March 19, 1997

Mr. Leon R. Eliason
Chief Nuclear Officer & President
Nuclear Business Unit
Public Service Electric and Gas Company
P. O. Box 236
Hancocks Bridge, New Jersey 08038

SUBJECT: MARCH 4, 1997 MEETING TRANSCRIPTS

Dear Mr. Eliason:

The purpose of this letter is to forward for your review and response the transcript of the March 4, 1997 meeting (Enclosure 1) the NRC held with the public at the Salem Community College to describe NRC activities relative to the Salem 2 restart process and to receive public comments. Notwithstanding, the large number of corrective action reports being generated at Salem, it is of particular concern that six of twenty commenters, including one current and one former PSE&G employee, expressed concern about the continuing reluctance of PSE&G's employees to raise safety concerns at Salem. Please provide a response to this and any other issues that you deem appropriate within 30 days. Written comments submitted by four of the speakers are also included (Enclosure 2) for your review and response as appropriate.

Upon receipt of your response, the NRC will provide responses to issues and questions raised by the speakers as appropriate, along with your response.

Thank you for your cooperation and participation in this process.

ORIGINAL SIGNED BY:
James L. Linville, Chief
Projects Branch 3
Division of Reactor Projects

Enclosures: As Stated

Docket No. 50-311

cc w/encl:
L. Storz, Senior Vice President - Nuclear Operations
E. Simpson, Senior Vice President - Nuclear Engineering
E. Salowitz, Director - Nuclear Business Support
A. F. Kirby, III, External Operations - Nuclear, Delmarva Power & Light Co.
D. Garchow, General Manager - Salem Operations
J. Benjamin, Director - Quality Assurance & Nuclear Safety Review
D. Powell, Manager, Licensing and Regulation
R. Kankus, Joint Owner Affairs
A. Tapert, Program Administrator
J. J. Keenan, Esquire
M. Wetterhahn, Esquire
J. A. Isabella, Manager, Joint Generation
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William Conklin, Public Safety Consultant, Lower Alloways Creek Township
Public Service Commission of Maryland
State of New Jersey
State of Delaware
R. Fisher
P. Gunter, Director, Alternatives to Nuclear Power Project
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ENCLOSURE 1

UNITED STATES NUCLEAR REGULATORY COMMISSION
REGION 1

In re: SALEM UNIT 2 RESTART

A public meeting was held before Loretta B. Devery, Registered Professional Reporter and Notary Public, at Salem Community College, Carneys Point, New Jersey, on Tuesday, March 4, 1997, commencing at 3:00 P.M.

PRESENT FROM NRC:
LARRY NICHOLSON, Deputy Director, DRP
JOHN ZWOLINSKI, Deputy Director, DRP&R
JIM LINVILLE, Branch Chief, Projects Branch 3
LENNY OLSHAN, Salem Project Manager, NRR
CHARLIE MARSCHALL, Senior Resident Inspector
RAY LORSON, Resident Inspector
JOE SCHOPPY, Resident Inspector

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ORIGINAL

MR. NICHOLSON: My name is Larry Nicholson. I'd like to welcome everybody here. I'm the Deputy Division Director in DRP, Division of Reactor Projects, that's Region 1 in King of Prussia. I have direct oversight responsibility for all the inspection activities and enforcement activities at Salem and Hope Creek.

This is an informal type meeting -- we don't want to make this a real, you know, formal stand behind a podium lecture and so forth -- between the key NRC people that are associated with Salem and we've got the key both from Headquarters in Washington and the Regional Office in King of Prussia and the public that -- surrounding interested public in Salem. We have the key folks that are involved in the oversight of Salem.

The purpose of the meeting is to discuss Salem. And we'd like to try to limit the general discussion to Salem and its restart and corrective actions.

I'd like to welcome you again. This meeting is being transcribed. The reason for that is that we can place a copy of this meeting in the

public document room, such as the local document room here. Other folks can have access to it that didn't have the opportunity to come and be here firsthand.

We're glad to see this turnout. We welcome your comments, questions, concerns. We're here to basically describe to you what we've been doing, what we've been finding, where we're going, what we have left to do.

So with that, we have some general points we wanted to make before we kind of throw it open to question and answer comment period. And before we kind of run through the things we've put on the board here, I'd like to start by introducing ourselves. I'll start with Ray -- I mean Joe.

MR. SCHOPPY: I'm Joe Schoppy, one of the Resident Inspectors at Salem.

MR. ZWOLINSKI: I'm John Zwolinski. I'm the Deputy Division Director for Reactor Projects in our Headquarters Office, responsible for the plants on the East Coast.

MR. OLSHAN: I'm Lenny Olshan. I'm the Salem Project Manager out of Headquarters.

MR. LINVILLE: I'm Jim Linville. I'm

the Projects Branch Chief from the Regional Office in King of Prussia.

MR. MARSCHALL: I'm Charlie Marschall. I'm the Senior Resident Inspector at Salem.

MR. LORSON: I'm Ray Lorson. I'm also a Resident Inspector at Salem.

MR. NICHOLSON: So as you heard, we've got a field office at every power plant, Salem is no different. Really the difference in Salem is the field office there is about three times the size of a normal power plant field office. Right now we have nine full time inspectors assigned to Salem. That is pretty unusual for us to have that size of an inspection force at a plant.

So what we wanted to do is go through some points, kind of where we're at, some key things that we're dealing with with Salem right now. I'd like to start with licensing issues over on this one. And Lenny Olshan is the Project Manager from Headquarters, if he could just talk some.

MR. OLSHAN: I just want to briefly go over these three issues. Since Salem has been shut down, we've processed about 20 licensing issues. I've put these three up because these are the three

that are still unresolved and have to be resolved prior to restart at Salem.

The first one involves the fan coolers which right now are subject to water hammer after certain events. And they're making a modification now to install some piping and additional tanks to keep the pipes full so they won't be subject to water hammer when they do that.

The next item is fire protection, which has been a longstanding issue here at Salem, and they've made considerable progress in upgrading their program. And they're still reviewing that and deciding what has to be implemented prior to restart.

And the last thing is the pressure relieving capacity with the primary cooling system. After certain events, the pressurizer gets a pressure spike. And right now they're looking at ways to relieve that pressure spike either by using their spring operated safety valves or qualifying their power operated relief valves. And they're investigating that as a possible modification.

All three of these things will be changed and modified prior to restart. And we're

still doing a review on those.

MR. NICHOLSON: Thanks, Lenny. We have some more chairs over here and there's some more. If anybody needs a chair, we can get some more, have some more brought in. There's three or four extra ones here, so if you care to come in, sit down, whatever. Okay?

The next area is inspection area. We've expended -- last year we expended over 9,000 inspection, direct inspection hours at Salem. Like I said, we have nine full time inspectors there. A typical office at Salem has -- or a plant such as Salem would have three, a senior resident and two residents. That has to do with -- we've got a lot of issues that we've either inspected or are currently inspecting.

So Charlie Marschall is the Senior Resident. He really runs the field office at Salem. He's assigned there full time. He has a staff, a secretary. And if he could touch through some of the inspections, key inspections that we've done.

MR. MARSCHALL: I've been at Salem since the summer of 1993. I was there when both plants were still in operation, when Hope Creek was

operating at the same time. And I originally had responsibility for the entire site, Salem and Hope Creek. But because there was so much inspection that we needed to do for Salem, within the first year that I was there, management in the Region made a decision to add resources to the inspection staff at Salem. And since then we've added another Senior Resident Inspector who has responsibility only for Hope Creek and another Resident Inspector. So that at this point we have a total of four Resident Inspectors down there full time and two Senior Resident Inspectors down there full time to provide coverage for both Salem and Hope Creek.

Since a little over a year ago, we've also added additional resources from our Division of Reactor Safety, which is our engineering division in the Region. We have a gentleman who's the same pay grade that I am that's down there full time. We've got two contractors that are working with us on Salem full time. And we typically have anywhere between two and five or six additional people that come from the Region or Headquarters helping us out at any given point in time.

We've done a lot of inspection in the

past year and a half that Salem has been shut down. Also, these are some of the major team inspections that we've done. Last summer we brought a team of people in from the Region and Headquarters to look at the shape of the design bases documents for Salem and how they were applied.

And as a result of that inspection, Salem has since devoted a lot of resources to taking their own broader, more detailed look at their design bases and, you know, to try to make sure that their design bases is captured and their plant is built in accordance with their design bases.

Subsequent to that -- that was a very general across the board type of inspection. Since then, what we've done is we've brought a team of people in late last year to look at a particular system, the component cooling water system, to do what we call a safety system functional inspection, and to verify in great detail whether or not that system is built in accordance with the design bases.

The team found a number of problems, but they also found that Salem had identified the great majority of the problems that had existed with that system and was well along the way to

correcting, had in fact corrected most of the problems already.

And then finally, as part of the resident process, we have -- and it's on the docket -- we have a restart inspection plan that we're implementing. The resident staff, the contractors, all those people I mentioned previously are implementing the inspection plan. And we've got a number of specific issues that we're inspecting based on the inspection record problems we've seen in the past.

There are 43 issues that have to do with specific pieces of hardware, and there are another 20 or so that have to do with more programmatic things, in-service testing program, things of that nature. We've completed the inspection, the reviews on the great majority of the technical issues, not all of them, but there's still a few of those that are open, maybe a quarter of them. But for most of them, we've completed the review for the technical issues. We still have some of the programmatic issues, maybe half of those that are still under review, and we haven't finished the inspection.

Our intent is between now and the time that we do some of these following major team inspections that Larry will talk about here in a minute, between now and the time that the Salem folks think they're ready to start the plant up, we will close out all of those inspections, if they can be closed. So we still have a fair amount of inspections left to do.

MR. ZWOLINSKI: Charlie, can you talk about how you document your work?

MR. MARSCHALL: Yeah, I should have mentioned that. All of our inspection activities are documented in inspection reports which go -- they're public documents, they're available at the Salem Public Library is the local public docket room where you can get copies of those inspection reports, through the public docket room at Headquarters. Write letters or contacct those folks on the phone. And if you need any help with that, our number at the resident site is area code 609-935-3850.

AUDIENCE: Could you give that again?

MR. MARSCHALL: 609-935-3850. We could help you with how you could obtain public documents,

get in touch with the right people. You could also call our Regional Office in Pennsylvania, and their number is available through the information directory.

All of these -- these, by the way, these major team inspections, the licensing bases and the Salem safety system functional inspection have individual inspection reports which again you can obtain copies of through the local public docket room or the public docket room at Headquarters.

MR. NICHOLSON: What I want to do is kind of step through where we're at in the process, and this from here on kind of goes starting today and going forward. But before I do that, I wanted to kind of touch on how we got where we're at and up to this point.

As most of you may know, Salem shut down both units in 1995. There was a series of problems. Shortly after that, there was what was issued a comfirmatory action letter. That is a letter where essentially the NRC confirmed the utility's commitment that they evaluate the problems at Salem and fix them. And it requires the Regional Administrator's approval before they can restart.

So in place over this process is you'll hear it referred to as a CAL or comfirmatory action letter.

So Salem, Public Service Electric and Gas then went and established what they call a restart plan. They did an evaluation. They looked across the board, what do we need to fix, both hardware, process, people, organizationally, what are our weaknesses, what are our objectives to fix this outage. And then they established a restart action plan with specific items to fix.

We had a series of management meetings in late '95. Their plan is on the docket. It can be obtained also as a public document. We reviewed that and said okay, we now understand, you know, your basic plan, what you plan on doing, and if implemented effectively should fix the problem. That's a key point, if implemented effectively.

Since then, that was in '95, '96 has come and gone, they started on Unit 1 and then had problems with the steam generator, transitioned to Unit 2 as a lead unit. We have expended resources to inspect their performance both on a day-to-day basis and as they correct these problems, you know, throughout the period.

One of the things we've been careful to do is to -- we don't go and inspect and review it until they say they're ready. We don't want to get into a consulting role or we go inspect and we find a problem. They say oh, yeah, we've still got to fix that. When they tell us they've fixed a problem, that's when we go in and look at it.

We have managed our process of managing the NRC resources of what items we want to look at, when do we want to look at. We have an NRC manual chapter, a guidance, a procedure, if you will, and you'll hear it referred to or see it in the documents at 0350. That's just a number on a procedure. But it's a guiding NRC-wide procedure on how to manage an effort such as this. And it's a very sizable effort for the NRC. This is not an easy effort to pull off given the resources.

That chapter, 0350 manual chapter outlines -- it's a checklist sort of thing. It outlines things that we need to make sure of that we've looked at. It takes advantage of previous plants that have been in this position that have had these problems. It takes advantages of lessons learned from others, say you better go look at this.

It also allows us the opportunity to develop a site specific restart list. These are the things just at Salem we want to go look at.

That whole process has been governed or oversought by what we call a Salem Assessment Panel. And it's a group, that's the key members here really, and a few other specialists, engineering-type inspectors. I'm the chairman of it. It's a board, if you will, we meet about every month. We review -- Charlie mentioned the inspection record. We review the inspection record as it's produced. What are we seeing, where do we need to look next, what are the problems, you know. And as this whole process has progressed along, as we see problems raised, we divert resources here.

It allows the flexibility, it allows us -- it gives us Headquarters input, they're key players in this, so it's not just a Regional activity. It really allows us to pull on the resources of the entire agency and communicate throughout our agency on what we're finding.

A key player in all this has been the State of New Jersey. The State of New Jersey has

several very talented representatives that are knowledgeable in the nuclear industry. They have been actively involved, participating in all our meetings, observing us. They accompany us on nearly all the key inspections to independently confirm for themselves that Salem, the problems there are getting corrected.

Delaware is also a small player. We communicate with them frequently. They don't accompany us as much as New Jersey does, but we do talk to those folks and keep in good close communication.

So the Salem Assessment Panel is the NRC really body that focuses on Salem. What we do, a project of this magnitude, our normal management process and so forth, this is really outside the scope of that process. So this pulls together a group and really focuses on what we need to do at Salem.

As we've gone through these major things, issues arise, you know, we've regrouped, we've restructured, we've called on expertise. Charlie mentioned contractors. If we don't have the expertise or resources inside the NRC, we'll go out

and solicit outside help as independent contractors to help. So that's kind of the framework of how we've been running the Salem assessment.

We had a meeting, December 18th of '95 I think it was, in this facility here, that kind of framed this thing out, going into this evolutionary thing here. And so I know I see some familiar faces, you were there. We discussed how we were going to proceed. And that meeting was also transcribed and you can get a copy of that for your reference.

So that kind of brings us up to today. Lots of inspections. We've got a few issues still going. Some major inspections we've conducted. We've still got some significant activities and work to accomplish.

So here we are today, and we have this meeting, this is an important one. It gives us feedback. We get a chance to speak to the public. We work for the public. We're a government agency. It's important to us.

Thursday of this week, we have a meeting in Headquarters. This meeting will be open for public observation, and it's called Design and

Licensing Management Meeting. Some of the problems that are running through the industry now have to do with their understanding and implementation of really detailed engineering calculations, design work that went into the building and licensing of these plants. Some of the issues and problems that have arisen are very subtle. They're deeply buried in real technical engineering work.

