quantifiable, but delays can increase risks such as moving tanks closer to the end of their design life, increased occupational exposure to workers from tank waste, or just providing more time for something to go wrong. The last item that Tim wanted to address was to make the observation that history seems to be repeating itself. From his perspective, the question of glass vs. grout for low-activity waste . . . the question has been asked and answered in favor of glass through at least two detailed technical analyses – the Westinghouse Re-baselining in 1993 and the BNFL Optimization Studies in 1999, and he urges as the evaluation of the supplemental technologies goes forward, that those analyses not be forgotten. Those analyses serve as the current basis for the TPA scheme and if things have changed, it needs to be clear where things have changed. Thank you – on behalf of Tim I thank the board for allowing this avenue for him to participate.