And it's -- there's a generic issue across the industry for the agency. The NRC has asked the industry to go and look at this issue. Actually before the agency asked the industry to go out and look, we were asking Salem why do you think it's okay, what is your basis for thinking you can proceed.

We had a series of -- this inspection here that Charlie mentioned happened in the late spring of '96. We went and looked and found some problems. They mounted an effort, a pretty sizable effort to go and evaluate engineering effort, brought in a number of folks through the summer. We oversaw that. We had folks observe what they were doing, the process, how they were identifying and how they came up with their conclusions, what did

they do with their problems when they found them and why do you think that's as far as the problem goes. What's the extent of condition is the phrase we use.

So they did an effort. And we went in this fall actually, in November, December time frame, and sent an expert in, and I mean top notch inspection team in there to take one system and drill very deep in that system. We wanted to scrub it, all the engineering calcs, everything. And that report is -- that's this report here. The report number is 9681.

It generally found -- they fixed a lot of problems with this system. It was a component cooling water system, which is an important safety system. However, they also found a couple of areas that they challenged. One of them was, for the technical types here, had to do with pump runout and ventilation.

So we rolled that over and said okay, Public Service, we need to meet with you and understand what this all means to you, why do you think -- roll all this up and what is your basis, given all the findings, what you've done, what you fixed, is it your conclusion that you can proceed in

the design licensing bases area.

The meeting this Thursday will be for them to present their results to us, their assessment. Here's, you know, here's all the findings collected together and here's our basis for concluding that what we're going to do is acceptable, here's what we're going to do after restart and here's the type of commitments and so forth.

We'll sit and listen and caucus internally and decide is that acceptable, do we need more, you know, how does that square with other plants. It's being held in Headquarters. It's a Region, really a regional meeting, but it's being held in Headquarters so we can get a large group of Headquarters key managers in to listen to it because it will be an important decision. So that's this Thursday.

That's about the only date I have to give. The rest of these are floating dates of when it will occur. At some point in the next couple, three weeks, Public Service intends to do what I've called a mini heat-up. They're sitting right now less than 200 degrees, what we call cold shutdown,

less than 200 degrees and about 310 pounds I guess pressure in the primary. Once they go over 200 degrees, they're what's called -- you'll hear them refer to it as Mode 4. That's the first heat-up.

They don't take the reactor critical, it has nothing to do with the reactor. What they do is start a reactor coolant pump and the pump in itself generates enough heat to heat up. They've got one running right now, right, one reactor cooling pump running today.

What they'll do, the purpose of this heat-up is really to shake down their organization. They've been in an outage, they've been in a non-operating state for a large part of this outage. They've had all the fuel off. So they really haven't had to worry about a lot of plant operational stuff.

They've changed out key operators. They've sent all their operators to be kind of retrained and regrouped as a team. And some of the things they wanted to accomplish is to look at the organization, the plant, when they go through this evolution.

It's our understanding that essentially

what this will mean is they'll let the temperature rise maybe 20 or 30 degrees for maybe two hours and then cool back down. It has nothing to do with the reactor. The reactor will be subcritical. They will not make steam, they will not be turning the turbine, they'll be nowhere close to that type of evolution.

But there's some key things that have to happen when they go into -- when this occurs. They have to have key safety systems set and ready to go. They have to have the containment established. These are all hard requirements. And it will also give us a chance to look at it in really a non-threatening type. There's no real potential there. There's not a lot of energy they're adding.

So the schedule depends on dealing with some of these issues and others, clearing up a lot of paperwork, getting a lot of procedures signed off. But you may hear that in the news, you may see something on that. So we'll be watching it and have a group of folks there in the control room watching it pretty close.

So it at some point, you know, after

that, they'll -- they plan on -- and this is a plan, and it's their plan, it's not ours, but I'm just kind of giving you a flavor of what we expect -- they plan on going back to cold shutdown it's called, or cool back down.

There's some technical issues they've still got to resolve that will not impair them from going to this little mini heat-up, but they need to deal with it. We've got some issues we still need to work through. We will have not released the CAL or comfirmatory action letter at that point.

So they'll go back down, they fix all their stuff, and that will run on for, I don't know how long, through the spring sometime. You know, they can provide the schedules.

At some point though when they think they're close, and very close, not just kind of close, but very close, they're going to docket a letter, send us a letter on the docket stating that they think they're very close; with the exception of the following items, we think we're essentially there.

And that's the first public statement they're going to make, and it's an important one

that they make that statement, that they think they're ready. It's not us saying it, it's them saying it. They're going to say that. And they're going to send us a letter to that effect.

Along about this -- shortly after we get this letter, and it could be as early as, you know, their schedule sometime in a month, two months from now, we're going to have a meeting location, still not decided yet. The Delaware folks want us to have it over there and New Jersey wants to have it over here. So we try to have it in the middle, but somehow we'll try to -- can't satisfy everyone. We'll have a meeting, it will probably be at night. It will be a similar meeting.

It will be to say hey, they said we're ready, here's copies of their letter saying they're ready. It will be another opportunity for you folks and others to come forward, express your concerns, what's on your mind, let us answer questions. And really what this meeting will do for us, this right here, it will allow us to fold your concerns and findings into our readiness team inspection.

So rough time frame, about two weeks after we get this letter, we will launch a major

team inspection at Salem. And you'll hear it referred to as a RATI, Readiness Assessment Team Inspection. I'll try not to use that, but anyway, I'll call it a Readiness Assessment Team Inspection.

They'll have a public entrance. So when the team arrives onsite, it's typically a Monday, it will be at the site, but it will be outside the gate. It will be available for public observation. So you can come sit in a room and listen. Some of you have been to those, and they're not all that exciting, but it will be the team, once again the licensee saying, a presentation, here's where we're at, and it will be here's the team that's going to look at you.

We have a Senior Regional Manager who's going to run that team as a key manager. He's got a lot of experience with some of the other plants that have been through this, Indian Point, some of the other plants in the Northeast. So he brings that to the table.

The rest of the team, it is our intent to staff with folks that have never been associated with Salem, even folks that are not associated with this region, from outside the region, from the Texas

Region or Headquarters, to get an independent review of the integrated performance of Salem. A lot of this stuff we've been doing over here, you know, they have a technical issue, we go in and inspect it. If you pull these inspections, we go in and look at the issue and say here's some concerns, and it's real focused on technical issues.

This team really looks at the whole integrated performance, how does the organization come together, how are they performing, do they have their priorities right, what do they do when they find problems, who do they tell, how do they react, how broad do they look. And it has a real independent element to it.

Typically, this team will last -- be a couple, a week or so on the site and they could go away for a week, regroup, huddle, come back, it just depends on how things are going. But it's a major key player in this process. And then they'll have the team exit, and that will be a public meeting at the site where the manager of that team will stand up and say here's our findings. We believe, you know, in the key functional areas, and again it will cross engineering, operations, maintenance,

corrective action, self assessment, are they critically looking at themselves. So that's the team exit.

At that point, there's typically some issues that if you follow through the history of these things, there's some issues that have to be addressed after that. I mean it's a big team, they're going to ask a lot of questions. There may be some things to follow up on, there typically is. But when all that gets finished and Public Service is required to -- is expected to send us another letter saying okay, you've sent your team in, here's what we've done about it, here's what we have remaining, and we're now thinking we're ready to restart. That's their letter affirming readiness.

And again, it's very important, it's important for them to say first, because they own that thing and they have to run it. So they send us a letter. Then we're faced with a restart decision. And essentially what that is is we'll take all this data in, as we have been for almost two years now, and the key is that Salem Assessment Panel, they'll bring it in, the team manager will come in and say here's our findings. We'll continue to review the

inspection record and what we're finding, continually churning.

We got guys there every day watching it, feeding it back in. And then it comes together, and we'll get Headquarters folks involved, we get the Regional folks together, and we make a decision whether to recommend to the Regional Administrator to amend the comfirmatory action letter to allow them to restart. And that's only until -- only then, if that occurs, can they go critical. They can't go critical until that happens. It's built into the structure.

So, you know, that's a huge decision. The Regional Administrator doesn't make that in a vacuum either. He consults with the Commission, key managers across the agency. That's not an easy decision.

So that's kind of the -- and then I mean following through, if at some point it is decided that they restart -- and I didn't go through the rest of it -- we will have what we call augmented restart inspection. Once they start heating up, they go critical, we'll have inspectors in the control room around the clock. We watch them

very closely. We've also reviewed their plan, and they go to plateaus they call it, and they stop and they look and self assess. So it's a real measured, deliberate stepping up in the power ascension.

Once you restart, it's not just, you know, go. There's a very deliberate -- that process is described in their restart plan. We've developed -- we've done this before at many plants actually developed a restart plan that steps through with that. We have inspectors onsite in the control room and follow it through.

This is kind of the process for Salem 2. Salem 1 is down the road, you know, most of you probably know that the steam generator replacement is ongoing. We've had a separate side project group that's followed that, and they'll start rolling up at some point, but it really hasn't been all that active, except for the steam generator replacement. We've been watching that with some folks that watched it at North Hanover and others. So there will be a test afterwards.

I would offer the folks up here, if they've got anything they need to add, John, comments?

MR. ZWOLINSKI: I might embellish a little bit that we did try to characterize a success path. This preassumes that there is success by the licensee once the RATI or the Readiness Inspection Team has done its job, it's been a very thorough, very comprehensive inspection, and the results are generally positive. It's possible, and we have done these readiness inspections in which the licensee really was not ready. And you then have a pause that can be quite sometime. I'm talking several months, not weeks now for the licensee to take corrective action. And we will actually ask that RATI or the Readiness Inspection Team to come back if they have significant findings.

We can't predict the future as to what Salem would have or not have, but just so you have the logic of our thinking. So if something is awry, we try to identify it, and the plant will go nowhere until we assure that that's been resolved to the staff's satisfaction. And we do weigh very heavy on the licensee affirming their readiness. We think that a licensee that affirms their readiness when they're really not ready may be miscommunicating with us and may not be a self-critical organization.

So we look at that as a very significant affirmation by the licensee.

I think Larry was trying to make the point, but I wanted to reaffirm that, that it's a very important step in the entire process.

MR. NICHOLSON: Anybody else? Like I say, that concludes our kind of walk through the situation here. We want to give a chance for you folks to speak, ask questions. We have a group of folks here that can answer both the technical, specific technical issues or the process questions, or if not, we'll take them down and try to get you an answer if we can't answer it here.

Due to the turnout, I guess we need to limit the amount of time that each speak so we can afford courtesy to all who wants to speak. We have this room until 6:00. Hopefully, if we say we'll start out with a five-minute ground rule here of speaking at a turn and maybe let all the folks that want to speak go through once before someone wants to get back up and ask another question.

AUDIENCE: Is it possible to move to another room? A number of us are standing back here and we're really uncomfortable. We have I would

say, what, at least two and a half hours.

Down the hall, I think there's an auditorium that I thought would be available.

MR. NICHOLSON: I guess we could check, but I believe they have something going on there tonight. Maybe if we could just bring some more chairs in. How many are out in the hall?

(Off the record discussion.)

MR. NICHOLSON: We'll take a ten-minute break and reconvene there then.

(Recess.)

MR. NICHOLSON: Because it's being transcribed, it would help in the folks that want to speak could come down for the benefit of the transcriber so she can hear you. It may be easier for us to talk this way so we can hear you.

Some of the folks that came in late wanted us to reintroduce ourselves just so they know who we are. Again, my name is Larry Nicholson, and I'm the Deputy Division Director in the Division of Reactor Projects in Region 1. That's up in King of Prussia, in Pennsylvania.

MR. OLSHAN: And I'm Lenny Olshan. I'm the Salem Project Manager out of Headquarters, which

is in Rockville, Maryland.

MR. ZWOLINSKI: I'm John Zwolinski. I'm the Deputy Division Director, responsible for plants on the East Coast, overseeing Salem activities, assisting Larry and his staff from the Region.

MR. MARSCHALL: I'm Charlie Marschall. I'm the Senior Resident Inspector at Salem. I oversee the routine inspection activities at Salem.

MR. LINVILLE: I'm Jim Linville, the Projects Branch Chief in Region 1, responsible for the management of the field office at Salem.

MR. LORSON: I'm Ray Lorson. I'm a Resident Inspector at Salem.

MR. SCHOPPY: Joe Schoppy, Resident Inspector at Salem.

MR. NICHOLSON: Is this working back in the back? Can you hear okay back there? With that, I guess we'll start with a question and answer period.

Again, we would like, so that everyone gets at least one run through, limit your speaking to about five minutes. If you could stand, and maybe for those in the back, come down so we can get

the record right, go ahead.

AUDIENCE: Do you have a sign-up sheet there that you're going to refer to?

MR. NICHOLSON: We didn't sign up.

AUDIENCE: We signed up.

MR. NICHOLSON: Well, then you may start.

MR. GUNTER: My name is Paul Gunter. I'm with Nuclear Information and Resource Service in Washington, D.C.

And we've been following the Salem issue precisely because we think that the plant is unsafe. Our concern is that the Nuclear Regulatory Commission, through the use of enforcement discretion and acceptable deviations to the regulations, we're sort of building up to a prelude not unlike the Challenger launch accident. We view this as a very critical moment.

The NRC does have an opportunity to make a difference here, but if you don't enforce your own regulations, how can the public have any confidence in the regulator.

There are two critical issues that I'd like to address from this perspective. First is the

safety function inspection that you all did and second is the fire protection issue.

Now, you're aware that in this safety functionality inspection, you did this vertical slice inspection, or this intensified inspection on three systems, you screened 10. But there are about 40 different safety related systems plus at the reactor. I guess the concern is that on your vertical inspection of those three, you found problems in all three areas that you looked at. Some were identified by the utility and closed out, and then when you reinspected them, you found more problems.

Now, from a public health and safety advocacy point of view, three for three on this vertical inspection should be a red flag that you should be looking further into, you know, utilizing more of these vertical slices to look at some of these other critical safety systems. Yet we don't see that that's happening here, when in fact the red flag is on the field.

And so one question would be why didn't -- why doesn't the NRC take the cue from these three problem areas turned up under this

intensified inspection, why don't you take that as a cue to look at these other areas, these other safety related areas in this same intensified vertical slice.

The second area is the whole issue of fire protection. And I understand that on your checklist, the penetration -- fire barrier penetration seals is one of the issues that you're going to look at. Now, from our concern, we're aware that the whole issue of fire barrier penetration problems and the promulgation of your regulations on that comes out of the 1975 Browns Ferry fire where a worker using a candle to check for drafts caught fire to some fire barrier penetration material, urethane foam, and the material was combustible and the plant went out of control for 16 hours, lost emergency core cooling system. And as one NRC official said, by the grace of God, we averted a nuclear catastrophe at Browns Ferry.

I guess the question that I have for you is first of all what are the fire barrier penetration seal issues that you're looking at, and are you aware that the Salem Nuclear Power Station

is loaded with Dow Corning silicone foam penetration seal material, which is combustible, has been recognized as combustible by the NRC, some of that documentation is up here in the front of the room. Simultaneously, up here is also the Code of Federal Regulation 10 CFR 50, Appendix R, Section 3, subpart M, that says thou shalt not use -- or thou shall use only non-combustible material in fire penetration seals.

Salem is loaded with a combustible material that's supposed to be a barrier to prevent fire from moving from one zone to another. Why hasn't that come to the attention of the NRC?

Why is it that the public has to pound on the door, has to go to the press to bring about something as obvious as a deficiency involving a combustible material installed in this plant as a fire barrier?

MR. NICHOLSON: Okay, let me answer the first question. Let me answer the first question in regards to the SFI vertical slice. We looked at what they did. They did seven or eight vertical slices. We decided to do one deeper. We found really a mixed bag, as you know. We found that they

had fixed a lot of things, but we had some additional questions. We put the questions back on their table.

Really, the heart of your issue is extended condition, given this, what is the extent, how far does this go out, why doesn't it apply to other systems. That's exactly the question that we were asking.

One of the purposes of the meeting this Thursday in Headquarters is to hear them characterize the extent of that condition, why they think they've done enough, and why and what they're going to do industry wide. So the question you're asking is also the same question we're asking.

If you read the inspection report, the cover letter even says, you know, we ask you in this meeting to describe for us why you believe, you know, that these issues aren't germane to others, and we'll have to listen to that. We may do more inspecting, that's always an option.

We'll have this meeting on Thursday and then caucus and decide, you know, have we done enough, have they done enough. So you're right. I mean I guess I would agree with you that we did find

problems, we have to deal with that. And the way we deal with them is we give them back to the licensee and say we went and looked independently and we found problems, now what are you going to do about them.

And it's important to -- one of the most important elements of these plants is to watch how they deal with problems. If they had been dealing with problems, thoroughly addressing the issues, aggressively attacking the root causes of issues all along, none of us would be in this room. I mean that's the key of this is you've got to find your problems and fix them and how they deal with it. So we'll be watching that and we're still, you know, we're still going to decide on that.

As far as the Appendix R fire barrier wrap issue, I guess --

MR. ZWOLINSKI: We recognize that the licensee does make use of various materials that have combustible properties. The staff is currently evaluating the acceptability of those materials in this use. That's a generic issue that's currently under evaluation.

This licensee is making use of 3M

materials as well as other materials. You referred to the Dow Corning material. As of today, I don't have a black and white answer for you. It's an industry issue that we'll be addressing generically, and I don't know if it will be resolved prior to this plant requesting it restart.

There are expectations that the staff holds associated with the facility that if they have materials that are found to be unacceptable, we would expect to see those addressed, but yet the licensee is waiting for the NRC to speak on that matter.

I will say that the licensee is expected to put in place compensatory measures, something that is routinely found with the imposition of Appendix R after it was developed following the Browns Ferry fire to which you alluded. But to speak to your point on removal of the material or addressing the material, it's being done on a generic basis for all plants across the country.

MR. GUNTER: If I just have a quick follow-up point?

MR. ZWOLINSKI: I'd like to, if I

could, add a little bit to what Larry has said about the safety system functional inspection and looking at a number of systems. The burden is always on the licensee to assure that the unit will operate safely. This is predicated in part by the team will indeed have findings, but in and of themselves are those individual findings sufficiently detrimental to the safe performance of the plant that must change its current operating status.

And this essentially comes down to some of the basic philosophy of how these plants are licensed and how we oversee the safe operation of these facilities. These principles are called Defense in Depth, in which you have redundancy that's built into each of the systems, you have independency of electrical systems tied to fuel systems. You have extensive corrective action programs. You have extensive gone to rule making, with our maintenance rule, which you may be familiar with, a number of ongoing programs associated with quality assurance to assure that Defense in Depth is always there.

Even though we as inspectors may have a finding, the licensee themselves may have findings,

those individual issues are assessed collectively as to how important they are, and then a determination is made as to the status of the facility and should it change mode of operation.

So I wanted to make clear that when the staff does do these inspections, we look very hard to ascertain is this plant indeed still safe to operate, noting the philosophy of the agency, and the Defense in Depth that exists, and the ability of the licensee to take effective corrective action and permanent corrective action, not a one-time shot. You had a follow-up question?

MR. OLSHAN: One more thing I wanted to point out, Paul. As I pointed out earlier, I had those three items that we're still looking at as unresolved. The middle one was fire protection. And we're aware of your concern regarding fire barrier as well as other issues. And we have a programmatic issue in the 0350 process that specifically addresses fire protection issues, and we haven't completed our review.

MR. GUNTER: Just real briefly though, you know, one of the major concerns with the silicone foam issue and Appendix R is that the

current NRC effort to address the combustible silicone foam is to remove the non-combustibility requirement from the Code of Federal Regulation. I mean that's what's coming out of NRC in Rockville is that to remedy the problem, they're going to remove the requirement.

Now, to remove the non-combustibility requirement for fire barrier penetration seals is a prescription for disaster. And at some point, you need to take a stand and you need to show yourself as an enforcement agency as well as an inspector. And this is the plea that the public is making to you before the next disaster, enforce your own regulations.

MR. NICHOLSON: Thank you. Next? Yes.

MS. BERRYHILL: I was here 20 years ago when the safety engineer for Salem resigned from the NRC because he said that plant was unsafe.

MR. NICHOLSON: Could I ask you for your name?

MS. BERRYHILL: My name is Freida Berryhill. I'm from Delaware.

MR. NICHOLSON: Thank you.

MS. BERRYHILL: I watched for 20 years

all this widget fixing, all the public hearings. There was never one iota of evidence that the public was ever heard. It's kind of a cover your rear action is what it actually is.

You mentioned the meeting of December 18th. At that meeting, we heard a litany of horrible testimony of personnel dissatisfaction in that plant. All this widget fixing isn't going to do any good when you have people that are scared to death to point out the safety issues to the NRC.

I have prepared testimony and studies over the years, you wouldn't believe it. I was there during the licensing hearing, I was there during the fuel expansion hearing, I was there during the cooling tower hearing. Nothing made any difference.

But I have the difference today. I have it today. I have with me the New Republic, current, March 3rd, and it says that the state of the S and L crisis was the savings of little old ladies in their tennis shoes who feared for their investments. The utilities, with deregulations, better be scared of this little old tennis shoes who is pulling her investments from every power plant

that is involved in nuclear.

I'll give you one example. I had a very good producing stock, several of them in several companies. The best example is Potomac Electric, good company, well run company, good dividends, good investment. My stock is now worthless because it's combined with Baltimore Electric and Gas with involvement at Calvert Cliffs. I pulled it out.

Now, don't think that this is an isolated incident, because we little old ladies have learned to work politics and we have learned to work the Internet. And we have become a lot stronger and smarter than we used to be.

This article goes on to say what all the sit-ins and all the demonstrations over the years could not accomplish can now be accomplished, namely to stop nuclear power, and that is through stockholders like myself.

Now, let me tell you one thing. You cannot afford this plant. What in the world are you trying to do? Salem 1 has a lifetime capacity factor of 57.9 percent. Salem 2 has a lifetime capacity factor of 55.5 percent. You can't make

money, you couldn't make money when it was running, and you couldn't make money now. This plant was shut down through the heat of the summer, it was shut down through the freezing winter. The need for power is not demonstrated.

I have been busy the last two years stopping PECO from going all to the municipalities in Delaware, Newark, Delaware, trying to sell their power, their heavy nuclear power to the municipalities. I contacted every city councilman, I laid the problem out to them, and they voted it down. They're not buying PECO power. PECO, of two dozen utilities in the region, PECO has the highest electric rates with the highest involvement in nuclear power.

Do you know the utilites, when they first started nuclear business, they went before the Joint Committee of Atomic Energy, they said we can't build nuclear power plants, we can't afford it. So they threw them some carrots. One carrot was subsidized fuel. They don't pay for their own fuel.

The second carrot was the Price-Anderson Act, which was passed in 1957, for protection, the Price-Anderson of -- a Class 4

accident.

And the third one was waste disposal for the thousands years that we're going to be responsible for. Without those three provisions, they could not be built the plants. But you know what's going to killing it? Deregulation. That corporate welfare train has left the station. And I will personally see to it the Price-Anderson Act will be repealed as soon as every nuclear power utility is deregulated.

You can't tell me you're making money with this plant. Midland, Michigan --

MR. NICHOLSON: One more point and I will respond.

MS. BERRYHILL: 85 percent completed, stopped construction. Ohio Signal plant, 97 percent completed, stop construction. New York Shoreham plant, a hundred percent completed, never produced an ounce of power. There are utilities who know what the score is. There are utilities who are going to get out.

MR. NICHOLSON: Let me break you right there and respond. I think you raise a good point. However, from the NRC's perspective, the financial

aspect of whether the utility makes money, whether they survive really is not germane to what we're doing here. So, you know, it's certainly your privilege to --

MS. BERRYHILL: You have to decommission that plant too, don't you? Where's that money coming from?

MR. NICHOLSON: Our principal requirement is safety in the plant. We do have to ensure that there's adequate resources to safely operate the plant. Where the stock moves around, it's a good investment, really is not of --

MS. BERRYHILL: Why are you wasting all this money? Who's going to pay for all this money you're wasting? That plant five years from now is not in operation, I absolutely guarantee it, and that's the point I'm making. You've stolen for time, you're fighting for your jobs, fine, you probably have a mortgage and whatever, but that's all it is. It's a shell game.

MR. ZWOLINSKI: Thank you for your comment.

MR. NICHOLSON: Thank you. There was really two points I heard there. One was the

financial aspect. The first one though was the employee concerns aspect, which was in the December 18th meeting, as you mentioned. We did take the transcript of the December 18th meeting and rolled it back in. As a matter of fact, we studied it very closely, said is there any issues buried in there that we should be concerned with. In fact, we did revise our restart plan, which wasn't finalized yet, to account for some of those.

Key in our whole restart effort, and I mentioned it earlier, is the corrective action program. A big element of the corrective action program is the ability of folks at the site to feel that they can raise safety issues and get them addressed adequately. We've continually looked at that. We've watched how they deal with people, we've looked at their program and fed it back to the folks that identify it. We've looked at their employee concerns program, we've documented it in several inspection reports. So that is an important issue to us and it's really one of the center piece issues of this restart. And we've documented -- we looked at it, it's in a document that's called Salem Restart Activities where we discuss the employee

concerns, the ability for them to raise -- folks to raise safety issues, that's very important to us.

MR. ZWOLINSKI: Which, by the way, this document I think is available in the room. It's the January Commission paper.

If I might digress a little bit just to help everyone appreciate the role and responsibility of the NRC, some of you may recall in the '50s and '60s and early '70s, there was the Atomic Energy Commission. In 1974, Congress enacted legislation forming the Department of Energy that was to carry on the role of sponsorship or advocacy of various new power producing techniques. This was looking at state of the art initiatives that President Carter had for a legislative agenda.

The NRC was removed from the advocacy role and placed into the role of focusing primarily on safety and safety first. And thus you won't find in our course of business, our inspection programs, our licensing agenda, anything that gets into financial endorsement or efforts or initiatives that are targeted to the creditworthiness of a facility.

When we license a plant, we want to be assured they have resources to be able to employ

their employees, be able to run the plant safely. That as far as an ongoing oversight of financial activities, we stay quite removed from that aspect, and indeed focus on safety first and foremost, as we are representing you and your interests, to assure the plant is indeed operated in a safe manner.

It's the protection of the public health and safety and the environs that we're mandated by law to carry through with. And we're just an extension of the Commission as we sit before you. We're citizens just as you are. Our job or our role here is to report to you what we have been doing in discharging our responsibilities in looking at the safety of this facility and nothing more.

MR. NICHOLSON: Yes, sir.

MR. BURTON: My name is Willard Burton. I'm from Bridgeton. What are the chances and what is needed to be done by the public to keep these units permanently closed, keep them from ever opening? Could it be done now? Would petitions be the answer? If we got petitions and sent them in, and if so, where would you send them?

MR. ZWOLINSKI: As a member of the public, you have -- obviously you have the

opportunity to petition the company itself. You can speak to the company via shareholders and stock activities. You also have the opportunity to petition the Commission if you find or are aware of safety concerns in which, in your view, there are violations of rules, regulations, in which you would essentially make the argument that the staff should take enforcement. The enforcement would be something as severe as perhaps revoking the licensee's license to operate the plant.

So the burden is placed on members of the public to come forward and say here's a safety concern, it's very egregious, and we expect the agency to take action. And that's done under specific legislation in our Code of Federal Regulations. I'm referring specifically to Part 2.206.

And that would receive critical staff evaluation, whatever your safety concern may be. If you have safety concerns, I wish you could give them to us today just so our inspection and the inspection work force would be able to assess, even though the licensee is going through a very minimal change in operation here in the next few weeks, we

don't want the licensee doing anything that we don't feel is safe. And we want to understand if people are aware of any safety concerns, please give them to us so that we can understand them ourselves and disposition them thumbs up, thumbs down.

I don't want to presuppose I know the answer to the question.

MR. BURTON: Nuclear plants in general haven't been doing too well, and the public was just fed up with it and they generally didn't want it. Would petitions signed and sent into the NRC, would that do any good, without coming up with any set safety violations or anything like that? The public today is getting very concerned.

MR. ZWOLINSKI: The ballot box is clearly a way to address issues that may be before a large number of the public. If you wish to provide the agency referenda or signatures of folks that have their views regarding this particular site and its perhaps operation this year, we would have to take that petition and weigh it on its merits and come to a safety decision about the case that you've made.

MR. NICHOLSON: We have some brochures

that may help you, if you want to file 2206 petition. If you see me afterwards, I can maybe get you a point of contact.

MR. BURTON: Okay, thank you.

MR. THOMAS: My name is Dave Thomas, local resident. The reason we're here, and I would really like to be clear about this, is it's management. The only reason we're sitting here and you're sitting over is they've got a management problem. They've had a management problem for quite awhile. The outage they're involved with is over 600 days, someplace in there.

The way in which they're handling their manpower, the issues of staffing, the people who I talk to in the community -- I'm a local person, I see a lot of people -- bring a lot of questions in my mind.

The NRC is here to ensure the safety and welfare of the public. The thing that bothers me is they're becoming a participant in this company, not directly so, but indirectly so. PS is trying to satisfy you. And they're not doing their job as far as becoming a living company.

The management that they've had in the

last two years has been rolling over. They're losing their key people, as they say. There's a lot of people bailing out, they don't want to work there. The ones that are there are scared to death. And if you think the average worker is going to bring to you concerns, safety concerns, when it comes down to their job, as soon as they can find a job, they're bailing out. That is not a healthy environment.

You know, the action that the people should be taking, the management, is to be getting better, well. And this thing looks like a leper with pieces of their body are falling off and they don't care. They can go on forever. And that's not the point. The point is that it's got to get better.

They don't have a startup date, 630 some days and they don't know when they're going to start up. I understand they've got a lot of issues, but still they don't know. The staffing, just as a point, and again I found out that they're very close to not being able to operate because the number of operators have been depleted. People are bailing out. You know, in the maintenance area, people are

very unhappy. They're doing exactly what they're told. They're not allowed to think anymore. These guys are scaring me to death. I would like you to respond to that and I have one question afterwards.

MR. NICHOLSON: You touched a number of issues. And we would agree that, you know, they've gone through a lot of management changes going into this outage. Again, the employee concerns program, prior to this outage, really was not existent at that plant. It's there, we're overseeing it, we've evaluated it, we're continuing to watch that as part of the corrective action program.

The fact that they don't have a startup date can be -- can be two-sided actually. Once you put a startup date out there, you could send a message that, you know, no matter what problems are out there, we're going to start up on this date. So they've allowed it to -- the startup date to kind of float as they address these issues.

So we really don't get involved in their startup, the published startup date. We just want to make sure that the prerequisite items and problems are addressed before they restart.

Staffing, we have some minimum required

staffing in the control room, as I'm sure you're aware. We've looked at that, they've recast their staff, really the entire organization, you know, they've shuffled around.

Really the place that we will watch a lot of the points that you raise is in the Readiness Assessment Team Inspection. That's when the whole organization, you know, we go in and look at it integrated. And we do on a daily basis, on a weekly basis. The residents put out an inspection report about every month to six weeks. But this Readiness Assistment Team will look at it across the board. Do they have the right level of folks, communications and so forth. So we're watching that area very closely. Thank you.

MR. MARSCHALL: I'd like to add that I think it was you -- someone in here commented on the fact that corrective action, the ability to identify problems and correct them is a key piece of operating a plant safely. And we have looked, it's on the inspection record, it's in inspection report. 9618, if you want to get that from the public docket room, we have looked at the corrective action program and assessed the effectiveness of that. And

that is a big piece of assessment of management effectiveness.

So we have looked at that, and we will look at that again as a part of the Readiness Assessment Team Inspection that will occur sometime after they tell us that they're ready to start the plant back up. We'll take another look, and even a broader look, actually, at the effectiveness of management and the effectiveness of the overall organization in their ability to operate the plant and respond to problems.

MS. BERRYHILL: Excuse me, how can you take corrective action when the personnel is not allowed to say something? They're scared to death to point it out to you.

MR. NICHOLSON: Let's go around the room once and make sure we touch all the bases. You had a follow-up?

MR. THOMAS: I'd just like to finish. The reason I bring that up, the corrective action, is I've had people call me and ask me if I would be a go-between the NRC and them to bring actions up because they don't want to be identified as the person bringing those points up. They're afraid for

their jobs. That can't be.

I mean for somebody to act with a nuclear ethic, you have to be free and have the ability to say what they think. These people are afraid for their jobs. They're making decisions between money, for their kids, for food on their table and their job and the safety and the welfare of the public.

When this stuff happens, when they call me and ask if I would send a letter and would actually be the go-between the NRC and them, there's a real problem, a tremendous problem. And the NRC has control over some of this.

Two years ago, there was an offhand comment made by an NRC person, what did you do with poor performance? Because of that statement, 62 people were fired in two days.

MR. NICHOLSON: Your point, you know, touches on harassment and intimidation, folks that are scared to raise an issue. The agency is very strong that that is completely unacceptable. And we have a track record of taking pretty harsh action against folks when we find that's occurring.

We have an arm of our agency, we have a

field office in the Region of the Office of Investigation. We're kind of technical folks here. We have another set, they're investigators, they go out and interview, was there a chilling effect where you ask folks. We use that process. There's an 800 number that folks can call us. So, you know, we're continually mindful of the issue that you're raising. And if you have specifics, I'd be glad to meet with you following or you can call me. You know, I can give you my number.

MR. THOMAS: That would be fine.

MR. NICHOLSON: I'd be glad to talk to you tonight, tomorrow, whenever.

MR. THOMAS: Thank you.

MS. WEILER: My name is Barbara Weiler. I live in Salem County. I want to know how we're supposed to, after what Mr. Thomas just said, how are any of us supposed to feel safe living here. You just said the harassment and intimidation of people with safety concerns has a chilling effect. It not only has a chilling effect on those people working at the plant, it's got a chilling effect on me.

This firm has proven themselves to us

that we can't trust them. They've continually made bad management decisions. They've made decisions to not do maintenance in the turbine building. The blade flew out of the turbine building. That's an example of well, we're on line, we're running, we're making money, let's keep making money and let's not shut down to do maintenance. They've made those kinds of decisions. How am I supposed to keep my family, that little boy, how am I supposed to keep him safe when this stuff goes on?

MR. NICHOLSON: Well, you know, you mentioned the turbine blade incident. There was a series of events in the early '90s leading up to the shutdown and the comfirmatory action letter. And it's no secret that we were not satisfied with their performance. It was building, and all those events are problems. They were not fixing the problems, they were not doing the maintenance they're supposed to do. The margin to safety was being reduced all through those years. Our job is to make sure there's an adequate margin of safety. And John spoke of Defense in Depth earlier. There's no doubt about it, that margin was being reduced to the point where we could no longer provide adequate resources

to represent you that that margin was acceptable. And that's really where we came to in 1995 and we said that's enough. We couldn't -- I couldn't face you at that point, and I wasn't associated, but I'm speaking as an agency, and say we have confidence that there's adequate margin given the resources we have to apply at that.

Now, you know, and so we engaged with the utility and they also, you know, and I'm sure you've heard them say they shut the units down themselves and, you know, I think through this outage they have done some things that have demonstrated that they've attempted to address those issues, material condition issues.

If you go look at what they fixed in this outage, and we're certainly looking at that, you know, the amount of things they've fixed, the resolve to spend the money or take the time, all those are indicators, and we look at all that and monitor it.

But we have stated, and it's in this paper that we have copies here, that for us to feel confidence that they can restart, there needs to be a significant improvement. You know, we need to see

not just old business as usual, we need to have demonstrated a significant improvement in performance before we're going to be satisfied.

The process, you know, I described is still playing out. You know, we're still watching.

MS. WEILER: How long will you be baby-sitting them and then what happens when you're done baby-sitting them, are they going to go back to their old ways?

MR. NICHOLSON: Well, we're going to keep the Salem Assessment Panel in tact even after restart. So we're in this for the long haul. You know, one of the elements that we look at in all their corrective action is it a short term, quick fix, or does it look like what they're doing should pay long term to correcting the problem.

We, as many folks, you know, saw too many years of short term, quick fix, not addressing the issues. And so, you know -- but to answer your question directly, we will continue to have significant oversight at Salem. You may or may not know that we recently placed them -- decided -- the Commission decided to place them on the watch list plant, you know, that was really an underscoring of

the fact that we're committed to stay in there until we see sustained, successful, event free operation. Thank you.

MR. FLANIGAN: Gerald Flanigan from New Jersey Public Interest Research Group. It's a lobby. I have a history of working on the plant. It's a State consumer environmental watchdog. And you've invited some safety comments. I'd like to summarize some of our concerns.

The statement was made earlier that if the plant was operating safely under safe operating conditions, we would not be here. The bottom line is that we are here. There are a number of problems in the plant. There are a number of things we think the NRC has responsibility for before even beginning to talk about restarting the plant. I think we're being very hasty here.

It's a scary thought to even think about restart with all these problems that are outlined in the team inspection report that I did have a chance to review. And I'd like to just lay out our concerns very simply.

Number one, Salem is not meeting its design bases. It's not operating under its safety

design bases whatsoever. NRC knows this.

Number two, unless Salem meets its design bases, the NRC cannot ensure that the plant will operate safely, the bottom line.

Three, if we can't ensure they operate safely, it would be much too hasty to have a meeting concerning restarting the plant. It should be delayed until we can get a firm statement from PSE&G and from NRC officials that, assuming that thing ever goes online, it will be operating within the parameters that it was laid out to operate in. It's my feeling and I think from the NRC report that this is never going to happen. Maybe part of the reason that NRC and PSE&G officials have been delayed really attacking some of the real problems is that they cannot be addressed. The plant is never going to operate the way it was supposed to safely.

If you look at the special team report that is being discussed here, there are a number of issues that are very hair raising indeed. And nearly so was the gentleman talking about the issues of plant officials and workers afraid to step forth, for good reason. There's a number of issues that are really shockingly uncalled for.

One, the licensing bases systems review, the three systems that were really looked at, the fuel handling, ventilation control area and service waters were not even well understood in what they have in the report called the Final Safety Analysis Report. NRC also found in its report that PSE&G was -- the testing practices appeared weak in many situations. And apparently they weren't even paying attention to testing some of the procedures.

Let me also -- but thank you for again holding this meeting. It's important to be participating. And I thank Ruth Fisher for her role for organizing the meeting and getting Congressman LoBiondo's office to hold the first NRC safety meeting in Salem County. It's high time that people in the area get a chance to address NRC officials face-to-face, and that's very important because this is a very important process.

Number one concern really is that there seems to be a certain lack of commitment throughout. You know, we acknowledge there's a lot of safety issues in the history of the plant. It's time now before we can even think about restart to answer the questions and make sure that the design bases

specifications are met now and before that thing is even ever brought on, and also a plan is made that would put it in that design bases.

Three systems were looked at closely. 10 systems were only, you know, roughly looked at. And of the three systems that were looked at closely, a number of problems were found. You know, we know what those are.

When the plant operates in these unanalyzed systems and their design base is not being met, you can't guarantee that the plant is going to operate safely. You don't know what's going to happen at that point. It's important that the people know that it's been running, given, you know, this kind of open license to operate in an unsafe, unanalyzed condition for years. And we can't talk about restart until all those questions and all those procedural issues are laid out.

PSE&G has a commitment. They're not here. You know, we're asking the NRC to take up their responsibility here and really get commitment from the PSE&G that they're going to actually change the management problems, allow people to talk about the concerns they're having, and also to come up

with a real plan. PSE&G doesn't seem to be very committed at all in this process.

The third point is that Salem and the PSE&G officials have to demonstrate that the plant is going to come up to specs and operating design bases before it's allowed to go back online. There's never been a plan set forth by PSE&G that says this is the point in which we'll fix this problem or fix this problem even while this thing was running.

Now we've got this thing shut down now, there's been the Millstone plant down South shut down because they're outside design bases. We're saying now this plant is already shut down, let's definitely not think about restarting until we can get these design bases and safety questions out of the way.

And thirdly, just calling on the NRC to do a vertical slice inspection that doesn't just look at three systems but looks at the entirety of all operations at the plant.

And also, and particularly looking at Salem 1 problems, I mean as far as I know, and I could be wrong, but it seems likes Salem 1 I know

has the same design as Salem 2. And there's been a number of problems with the steam generation plant there and a number of operational problems. Are those problems being, you know, analyzed and then applied to Salem 2? Is there a complete disconnect or are we picking up the problems there and carrying them to Salem 2? These are not separate entities, they are the same design plan. These are concerns that we need to address.

The number one thing that we need to get from the NRC and I think would make many people here feel better is that before we even think about the restart plan, we really need to address these problems set forth in the team inspection report. I think it's very well said that we realize that PSE&G has not been able to conform to design bases, and we need to have that happen before we can even begin to mention the word restart.

And, you know, I recognize these problems here, and I'm not definitely looking for restart myself, but I'm, you know, these plants I think have demonstrated that they should never go back online. But it's number one the NRC's responsibility that at least the questions they have

raised are at least addressed by PSE&G.

MR. NICHOLSON: Thank you. Thanks for your kind words and acknowledging that we came out tonight.

MR. FLANIGAN: You know, Carney's Point isn't near to anyone except for the people down here, and we have other people, activists that are from around the state down here tonight. It's great to have everyone in a room that we can talk about these issues.

MR. NICHOLSON: You know, this is an important meeting for us too to hear you. The design issues that you raised are on our plate as well. You mentioned some other plants, you know, I mentioned earlier there's a generic, it's called a 5054-F letter that went out to all the utilities saying show us your plant and why you think you're okay in this area.

Before any of that started, we, as the Salem Assessment Panel overseeing Salem, said a year ago we need to address this issue at Salem. And so we set a course of action in place about a year ago to get this issue on the table, and that's why we're having the meeting this week, even before, you know,

the industry was set out to address it.

We look at the findings, we put it all into context. We evaluate it against the margin I spoke about, the Defense in Depth mechanism, the extent of the condition, could it be transposed to other systems, is this a generic issue across the plant. And we come to a decision. We haven't reached that decision yet on Salem.

MR. FLANIGAN: But isn't it true in those 5059 reports that PSE&G hasn't responded to the issues and the out of sight design bases? It seems to me that there's a certain defense of PSE&G, and you shouldn't be doing that.

MR. NICHOLSON: I don't mean to defend them. I'm just speaking where we're at in the process. They have docketed their -- it's a 5054-F response it's called -- they've docketed that. We are reviewing that. That will be one of the center issues we talk about Thursday, as well as what is their long range plans.

You know, the other aspect, for example, in the steam generators, one of the criteria we established for ourselves is if they have those problems in Unit 1, why are we okay on

Unit 2. We brought in experts. We did our own independent looking evaluation of some of their data. We looked at the inspection techniques they used, looked at the failure mechanism that was involved on Unit 1, do we see that on Unit 2. You know, that was, again, one of the issues we put on our plate to say we have to be able to address.

We've done that and concluded that there's -- there is a difference in the condition of the steam generators. Unit 2 steam generators are in much better shape. And we've concluded -- you know, there's a difference, and we've evaluated that using the technical expertise.

MR. OLSHAN: Let me elaborate on that. Even though the steam generators are identical in design, in the early stages of Unit 1 operation, they had some water chemistry problems that contributed to the extent of the damage to the tubes that exist today; and Unit 2 didn't have the same problems.

MR. MARSCHALL: I'd also offer that water chemistry in steam generators is a very complex problem. And whereas the problem that Lenny mentions about the chemistry control from the early

days of Unit 1 steam generators, which is different than the way the Unit 2 has been operated, may have a great deal to do with it. The cause of the problems in the steam generator is really pretty much not well known.

The fact is, however, that the effects are well known and the effects are observable. And based on tests in the steam generator, what we know is the condition of the Unit 2 steam generators is much better than the condition of the Unit 1 steam generators was, for whatever reason. And ultimately there's a program to monitor the conditions of the steam generators on a periodic basis. So if the condition of the Unit 2 steam generators changes for some reason, that will be detected.

MR. NICHOLSON: You also handed us a document, which of course we haven't had a chance to read, but we appreciate you taking the time to write it down. We'll take this back, we'll review it, if there's any questions or concern, I guess we use this address --

MR. FLANIGAN: Right. I think the general concern, to reiterate, is that there seems to be a lot of unassurance of exactly what is wrong

with a lot of systems in the plant and exactly how to get it back to the design bases. And the number one issue that New Jersey PIRG, the concern that we have and a number of other people here as well share, these things should not even be anywhere near thought to restart until we can answer every question beforehand.

And the fact that these plants have been running so long with all these problems floating around is a true testament to the mismanagement that has brought up here in the back, and for good reason why some people have been afraid to come forward. If this has been going on for so long, I don't think it's inappropriate to ask that we know what is the safe operation of the plant.

MR. ZWOLINSKI: If the licensee can't answer that question on Thursday, then indeed it will be sometime before this plant can ever consider to operate again. That's a very significant meeting to discuss the licensing bases, the design bases and why do they believe they have the design bases well-defined and translated, that is reconciled with the as-built plant. Your technical evaluations, your calculations, assumptions, drawings, all of

that must match the plant such that we can assure ourselves from an engineering perspective that any analysis the licensee performs in the future is always predicated on sound, accurate information.

So the point you're making is one that we've tried to say yes to you a couple, three times and to others, it's a very important point, and indeed we are getting after that very issue. And we'll let the licensee speak for themselves this Thursday as to where they believe they are with this particular concern. And as Larry alluded, we'll get back to you promptly regarding some of your own comments.

MR. FLANIGAN: I'm just curious, is it your opinion that PSE&G and the plant will ever be able to come back from the design bases? Just from your experience with the operation of that plant and the overseeing of it, do you think that's actually something that can happen? That doesn't appear to me as a possibility. I mean I could be wrong, but it seems that with the problems that they've been faced with that it doesn't seem that they even want to talk about coming from the design bases.

MR. ZWOLINSKI: Again, I can't speak

for the licensee. They're going to address this specific question on Thursday.

MR. FLANIGAN: But your feeling though, I mean do you think it's something --

MR. ZWOLINSKI: They have applied significant resources to the issue, and have they been able to reconcile their design bases information with the as-built plan, I'd like them to answer the question.

MR. FLANIGAN: They've definitely dumped a lot of money into what seems to be a black hole at this point.

MR. ZWOLINSKI: I really don't have anymore to say on the problem.

MS. NOGAKI: I'm Jane Nogaki. I represent the New Jersey Environmental Federation. It's a statewide organization. And we have 70 thousand individual members and 72 member groups. It's also the State chapter of Clean Water Action, a national environmental organization.

My question is from a technical point and from a management commitment to safety point, what will you accept as a satisfactory solution? Are you looking for a hundred percent satisfaction

on your questions and concerns answered and resolution of problems, or will you accept 70 percent, you know, solution, an 80 percent solution?

My concern is that when you've identified problems and you've asked them to be addressed, are these going to be toted up on a checklist and then, you know, the preponderance of the evidence is going to sway your mind. Because my concern is that even though some of these problems may be able to be technically achieved by PSE&G, in the past, their performance, their management performance has shown that time and time again they've cut corners.

And I'll give you just two examples that I've personally dealt with. The last time that I came to testify at a hearing was regarding cooling towers which were considered the best available technology to mitigate the fish loss from the intake structure, millions of pounds of fish killed annually at the intake structure. PSE&G argued at that point that the cost of building the cooling towers was disproportionate to the benefit. And they offered an alternative strategy of buying wetlands as a mitigation project to restore marshes

and regenerate the fish out of marshes to offset the loss from the cooling structures. So they were making an economic argument of why they wouldn't do best available technology in that instance.

Then when they developed their marsh restoration plan, they used cutting corners again to achieve their marsh restoration by using a massive herbiciding approach to killing fragmitis and trying to regenerate spartium, 5,000 pounds of pesticide applied to the area. And again, the rationale was that was the cheapest and quickest way to achieve their goals.

And so what I'm asking you is how do you know that even if there's a technical way to do what they're supposed to that they won't again cut corners as they've demonstrated to do by every means in the past?

MR. NICHOLSON: Thank you. We've mentioned a couple times a document that's dated January 2nd, '97. It's a document from the staff to the Commission that really hits upon some of your questions, and we have some copies available. But if I could steal a minute from some words we put in there regarding expectations, do we just, you know,

how far, how much is good enough, the term we've used, you've heard us bat around margins of safety, reasonable assurance is another term.

You know, we're not predicting or we would expect I guess if at some point they restart this unit that there will be additional problems. What we would also expect that the number and nature of those problems as compared to what was occurring in the early '90s is significantly reduced.

We've said in this paper that our expectation is that they address the significant problems with the process. That's corrective action, plant equipment and human performance, so we're looking at all three of those elements. We've said in this paper and we've told the utility our expectation is that fundamental change is required to assure that these past problems do not reoccur. I mentioned that we're going to keep the Salem Assessment Panel intact for the long haul.

We expect that they demonstrate -- I'm stealing here from words -- that the previous management weaknesses and flaws in problem identification and corrective action have been effectively addressed. And that's some of that that

you're getting at. You know, we talked about the quick fix, you know, taking the easy way out, not addressing the problems. And they've overhauled their processes, corrective action processes.

And we go in and we look at that and say well, does this have staying power, is this going to escalate, are issues going to escalate on their own merit or what happens to them. We're going to look at them, you know, again organizationally and eventually do a Readiness Assessment Team.

But that's the fundamental problem you're talking about that they, you know, that they -- that plagued this place for years. So, you know, we're in agreement with that.

We also watch them very closely against the requirement, you know, the tech spec, operability of systems, we'll be watching that to make sure we have everything in place. We'll be watching the problems they have, and they're going to have more problems, you know, that we'll watch it and see are they dealing with it now, how are they reacting to that, because they were not reacting well to them for years.

It's important, you know, they have it institutionalized how they react, how to prioritize, how they develop, you know, root cause, do they have the right expertise to get to the bottom of some of these technical issues. Are they sending the right messages to the organization and staff. So it's an issue that we've framed and I think, you know, we hit on the answer to this letter.

MS. NOGAKI: But just coming back to my question, do you expect to a hundred percent? When you add it all up, how do you make that final decision?

MR. NICHOLSON: Well, it comes down to the reasonable assurance, the engineering judgment. You have to look at the situation in total with, you know, if you look, there's some safety nets built in in the regulation with the tech spec, operability, you have to have these systems operable, that's built into the fundamental structure.

MR. ZWOLINSKI: And fundamentally they must be in 100 percent compliance with the technical specifications. Those are the most fundamental requirements that the agency imposes when they issue the license itself.

And then secondly, conformance with our rules and regulations and their commitments and their final safety analysis report, the very issues this other gentleman was alluding to, are expectations the staff holds for this licensee.

Now, does that mean that there could be a widget that's out of place or something askew within the context, all of that got into a little bit of our Defense in Depth redundancy. There's no margin for error with these technical specifications. You must conform and meet your technical specifications, period. If you don't meet it, then you have an action that you must implement.

If you have a rule that you're not in conformance with, you must bring yourself back into conformance immediately, otherwise there's actions that must be taken by the licensee in working with the agency. So there is a push towards the way you're using the word hundred percent, I don't think we mean to convey it will be a hundred percent perfect. That's where we're saying the reasonableness test comes in, engineering judgment.

But for the higher tier, most important documents that the licensee is required to operate

by, yes, indeed, they'll be required to meet all those higher tier documents. The lower tier or sub-tier documents that form the entire licensing and design bases may not necessarily be a hundred percent complete.

MR. NICHOLSON: Thank you.

UNIDENTIFIED MAN: I don't want my name recorded or picture taken, please.

MR. NICHOLSON: You have to make sure you speak up.

UNIDENTIFIED MAN: I said I don't want my name recorded or my picture taken for any people out there, but I just want to say I've worked for Salem for 21 years, and I'm still working there. The point of management people being able to speak their mind and raise those issues, I ask the NRC please look at that very closely. Please go around to the field people, go out and talk to the guys with wrenches in their hands, see if they're comfortable. Get to the grass roots of people being able to speak their minds and having issues addressed and concerns looked at.

I'm a management employee. I fear for my job just being here today. I can't emphasize

enough, please look at that issue, please make that heavy emphasis on your decision on the restart of Salem.

MR. ZWOLINSKI: We will. Sir, to the extent that you could possibly stop by the Resident Office or engage our Resident to give us any type of insight, any specifics whatsoever that would afford us an opportunity or a lead to pursue would be greatly appreciated.

UNIDENTIFIED MAN: I will do that. I'll call tomorrow morning.

MR. ZWOLINSKI: Thank you very much.

MR. AUGUST: I'm Bernard August with the Coalition for Nuclear Power Postponement out of Wilmington, Delaware. Also part of another group called Green Delaware, along with a coalition of environmental groups.

I have a specific question to ask about the earthquake viability of that site. What magnitude earthquake can that plant stand before severe structural damage is done to it?

MR. NICHOLSON: We'd have to look that up. We don't know off the top of our head. But it's described in their the design bases of the

license. So we could find that out for you and get back to you.

MR. AUGUST: How many acres does that plant cover, do you know?

MR. NICHOLSON: We'd have to get back to you on that too.

MR. AUGUST: Who would I call to get that information from?

MR. LORSON: You can call any of the Residents. We're at 935-5151, it's area code 609.

MR. MARSCHALL: That information should also be available to you at the Salem Library.

MR. AUGUST: Salem Library too?

MR. ZWOLINSKI: Chapter 1 of the Final Safety Analysis Report gives a fairly exhaustive description of the site, site characteristics. And then seismic issues such as that you raise I believe is in Chapter 3, but there's an index in the beginning of the Final Safety Analysis Report, and you'll find that readily under seismic.

MR. AUGUST: Well, if you can tell me what chapters in the book, how come you can't tell me what it is?

MR. MARSCHALL: There's a great deal of

design bases information about a nuclear power plant.

MR. AUGUST: I understand all of that, I'm just asking a simple question what, on a Richter scale, what damage occurs to that plant, what is it made to take. I mean you should be able to tell me that. I don't understand that. I mean you can tell me what chapter to go and where it is and all of that, why can't you tell me what that plant can withstand?

MR. ZWOLINSKI: I've been in the industry for quite sometime. I've reviewed many of these facilities and was involved in initial licensing. Unfortunately, you can't commit all design parameters to memory for all plants.

MR. AUGUST: Is there a national standard where they have to locate a site, where you have to come up with a range?

MR. ZWOLINSKI: The agency siting characteristics that we have worked extensively over the last 25 years with industry groups in the area of seismicity would have the design bases earthquake for plants on the West Coast to be significantly higher than those on the East Coast.

It would not be fair to just guess off the top of my head what I believe the number to be. I have a working knowledge in the field, but to give you the specific, unfortunately I don't have it. I can tell you that those numbers have been developed over a long period of time, going back into the late '50s, early '60s, and were part of the initial regulations and requirements that the agency developed and promulgated. So seismic concerns have always been a very important concern for the staff.

MR. AUGUST: What's liquefaction?

MR. ZWOLINSKI: Well, we've used the word liquefaction most recently in the siting of dry cask storage canisters at sites where you'll have a civil structure interaction deep into the earth, where you'll essentially have earth slide along a fault line, along the gradient. You'll also have the potential for the site to see that effect due to movement of terrain, subterranean, deep below the site itself.

And the concern that I've addressed in the past related to dry cask storage was the possibility of having soil movement at the surface of the earth and translated from as much as a couple

of hundred feet below the earth up to the top. So if there's a slippage of soil of a couple hundred feet beneath the earth will that cause soil to move at the top.

MR. AUGUST: Okay. Another question too is I visited your plant today. I notice a complete absence of security.

MR. ZWOLINSKI: At Salem?

MR. AUGUST: At Salem. I drove into Salem today at the Visitors Center. I left there, I took a wrong turn by accident, I drove right by the -- I don't know -- some kind of employee parking lot, around some kind of generating system that's there and then I drove out. And there was not one guard to be seen anywhere.

And I said to myself as I left there, I said to myself I'm glad I'm not a person that is not of ill intent or anything. Because there was no guards. There was no security whatsoever. I could have drove in there with a truck full of explosives and set that son of a bitch off and it would have been all over, and it would have taken me less than five minutes to do that, and I was just astounded by that. And I just don't understand it.

I can understand about the contractors going on. There are always people coming in and out. I just hope that they're people that can be trusted, that there are people that security cleared or whatever your processes are. I know a lot about nuclear energy, you know, from over the years, but the security plan is just something that always has been a rub with me. Because we're talking, you know, not peanuts here, we're talking total destruction of large square miles of area here, uninhabitable. And we're talking about a lot of maniacs out there who have a beef to grind and use any method to get their point across. And I was really upset about that today, and I'm sorry I have to bring this up here. I'm infuriated by that.

MR. MARSCHALL: I was on the site today, and without getting into a lot of detail on what the security measures are, I can tell you that I would normally expect that the area that you drove around, it wouldn't have a great deal of presence of guards. Maybe occasionally, but there really isn't a whole lot of requirement for the presence of security force based on what the regulations require.

Let me finish before you jump to any conclusions. There is a requirement for security force on the site, and at the point where you get to challenging the design bases security force, you would have encountered guards. So it's all according to you have to be familiar with what the general requirements are for security on a nuclear power plant, and you just didn't get to the point where you would have encountered the guard force, but believe me, they're there.

MR. NICHOLSON: They have a security plan that implements their program. And, you know, that's another area we inspect. We're not at liberty to discuss a lot of the security aspects in a public forum, but, you know, I can assure you there was a guard force present at Salem today.

You know, I drive in and out of that parking lot all the time. You know, the parking lot, part -- how far you put the fence out, it's part of the security plan. Parking lots are outside of that, are not normally in the primary security focus area, but it's an area we inspect also.

MR. AUGUST: I know way back when, I was over here at a demonstration, they had a fence

up. And where the old visitor shed used to be a trailer, there was no guards there. I reported that to the NRC years ago and the plant was fined, and at least they had a fence up.

But, you know, how it's set up right now, you can drive right onto the site. The Visitors Center is like, what is it a hundred 55 yards from one of the containment buildings or, you know, the cooling tower that's there. I mean it just floored me.

But the technology that is nuclear, as volatile as nuclear energy, as destructive it is, that there isn't lower accessibility to driving into that plant in its present state, regardless of the NRC regulation. They need to modify them. I want to file a complaint on that. I find it appalling, absolutely appalling.

MR. ZWOLINSKI: If I can offer to you regarding the security issue, if you will be so kind as to give us your name and address, to the extent we could provide you additional information, we would be more than happy to.

MR. AUGUST: I understand.

MR. ZWOLINSKI: Again, recognize that

much of that information in the area of safeguards which is not publicly available, but we'll try to be a little bit more comprehensive in our response to you than we were here at the table, if that would be acceptable.

MR. SOLOMON: My name is Edward Solomon. I can see those cooling towers from my lawn. I think in a lot of respects, Public Service is getting a bad rap. I have been in that area many, many times as an engineer for the telephone company. I know what he's talking about when he talks about security.

Hell, I don't think most of these people could find their way out to the island, and I can see it from my farm. I'm not afraid of it. Where are you going to get your electricity from? You don't want coal. They're concerned about the sulfur. If you shut all the nukes down, go ahead, sell all your stock in your utilities, turn the lights out, then what are they going to do?

I'm not concerned about them. I think Public Service is doing the best they can. Every morning that chopper flies over my farm with that fellow from Newark who is supposed to correct the

problems down there. Philadelphia Electric basically had the same problems and Paquette straightened them out.

Give these people a chance. You people will monitor them. You know what they're doing in there. If that plant isn't safe to start up, you'll shut it down, not Public Service.

Let me say this, I happen to be a stockholder in Public Service, yeah, and so you can say that I have a biased opinion. And I told my wife when I came here I was going to keep my mouth shut. But I mean I've boated out there, I've crabbed out there. I know about the security problem. I've been in the dome, I've been in the control room. I put phones in Bethesda, Maryland for you people. And I think they're getting a bad rap. I think they're trying to straighten it out and I think you ought to give them a chance.

Let me say this, if that plant blows up, I go with it, because I can see the tower from my farm. And I'm not afraid of it. And I don't think all the muskrat packers that live down there in Lower Alloway Township are afraid of it either.

MR. NICHOLSON: We're here to make sure

it doesn't blow up.

MR. SOLOMON: Unplug it, let the lights go out for a week and there'll be a lot of opinions changed.

MR. NICHOLSON: Yes, ma'am.

MS. FRANKHEISER: I'm Barbara Frankheiser. I'm from the Environmental Response Network of Cape May County. First of all, I'd like to tell the gentleman that we found it very easily today, and we saw one very disinterested security guard. And I'm in Cape May County and I don't feel safe with that plant.

MR. SOLOMON: Wait a minute, ma'am, if you go in the visitors area, that's one thing, but I'm going to tell you something, I defy you to go up to that dome where they've got double doors in there. Let me see you get past there.

MR. NICHOLSON: If you folks want to meet afterwards --

MS. FRANKHEISER: I don't want to think about an evacuation on a summer weekend, a holiday weekend, if this plant, something happens and we have to evacuate, because I think in Cape May County we'd be going out by ferry boat. There's just no

way.

Anyway, we would like to call upon the NRC to shut down Salem permanently. We feel it's a safety hazard, equipment failures, safety hazards and mismanagement. We don't feel safe in Cape May County. I'm glad people in Salem County feel safe, I don't think too many do. And we would like to call for safe alternatives to nuclear energy, wind power, windmill fields, solar power plant. This is safe, clean energy. We don't need nuclear power and we don't need coal.

In addition, solar energy and wind power, they have no intake valves to kill wildlife and there's no spent fuel to be radioactive for years and years.

We'd also like to thank Ruth Fisher for being instrumental in setting this meeting up.

Now, I have a question. I'm very naive about the whole thing. I don't understand how an industry can set up these power plants without being able to dispose of the fuel safely and permanently. If anybody has an answer here, I'd love to hear it from you or anyone else.

Why were these plants on line in the

first place, what, 20, 35 years ago when there is no way to dispose of the fuel? It's radioactive and it will remain that way. That's one of my problems.

MR. ZWOLINSKI: When the industry was in its infancy, it was certainly perceived to be well controlled, well understood, and quite bounded as far as the direction of generating electric power. And you had a number of very small plants scattered about the country. Many of these were demonstration projects more than they were large commercial nuclear power plants.

As the industry began to grow in the '60s and on into the '70s, Congress essentially developed a handshake with the electric power industry to find a repository for high level waste. So Congress, our federal Congress has essentially said we will take responsibility.

MS. FRANKHEISER: But they haven't. Where does it go?

MR. ZWOLINSKI: Unfortunately, you probably are as well versed as I am as to the starts and stops of some of the activities across the country, specifically Yucca Mountain in Nevada where we've spent a tremendous amount of money to develop

that particular site. And there's certainly some question as to whether it would ever be used or not for the storage of high level waste.

As an alternative, many licensees today, for the onsite safe storage of spent fuel, this is fuel that was burned in the reactor and stored in a spent fuel pool, licensees are actually putting that in what we call dry cask storage devices.

And the dry cask storage device is essentially a very large protective device located onsite. The fuel is not shipped offsite as there is no repository to ship the fuel to. Those particular casks that I've referred to have undergone extensive design and elaborate controls as to their safety. The majority of the designs that the staff has reviewed and approved and have been constructed have no mechanical parts. There's no moving parts, thus the maintenance of the device itself is very, very low and requires only a monitoring.

Thus it's viewed by the Commission as an alternative to spent fuel storage. Spent fuel storage requires mechanical systems and support systems as these plants operate. The dry cask

storage is self-sustaining unto itself. Some sites have a large number of these dry cask storage canisters, others are planning on using that vehicle to dispose of it.

MS. FRANKHEISER: What is the life of those dry cask storage units?

MR. ZWOLINSKI: Could I get back to you with the specifics? I thought the design life was a hundred years.

MS. FISHER: Just within a thousand years.

MS. FRANKHEISER: That would be safe for -- this will be radioactive for what, 250 thousand years?

MR. ZWOLINSKI: The philosophy of the dry cask storage by the utility industry is this is an interim until the United States finds a way or a manner or a place to essentially develop a repository in form you could ultimately take the fuel from the dry cask storage vehicle and transport it to a longer term repository.

MS. FRANKHEISER: In other words, it's like putting astronauts up in space and say okay, we'll get them down when we figure out how, right?

Nobody knows exactly what's going to happen to this. You don't know the life of the dry cask storage units. Nobody knows, bury it or keep it.

MR. ZWOLINSKI: There is a finite defined life for dry cask storage, each one of these canisters I referred to. So that's well-defined. It's predicated in part on the establishment of a permanent repository in which one day in the future we would move that fuel.

MS. FRANKHEISER: One day in the future?

MR. ZWOLINSKI: To a permanent site, yes. And I would owe you the details of what our regulations require as far as length of time that the dry cask storage has been licensed.

MS. FRANKHEISER: Our group address is on there, if you would send me information.

MR. ZWOLINSKI: I'll be more than happy to give you additional information on that topic.

MR. NAVE: My name is Bob Nave. I'm from Philadelphia Solar Energy Association. I just have a hard time accepting the fact that all of you are experts in nuclear power, I can't believe no one up there can venture an answer as to the life

expectancy of the dry cask systems. Come on, somebody up there knows the answer.

MR. ZWOLINSKI: Well, the agency, in another office not associated with Reactor Operations, handles the licensing and certification of the dry cask storage casks themselves. I'm knowledgeable only because sites that I've been responsible for reactor safety have adopted the use of dry cask storage. And off the top of my head, I didn't want to give this lady a misleading answer. I would prefer to go back to the experts in our agency familiar with that technology. I am sufficiently familiar to be able to represent it, but I don't have the number at my finger tips.

MR. OLSHAN: Salem is not using dry cask storage. They're not using it.

MS. FRANKHEISER: What are they using?

MR. ZWOLINSKI: If you would like details of what I've just committed here, I'd be more than happy to furnish those. So if I get your name and address later.

MR. NICHOLSON: Yes, sir.

MR. HAMILTON: Mike Hamilton from CHORD, Communities Helping to Oppose Radioactive

Dumping. Our organization is a grass roots organization. It's composed of men and women and children, common folks like myself, who live regular lives, don't work in the utility industry.

And it was started because some folks came knocking at our door, offered us zero taxes and said we'd like to give you $2 million to store power utility waste in your backyard, would you mind. We essentially said yes, we mind very much and we said we're not interested.

The so-called low level nuclear waste that power plants produce has to be stored safely somewhere. And it's active, it's dangerous, some of it for at least 500 years.

The common people in the small towns in New Jersey are not interested in the $2 million incentive that the New Jersey Low Level Radioactive Waste Facility Siting Board is offering a small town to accept.

This so-called low level waste, low level is really a misnomer. When you look into it, you find that it's composed of class A, B and C wastes. Some of it's highly radioactive and lasts a long time. It has no bearing, the word low level,

on risk at all, it's not low risk.

What we don't want to worry about is cancer in our families. We're not interested in free college educations for our children. I don't want to worry about my wife coming to me and saying I have breast cancer. We're concerned about the women who may come down with breast cancer from being exposed to low level radioactivity over time.

I don't think these facilities can be guaranteed not to leak. I think some leakage is inevitable given enough time. We're concerned with the fathers who may come down with prostate cancer and won't be able to live a long, happy life and see their children grow up.

Nuclear power plants produce nuclear waste. The waste is I think from Salem 1 and Salem 2 there's 38 hundred cubic feet, approximately, that's put out every year when it's operating efficiently.

What I'm here to say is when it's operating efficiently, it's also a very efficient producer of low level waste, something that can't be made to go away. It can only be stored for a very long time and it becomes a hazard, not only for my

children but my children's children and their children to come.

And by allowing that to happen, we're giving approval for accumulated risk that we don't know the quantity of, we don't know the extent of. You get low level ionizing radiation from hospital x-rays, and I know we all at one time have had a hospital x-ray of some sort, a dental x-ray, exposure to radon.

Low level ionizing radiation is something that every one of us encounter every single day. Everyone one of us in this room is exposed to ionizing radiation, the same kind of radiation that a low level waste facility might emit and might increase the background levels of radiation.

Every year longer that we permit Salem 1 and 2 to operate, it's another 38 hundred cubic foot of waste that enters the waste stream and has to be stored somewhere, whether it's stored onsite at the power plant, at one central location, which is what the states want because it's easier to monitor. It's costly. It cost 3 hundred 15 dollars, approximately, per cubic foot to dispose

of. Right now we're shipping it out to a facility Barnwell, in South Carolina.

MR. ZWOLINSKI: Yes, sir.

MR. HAMILTON: It costs us over a million dollars just for Salem 1 and 2 waste, just to store it in that facility every year.

We're looking forward to a day when I can tell my three daughters that breast cancer rates are on the decline in the environment. I'm looking forward to the day that I can tell my friends who are fathers that prostate cancer is on the decline because we're doing something about it, because we're lowering risk over time that we all are subject to even when things are operating perfectly.

I'd like to tell my children that early detection is not the answer, don't wait until you have cancer. I would like to tell them that I did something to prevent cancer in my lifetime and for their benefit as well.

I'd like to ask you, and I know you know I was leading up to a question somewhere in here, what's being done to safeguard the safety of the public from the waste stream generated by nuclear power plants. And I wouldn't consider

putting it in a small residential area something that is a good way of safeguarding it and separating it from the public.

MR. ZWOLINSKI: So that everyone may appreciate the topic of low level waste, Congress, in 1982, and in enabling legislation in the late '80s, essentially directed that the states take responsibility via the formulation of compacts.

And there are a variety of compacts that have been formed with typically seven or eight states agreeing to come together and identifying a specific waste disposal site within the boundaries of those six, seven, eight states to indeed store safely low level waste.

The genesis of this is really rooted, as you articulated earlier, with the lower level waste, A, B, C, found generated from dental offices, hospitals, waste of that sort, rather than storing it in institutions that provide caretakers, we're looking for a way to move that to some sort of a repository. Most of those compacts across the country have not been very successful in identifying a site.

Power plants generate low level waste

also, as you alluded to. However, power plants are not involved in sending low level waste to any of those compact agreement states to store low level waste. They store it on their site or indeed enter into a contract, such as you referred to with the State of South Carolina, that has been willing to assess fees on a pro rata basis, I think it's cubic feet, and that number has continued to escalate dramatically over the last three or four or five years. So there's a little bit of a dichotomy.

I think your question of what happens with the low level waste from Salem versus what happens to all the other low level waste that's produced in this area. And the waste produced in this area is what somebody has probably approached you on. Low level waste at Salem would be stored typically onsite or shipped to one of these states that have an agreement with Salem to accept that low level waste.

This is not high level waste that I was talking to this other lady about, but the overalls, coveralls that might pick up some minor level of exposure, how do I dispose of that. Typically you try to incinerate it on the site, whatever, you

compact it to a fairly small package.

As far as the numbers of cubic feet, I'm not familiar specifically with the amount of waste that Salem is generating, but they're required to monitor that very closely.

MR. HAMILTON: Just as a quick follow-up, and correct me if I'm wrong, if you measure by radioactivity, the amount of radioactivity that is generated by the low level waste that we ship to Barnwell, 93 percent of the radioactivity is produced as a by-product of the generation of energy by nuclear power plants. The remaining 7 percent of the radioactivity, which is the hazard that we're concerned about, we're not concerned about it falling on our heads, we're not worried about volumetric measures.

What I'm concerned about is the State is going around and they're saying we have the technology to dispose of this safely; furthermore, we'd like to put it in your backyard. And nobody has shown me -- and I don't know what the NRC exactly has to do with this -- but nobody has shown me that it can be safely stored for 500 years in a residential area. In my town they wanted to put it

two-tenths of a mile from a school.

I'd just like to know that the real public health issues are being addressed. It seems to me my impression is this is a closed system. You talk to Public Service, Public Service talks to you. If we have a health concern, we're told that we go to Public Service as shareholders and say we're not going to invest in your company. So they kick up the dividend two-tenths of a point and they get all those shareholders back in.

Where are we left in terms of the negative health effects from the generation of electricity through nuclear power?

MR. ZWOLINSKI: Siting a low level waste repository in New Jersey and associated the compact states is a State issue. And the mechanism that is used or the device that would be used to store that in, the agency would be involved with, but it's left to the State as to where -- the State and the other compact states to decide where the waste would be landed.

So that's not -- that's a State issue. I'm not aware that this electric company or any other company is involved. That's a State

Government issue.

MS. BERRYHILL: May I ask a question, please?

MR. ZWOLINSKI: I think we're trying to go with everyone who hasn't spoken yet.

MS. BERRYHILL: It pertains to the compacts.

MR. ZWOLINSKI: Yes.

MS. BERRYHILL: Delaware voted to join the Appalachian Compact. I served on the Governor's Advisory Board at that time, because the '82 Waste Policy Act was heralded as the solution. There was a lot of politicking, a lot of states didn't pass it. Of all the planning, can you tell me how many compacts are actually now effectively operating?

MR. ZWOLINSKI: I'm sorry, you're into an area that's beyond my expertise as far as the effectiveness of each of the various compacts.

MR. NICHOLSON: The answer is none.

MR. McLAUGHLIN: The question was how many are effectively operating.

MR. NICHOLSON: Right.

MR. McLAUGHLIN: Yeah.

MR. TOTA: Tony Tota for Clean Ocean

Action. We're a coalition of organizations of about 75 organizations in the State of New Jersey. And I have a question. Would you allow the Salem to restart if it's in violation of other Federal regulations?

MR. NICHOLSON: We'd have to look. I guess, you know, like OSHA?

MR. TOTA: Looking at the Clean Water Act, Section 316-B having to do with best technology available for preventing adverse impact to the environment with regard to the intake system.

MR. NICHOLSON: I guess although it wouldn't be under our expertise, we would certainly take the specifics of a concern you've got and, you know, both evaluate it and hand it to the appropriate agency that would deal with that, whether it be State or Federal. I'm not familiar with the act you're speaking of. But if you've got some specifics, I'd be glad to --

MR. TOTA: As Jane had mentioned earlier, PSE&G has used the minimal in regard to the way that they've been treating different things. They do the minimal amount of things available.

A perfect example has to do with the

cooling water system at the plant. And the best technology available was cooling towers. They opted to do the marsh mitigation, which is like treating a cancer with a Band-Aid, it does little to prevent the impact that the cooling water system is doing on the environment. Essentially they're destroying the base of the food chain by sucking 3 billion gallons of water a day in once they're back in operation, and essentially almost sterilizing that water, killing all the microorganisms, which are the base of the food chain.

Under the federal and state law, they must use the best technology available. Instead they opted for this plan. They got the DEP to back them in the plan. And it still does not meet the requirement of the Clean Water Act. And here we have a law, and the law is being violated.

And, you know, that's just like saying oh, it's illegal to drink and drive except for on Saturday nights. It's a law, but it's being violated. And if you allow them to restart up, they're going to be in violation of that law.

MR. ZWOLINSKI: As Larry alluded to, we're regulators, heavily focused on the safety of

operating reactors, that's what our training is, our natural bents. You do raise a fair concern. I guess I was under the impression that the State had regulatory authority over the marshlands, wetlands, and any effects the site had on the environs, and it's a matter to share with the State.

We can certainly take the transcription and any other materials you may have or wish to provide us and forward it not only to the State, but if there is a Federal agency that's involved, get them involved and at least make them aware.

Going back to our opening comments and remarks, our purpose in life is to assure that if this plant ever operates again, it's operated safely and in conformance with rules, regulations, what have you. And I don't want to minimize your issue, I just want to say we'll be receptive to help you out, but recognize where our focus is.

MR. TOTA: But a lot of this has to do with safety issues, because they seem to be taking the minimal amount of effort that they can get away with. Here if it's with the environment, again if it's safety, what's the future for closedown of the plant. Here they didn't put money aside for

building cooling towers. They had 16 years to save money set aside for building the cooling towers. Instead of investing properly, they didn't do that. Eventually when they have to close down this plant, do they have the resources now for dismantling the plant, the resources for handling the waste material?

MR. ZWOLINSKI: Now you're getting into an area where I can speak a little bit more forthrightly. The decommissioning fund that this plant, both units, are required to have has just been revisited by the agency. As far as across the nation, rule making that has taken place to assure that indeed they're fully funded to account for uncertainties, what have you, such that when the day comes that the plant does enter the decommissioning mode, there would be sufficient resources to indeed bring adequate closure to this site, the safe closure of the site.

So the decommissioning laws are very current and do require that the licensee maintain a reserve fund to address the entire cost of that action.

MR. TOTA: I just feel that the Salem

Power Plant, if it goes back online, should be in compliance with all federal laws. And I have a statement.

MR. NICHOLSON: Ms. Fisher.

MS. FISHER: My name's Ruth Fisher from South Dennis. First of all, I'm glad to hear Mr. Zwolinski say if this plant operates again. It seems to mean a change of tone.

I have many questions with regard to grasses, radiation, biomass, and storage from the dry cask system. First I'd like to say that in the past, I've attended two NRC meetings. One meeting focused on cultural problems. I stayed for about four hours of what I understand was a seven-hour meeting, filled with inside jargon that made it seem like we could fix everything with Dale Carnegie courses, and everyone would be smiling at one another once again. They even had one fellow jump up from the audience and swear "I love my company."

Maybe the problem, underlying cultural problem was in fear of what this plant was all about and fear of speaking out. I wonder if Mr. Marschall ever had anybody come from within the plant with a problem, confronted him with it, and if so, what

that problem was, or if any of the others that are there, onsite inspectors, ever had anybody come to them.

MR. MARSCHALL: The answer to your question is yes, I've had a number of occasions where I've had people come talk to me directly or send me mail, call me on the phone to voice concerns about problems at the power plant. A wide variety of problems, some of them having to do with processes that they used to operate the plant, some of them having to do with specific equipment problems, some of them having to do with cultural issues, some of them having to do with many concerns that have been voiced here tonight. Yes, people do come forward and talk to me and the other Resident Inspectors on a fairly regular basis.

We have a process to record those concerns and put them into our inspection program. And we go out and do inspections to look at those concerns and determine whether they're valid. And if they're valid, to ensure that the problems get addressed. So the answer to your question is yes, people do come to me with problems.

MS. FISHER: I really am relieved to

hear that because I felt that there was from some things I heard tonight and, you know, I have no access to the plant beyond the inside problems. It's very hard to gather them from sitting through those meeting at which the public cannot ask questions or there can be no dialogue such as there is tonight.

For that reason, one of the primary questions that Paul Gunter started the meeting with, you said you would ask PSE&G about in Rockville, Maryland. I would urge you to change your plans and have that meeting here, the one coming up on Thursday, and that all futures meetings be held here rather than in Rockville, which is totally inaccessible to myself and many other people.

I don't understand that. There seems to be some distrust of the NRC. And I know from Senator Biden's office that the GOA is preparing a report, the GAO I guess it is, and it's supposed to be ready shortly. Would you consider waiting until that report is out before considering whether or not to restart Salem at all? Do you trust that agency?

MR. NICHOLSON: Do we trust GAO?

MS. FISHER: Yes.

MR. NICHOLSON: I have no basis to say I don't trust them. I guess I'm not intimately familiar with the GAO. I am aware of the report that they're generating. Yeah, I mean as far as I'm concerned, they're a very credible agency.

MS. FISHER: So why not wait until this independent audit of what's happening at Salem is available to you before making any decision?

MR. NICHOLSON: First of all, we're not really aware of the schedule that that audit will be available.

MR. GUNTER: May.

MR. NICHOLSON: Whenever that's made available, we will certainly view it and factor it in to the way we are doing business, but, you know, I don't know if it's fair to wait until something comes out.

I think the thrust of the audit, it's my understanding, is looking at how we've handled Salem in the past, the problems they've had, what actions the agency has taken. We feel very confident with the recent actions of our agency with the 0350 process, the assessment panel, the decision to include them on the watch list is the right thing

to do, and we've been applying the correct resources to it. So we feel confident in the direction we're going. Will we take their findings under advisement, sure.

MS. FISHER: But you won't guarantee that you'll wait until their report is in?

MR. NICHOLSON: I wouldn't offer that guarantee. We're going to make the decision, you know, with our processes, the decisions as we're presented with them. And just as GAO has to decide whether to issue the report and how to proceed accordingly. The two are not obviously coupled.

MR. ZWOLINSKI: As I said to another gentleman, we're kind of the folks on the firing line, responsible for reactor safety. And ultimately we have the inspectors, the licensing folks, the technical folks that will make decisions as to are things in good stead at this facility. And I still don't know if they are or are not. The jury is still out. We have a job to perform.

The day will come in which many of us will feel that the licensee is either in good shape or not in good shape, whatever will be will be.

If we were to make a recommendation to

our management that we believe this plant is ready to restart, my impression of what's going on with this independent audit of the agency is that our Commission and our more senior executives will take it under consideration and advisement. And they're essentially the folks that will review the transcript, and they'll be asking themselves the question should we allow Salem to proceed in light of a report that hasn't been provided or has been provided.

If we have the report, we will certainly take it under advisement. But I don't believe -- we're really not the right folks, other than whatever the message from the report is, to try to implement or learn or respond to. We're focusing on is this plant safe and operating. Do you understand the distinction I'm trying to make?

MS. FISHER: Yes, I understand completely, but --

MR. ZWOLINSKI: So I think the agency, trying to speak for a much higher level of the Commission, will not move forward without at least some consideration of that report. And I don't know, I can't speak for our Commission as to what

they may or may not do, but I would think that they would want to understand that report before the plant restarts.

MS. FISHER: Well, yesterday I spoke with Larry Nicholson, and many people, including apparently Senator Biden, are concerned about the makeup of the NRC. And he sent me a resume of Shirley Jackson, who's the chairman of the NRC. He had asked that there be a full NRC board vote on this restart, but apparently she wouldn't recuse herself from any vote because she has been and may still be on the board of PSE&G.

MR. ZWOLINSKI: Our chairman would not be able to serve on the board of the utility she's regulating, so she's not on the board. She's working in one capacity and is the chairman of our agency and that solely.

As to what is the Commission's role in the restart of this facility, we're following our internal policy and guidance with respect to plants that are considered on the watch list and Category 2 plants. Those plants typically are not brought to the Commission to ask the Commission's endorsement of the staff activity. The staff will keep the

Commission informed of its plans and will proceed. And if the Commission wants to intervene, they always have an opportunity.

MS. FISHER: But --

MR. ZWOLINSKI: And I think that's kind of the thrust of the letters that Chairman Jackson wrote to Senator Biden.

MS. FISHER: Well, I haven't seen that letter, but speaking for myself, I think that Ms. Jackson -- in fact you may tell her that I think she should either resign from the NRC or vacate herself totally from PSE&G. She doesn't walk in both places, and somehow she should straighten that out.

MR. ZWOLINSKI: I'm certainly not aware that she's in both places whatsoever. And as the head of our agency, she'll be made aware of your comments and take whatever action she thinks is appropriate.

But I can certainly assure you that she does not wear a hat for an industry organization and then work for the Federal Government. She has one job and one job only. And she's trying to lead the NRC forward to be a better, stronger, more effective regulator in the future.

MS. FISHER: I hope so. There are -- I have a number of things, but because it's so late, I'm going to just dwell on one of them ever so briefly. And it relates to what Tony Tota has said.

I work on a number of issues, and recently I have been concerned about the number of eels harvested in Cape May County. It may sound miniscule to you. And also about the number of terrapin turtles that are accidentally caught in crab traps. Those people that hear me at the public meeting are most annoyed to see me wasting my time talking about the few animals they are taking when PSE&G will be sweeping zillions, immeasurable amounts of larval stages and even small fry through these intake tubes again. You see the dilemma for somebody like me. How can you help? How can you stop it once and for all? What agency do I appeal to? You say it's not you, well who then?

MR. MARSCHALL: I don't think we have the exact answer to that. I think my sense is that it's the State that is involved in that. There may be Federal agencies involved in those issues as well. We certainly are not. But if you can give us your concerns, as we offered the other gentleman

here, one of the things we can do is be sure that the concerns get conveyed to the right people and, you know, maybe put you in touch with the right people.

MR. NICHOLSON: We work with the State pretty closely.

MS. FISHER: I know all those boys, you know. There's no working -- they can't enforce, for instance, if you catch large sturgeon or turtles or whatever, I know you have holding pens for them and so forth. Imagine the fines for a fisherman if he destroyed that much life. Why can't there be some way that the NRC attacks this problem as well?

MR. MARSCHALL: Well, the only way that we could attack the problem is if there were laws that were passed that the NRC enforce. Currently there aren't any laws that we measure the compliance for a licensee that deal with those kinds of environmental issues. That's what it would take for Congress to pass a law.

MR. NICHOLSON: I think I understand your concern. And I think what we need to do is find out who's the right person and communicate to both them and you the issue. So I mean I'll

certainly take that as an action to do, you know, to get it -- my sense is you want to get it off top dead center, your frustration, who can I go to.

MS. FISHER: Well, an obvious answer is to close the plant, then it won't happen.

MR. NICHOLSON: I can find out who to go to.

MR. HUFTY: My name is Jack Hufty. I don't represent any organization. I'm just here for my interest. But as I've listened through the afternoon, I had certain thoughts that came to me. Maybe you can straighten me out on some of those.

Early in the proceeding you mentioned that the NRC's function is not to look into the fiscal operation of PSE&G or any other group you regulate, but just to look at the overall safety. But I'm concerned about money being a motivator. I do not understand the technical issues, but I can tell you that I'm greatly concerned at the possibility that you may have a situation where the operator cannot make money operating the plant and they cannot afford to close it down. If that situation would exist, that would scare me.

MR. ZWOLINSKI: The decommissioning

fund I alluded to earlier is totally independent of what the licensee's activity has as far as whether the plant is operating or not.

MR. HUFTY: I understand that part of it. What I'm worried about --

MR. ZWOLINSKI: And the company, not the plant, the company is required to fund the decommissioning fund whether the plant is making electricity or not.

MR. HUFTY: I realize that, but what I'm worried about is the financial effect of a write-off of that magnitude to the company, not so much the money per se itself, but if they project a certain amount of income and if in fact they can't make that income, that's going to have an impact on their fiscal position. And insofar as that would effect the company, that would bother me.

The second point I had is I have heard throughout the afternoon people allude to employee morale or the inability of people to talk freely at the plant. I do not know that to be true. But I'm sorry, there was people hear from the plant who left earlier, I do not know what the truth of that allegation is or not. Obviously that scares the

hell out of me. Okay. If in fact those people feel free to come to you, that's fine. I'm satisfied with that. Please, again I'm representing just myself as a citizen, please dig into that as deep as you can.

The third point is the gentleman up here has said that the fact that the plant went to watch list was in fact -- it underscored your concerns that you had with the plant operator. The representation that was made in the local media was in fact this was not really a change in situation since Salem had in fact been under increased scrutiny at that time.

I would like you to address the fact was there in fact a change of status, not only a change of status, but really was there a change in your mind in this situation when you went to the watch list, or was it in fact the reality of putting somebody on a list when they'd already been on a list in the past.

And finally, just one final thing, I do not understand the term design bases and why it's important. And I wonder if somebody can explain that to me.

MR. NICHOLSON: Okay. Let me hit on the -- regarding the watch list decision, I think the letter that went out explained it. The decision to go on -- to place them on a watch list did not imply that what they're doing today or have done, the direction they've taken during this outage has taken a turn for the worst or we have, you know -- is a statement that it's not adequate. It's simply a recognition that over the last couple of years, the processes I mentioned, the 0350 procedure, the assessment panel, all those are things that we do to watch list plants.

So it's essentially a squaring of the record that hey, we're treating them like a watch list plant, it's time we call them that and that we maintain that vigilance until we are assured that they could perform sustained performance at a level that's needed to come off the list. So that's what I meant by underscoring. I hope that clears that up.

You mentioned your concern of employee concerns, again, we agree. There's signs around the plant offering ways to contact the NRC. There's phone numbers. There's -- we have an office there

with a big sign on the door. We are out in the plant. I've been a Resident Inspector and a Senior Resident Inspector at plants. I've had guys meet me at parking lots, call me at home. That's not unusual.

We have a process when we get those types of concerns and we put them into a process and we communicate directly with the individual as opposed to the plant and, you know, that's ongoing all the time. I mean we monitor the activity in that area as an indication of, you know, if a lot of folks are coming to us, where do they stand in that area.

But another, as part of the corrective action program, frequently these plants that have got into these situations, maybe QA was the only group that wrote up problems, and you've seen those in plants. If you look at these, I mean one of the early findings at Salem when they put their new corrective action program is they implemented via PCs, anybody could go in. But, you know, it was lost on them that there's a lot of folks that are not comfortable sitting down at a computer and entering it in. That issue was raised and they

addressed it. I mean it's that kind of thing, you've got to continually talk about it, the importance of addressing issues and having a healthy challenge of the corrective action process.

So, you know, there's no doubt about it it's a center piece big issue at all these plants. Certainly at Salem, they have not done well in the past. They've got the program in place and we've inspected that, we're watching it. We're watching how they -- the back end, once problems get identified, what are they doing with them? It's a constant effort. Design bases?

MR. HUFTY: I'm sorry, before you get to that one, because I'm sure there's a rather specific answer to that, could you address the fact that again my concern is if an operator in today's environment simply can't afford to operate the plant and can't afford to not operate it.

MR. NICHOLSON: Well, we have, you know, as we've stated up here, a set of regulations that there's no choice they have to meet. So that's not an option. Or they take actions as prescribed, shut the plant down is one of them, if they can't meet a certain set of requirements, so that's in

place. It's mandated, there's no option there.

The other things we look at is, you know, we are always watching back logs of items, you know, are they letting it pile up, are they dealing with it. All those are indicators that they're not addressing aggressively the issues. We watch the corrective action process, we watch that things are getting fixed.

So our involvement is not so much, you know, going and looking at their financial books and making sure, but we watch performance in the plant. And you can see performance. It's very telling in a lot of those areas. Engineering applications, you know, are they going to do a deep root cause assessment of an issue or are they just -- those are all little indicators. And so one of our jobs routinely is to watch all those little things, and that's what we're mindful of.

MR. HUFTY: But you would, as far as given the scope of you what do, it would be all right with you if they lost money running the plant?

MR. NICHOLSON: We're not involved in any way in their financial success or failure at making money.

MR. ZWOLINSKI: I would argue if we felt that there were safety concerns emanating from plant equipment that was not being maintained adequately, if we felt that the root cause was economic pressure, in other words, the company didn't provide money to replace obsolete equipment, didn't provide money to do the correct maintenance, that root cause would certainly surface, and we would be asking the utility to explain why they should continue operating. If that helps you in the context of where economics may play a factor.

MR. NICHOLSON: We have really time for one more question. There's a lady here that's been raising her hand.

MS. ERNEST: My name is Cheryl Ernest. I'm a former PSE&G employee. I no longer work for them anymore. I just want to say this gentleman had addressed do you listen to people's concerns at the plant. You might, but upper management does not, and I just wanted to add that little comment. Thank you.

MR. NICHOLSON: Again, if you've got specific examples, we'd be --

MS. ERNEST: I do, but I really don't

want to get into it here. But yes, I do have a lot of concerns. You might as well say I got fired or terminated last October. I've been down there for 15 years. I was harassed for a year from upper management.

MR. ERNEST: From a supervisor and a manager from PSE&G with new management that came in.

MR. NICHOLSON: Stop right there. We need to go to a different forum.

MS. ERNEST: I can talk to you another time.

MR. NICHOLSON: I can give you my card. The best way is to contact the Resident Office.

MS. ERNEST: What's your number?

MR. MARSCHALL: 609-935-3850 or 935-5151.

MR. NICHOLSON: We really have to get out of here by 6:00 or we're going to be in --

MS. ERNEST: Thank you.

MR. McLAUGHLIN: Can I make a quick comment? Can you maybe make allowance for maybe two more questions? I know there's a lot of information here being disseminated. We appreciate your being here.

MR. NICHOLSON: Your name, please.

MR. McLAUGHLIN: My name is Frank McLaughlin. I live in Avalon, New Jersey. And I looked around the faces in this room, I really see fear, I mean literal fear in many people's faces. The poor lady here, the gentleman who couldn't even give us his name. And looking at you gentlemen up here, once again I reiterate Ms. Fisher's thanks for having us here.

And I look at your faces and I don't envy you. You look very fearful to me. You're very intelligent gentlemen, and I appreciate your manner. But I think there's a very, very big picture here. The more I look into it, the scarier it gets. Fire penetration seals, it just goes on and on.

At first when many people voiced concerns about this plant, the people who are proponents of the plant, they stood there laughing. No one is here laughing anymore. It's a very serious matter here. I would hope that this plant would be shut down, never restarted, both of these two Salem plants, 1 and 2.

As you know, they've been rated by independent agencies, citizens watch groups and what

not as Salem 1 is the worst nuclear plant in the whole United States of America and Salem 2 as the eighth worst nuclear plant in the whole United States of America.

And, you know, I had heard earlier that you had an expert and you were very proud that you had an expert come in, when we were in the other little, tiny, sardine packed room, to come in and look at a particular amount of systems. But man, I would sure hope to God that on nuclear power everybody who does anything with nuclear power is an expert, let alone that you were proud of an expert.

And I've heard the word critical come up so many times, it's going to be critical when we're operating the plant. When you're talking about so many people's lives that are at stake with something like this -- and I have a chart and an outline that I'm going to hand each of you gentlemen -- but Salem is within 200 miles of one-fourth of the population -- I'm sorry, 250 miles of one-quarter of the population of the United States of America.

Now, if it's the worst nuclear plant, second worst nuclear plant, with all these things

I've been hearing here today, I'm no expert, but all these things and all these extremely intelligent people, yourselves included, have been relaying back and forth here and all the vibes going around this room, all these people can't be wrong.

I've got a list of a couple things I'd like to mention here very quickly, and I'll let the next person say something hopefully helpful as well.

These plants are now at the end of their design life. These plants have not worked well basically since the beginning. Ms. Berryhill had mentioned the amount of operating efficiencies and whatnot. They've always been substandard operating, substandard plants, they've always been in the media. We've been reading about it and worrying about it until the cows come home here in South Jersey.

How would we ever expect broken down, delapidated plants that are now white elephants that people are trying to put Band-Aids on them, how could those plants ever operate in a way that it would be safe for people to be close to those plants, let alone one-quarter of the United States population.

You know, the NRC has promised that our country's people will only be allowed to be having nuclear plants if the license is given as a privilege to operate. That it's on -- I mean the license is only given, it's a privilege to get a license, and that's if everything is perfect. As this gentleman said, hey, it's got to be a hundred percent.

When you get to human error, I mean I don't think anybody in this room is perfect. And the only person that's ever been perfect is the good Lord. Nobody in this room is perfect. When you talk about human error with a nuclear plant and when you talk about the privilege to operate a nuclear plant and you have to get a license to do that, with these plants, there will be many failures with security, we've heard about that already, management and safety standards, and that's the purpose of this meeting is the management, the safety of it, the management and the proper safety concerns of that.

I feel also there's a conflict between the NRC and PSE&G because one of their directors from PSE&G has now come over and worked with you gentlemen. I think that is wrong. I mean I feel

the fox is watching the henhouse.

The artificial islands that these plants are built on are not solid, and an earthquake could cause catastrophic problems.

Salem sucks in 3 billion gallons of water a day. When I gave a speech about the Salem plant once, I told them a million gallons a day. And this gentleman, Tony Tota here, came up to me afterwards. You know, you're way out of line here. I said is a million gallons, you know, high. And he said no, it's 3 billion gallons a day. And all the sealife in the Delaware Bay and the Delaware River combined goes in with that.

Salem 1's reactor system has failed to operate automatically, according to New Jersey PIRG and nonprofit groups that have researched this, it's failed to operate automatically 26 times from 1993 to 1995. And I'll repeat that for anybody that's not a fast writer. Salem 1's reactor safety system failed to operate automatically 26 times from 1993 to 1995.

You, the NRC, hit Salem with three of the biggest fines ever that were ever imposed, okay. And most of this was when it was within the design

life, you know, hey, it's going to last for 25 years, it will be mothballed and something bigger and better and everything else and it never happened.

Well, I can't imagine with my peanut brain here how something that didn't run right from the beginning, now that it's all broken down and everything, we're going to put enough Band-Aids and duct tape or whatever else we're going to put on it to make it run perfectly and safely near all this population.

These plants are constantly operated out of their design bases. They should never be allowed to restart. Radioactive waste has always been a problem, especially with these plants and the less than stellar safety and security leaves these plants more exposed than normal to terrorist activities. And gentlemen, if every one of the seven of you, if you make a decision on this, if you do err, please err on the side of caution. Thank you.

MR. ZWOLINSKI: There was one portion of your remarks which I feel that I would be held to at least make a statement. And that's along the

lines of the integrity of the folks at this table. I would argue very strongly that these folks are trying their level best to perform a function which they've been trained, highly skilled. They're on the job more than 40 hours a week as Federal civil servants. There's a great number of expectations placed on us to be as diligent as possible in fulfilling the mandate of the Nuclear Regulatory Commission.

You're certainly willing to and can have whatever observations or beliefs about people in the agency, but don't impugn our integrity based on perception or lack of evidence. And I would ask to be measured on my activity and my results and my work.

MR. McLAUGHLIN: Absolutely. I have no problem with the credibility of you gentlemen here. Once again, I appreciate you having this meeting here. Having heard, you know, I couldn't believe it when I had heard someone from PSE&G now was with the NRC. PSE&G has these two plants and some other nuclear interests that they have problems with.

MR. ZWOLINSKI: And I think I stated to one of the ladies, as I stated earlier, that we'll

assure you that the issue is made known.

I will say that each person is certainly allowed to have, in this country, to have their own views and opinions, what have you. I want to come to the defense of my chairman. I think she is trying her level best to take an agency that has been identified to have some ills -- if you look back to the Time Magazine article of approximately a year ago, our performance was less than stellar at the Millstone site -- she's trying to lead us forward with a great number of lessons learned.

Much of the staff at this table are attempting to perform at a higher level, meeting agency expectations, and much of that is coming from her and her diligence in forging a new path for the agency. With that --

MR. NICHOLSON: We really need to wrap up. Let me say that we've taken a lot of information in. This poor lady here needs a break. What we will do is we'll review the transcript. Any questions that we glean from that directly that we, you know, that we really need to address and answer we'll append that to the transcript when it goes into the public document room.

We've also got some specific addresses here. We can make sure that the transcript gets sent to these folks and anybody else that wants to give us their name and address or mailing address or somehow get that. Absent that, you can always contact us, the NRC, or the public document room, you know, we'll try our best to get a copy of that to all interested parties.

Again, thank you for the evening and good night.

(Proceedings closed.)

CERTIFICATION

I, Loretta B. Devery, do hereby certify that the testimony and proceedings in the foregoing matter, taken on March 4, 1997, are contained fully and accurately in the stenographic notes taken by me and that it is a true and correct transcript of the same.

LORETTA B. DEVERY, RPR

The foregoing certification of this transcript does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.

ENCLOSURE 2

NJPIRG
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New Jersey Public Interest Research Group (NJPIRG) Citizen Lobby Testimony to the Nuclear Regulatory Commission Concerning Unanalyzed Operation Condition, Operation Outside of Design Basis, and General Safety Concerns of the Salem Unit I and Unit II Nuclear Facilities

Gerald Flanagan
4. March, 1997

Good afternoon. My name is Gerald Flanagan of New Jersey Public Interest Research Group (NJPIRG) Citizen Lobby-- the state's leading non-partisan environmental, consumer, and good government watchdog organization, with over 20,000 active, dues-paying members. Let me start by thanking the Nuclear Regulatory Commission (NRC) for their role as organizer and participant in this safety meeting. Let me further commend the NRC's recent listing of the Salem reactors on the nationwide Watch List of troubled reactors-- an action that demonstrates the NRC's ongoing commitment to safe operation and monitoring of nuclear facilities.

The addition of Salem to this list was made necessary by the reactors history of gross mismanagement and violation of the NRC's safety standards. This same history, and the absence of any affirmative showing by PSE&G that Salem can operate within its design basis, leads us to believe that restarting either Salem 1 or Salem 2 is premature, and would pose an extreme risk to public health and safety. I have four points to make today:

1. Salem is not meeting its design basis;
2. Unless Salem meets its design basis, the NRC cannot ensure that it is operating safely;
3. Therefore Salem should remain closed until there is an affirmative showing that both reactors will operate within design basis. A vertical slice test at both units should be performed to determine the extent of any design shortfalls.

A. PSE&G has not demonstrated that Salem can meet its design basis.

In May, 1996 an NRC investigation was initiated to examine the fidelity between the Salem Unit II as-built plant configuration, design, and the current licensing basis in the Updated Final Safety Analyses Report (UFSAR). In addition, a limited Vertical Slice investigation was carried out. To date, no such investigations have been initiated at Salem Unit 1 to my knowledge.

The Special Team Inspection (STI) presented its findings in the Salem Licensing Team Inspection Report 96-80. The report cites many instances Salem Unit II was operating outside design basis prior to shut-down, where design and licensing bases were not well understood and connected, and where NRC safety regulations were violated. Among the reports findings were the following:

- The licensing and design bases of the systems reviewed by the team (fuel handling ventilation, emergency control air, and service water/ containment fan cooling) were not well understood nor were they accurately articulated in the UFSAR and CBD.

- With respect to the Fuel Handling Area Ventilation system, which ensures that radioactive material released from a fuel assembly is filtered before discharge to the atmosphere, "inspectors encountered difficulty in performing a comparison of the design and the licensing basis . . . due to the number and extent of existing and planned change notices to various documents."

- Testing appeared weak and ineffective in a number of instances, particularly for the compressed air system.

- In response to NRC concerns about the resolution of previously identified design deficiencies (DEF's) the UFSA project resulted in a detailed review of 500 deficiencies associated with design basis questions.

Further, the limited Vertical Slice Investigation at Salem Unit II led investigators to conclude:

"The inspectors encountered difficulty in performing a comparison of design and licensing basis described in the Technical Specifications, UFSAR, and CBD due to the number and extent of existing and planned change notices to various documents" (pg. 10, "Salem Licensing Team Inspection Report 96-60").

Despite these difficulties, the Special Team Inspection found discrepancies not identified as part of recent system readiness reviews, or other design activities prior to May 1996 in the nine separate systems. The inspector questioned whether an operability determination had been performed at all by facility representatives.

Simply, the report details numerous, repeated, failures of Salem Unit II to operate per design basis. Again, there is no comparable report for Salem Unit I because, to our knowledge, there has been no inspection of Salem Unit 1's adherence to its design basis.

B. When the reactor operates in unanalyzed condition, safety parameters and safe operating levels cannot be determined accurately.

In instances where reactors operate outside basis in an unanalyzed condition there is no basis on which to determine safety of operation. Based on the high level of uncertainty as to safe operation under these unanalyzed conditions, safe operation of Salem Unit II can be characterized as an unknown variable.

PSE&G has a history of repeated failure to meet safety standards at Salem, and failure to take action to correct identified safety concerns. Because PSE&G cannot be entrusted to maintain and operate Salem in a manner that ensures safety, the NRC's role as the watchdog of Salem is critical. However, NRC inspectors cannot ensure that safety parameters are being met unless the plant is being operated as it was designed to be operated.

C. Salem 1 and 2 must be demonstrated to be within their design bases before restart.

We cannot allow Salem 1 or Salem 2 to re-start without careful demonstration that the reactor will operate within design basis from the day it goes back on line and for an uninterrupted period thereafter.

Before anyone can fully appreciate the scope of these safety shortfalls of Salem Unit 2 we must first fully investigate the facility and the nature of each of the instances that the facility has operated outside design basis in the past. NJPIRG Citizen Lobby calls on the NRC to demand that PSE&G adopt practices that put Salem 1 and 2 within design basis in all instances before restart planning can begin.

Finally, NJPIRG Citizen Lobby calls on the NRC to conduct full top down Vertical Slice Inspections at both Unit I and Unit II to determine the extent of the design shortfalls. Specifically, NJPIRG Citizen Lobby requests the NRC conduct extensive inspection of steam generators and associated hardware and procedure.

Again, thank-you for the opportunity to present these concerns. We look forward to increased oversight of Salem by the NRC.

ERN

The Environmental Response Network

P.O. Box 105 • Ocean View, New Jersey 08230 • 609-463-1700

THE ENVIRONMENTAL RESPONSE NETWORK OF CAPE MAY COUNTY, NEW JERSEY, WOULD LIKE TO CALL UPON THE NUCLEAR REGULATORY COMMISSION TO SHUT DOWN THE SALEM GENERATING PLANT PERMANENTLY. THE SALEM PLANT HAS OPERATED APPROXIMATELY 55%OF THE TIME FOR THE LAST TWO DECADES DUE TO SAFETY VIOLATIONS, EQUIPMENT FAILURES AND MISMANAGEMENT.

THE SALEM PLANT IS A DANGER TO ALL OF US WHO LIVE IN SOUTH JERSEY. I SHUDDER TO THINK ABOUT AN ACCIDENT RESULTING IN EVACUATION, ESPECIALLY ON A SUMMER HOLIDAY WEEKEND.

THE E.R.N. WANTS TO SEE CHEAP, SAFE ALTERNATIVES TO NUCLEAR ENERGY. SOLAR POWER PLANTS AND WINDMILL FIELDS ARE THE WAY TO SAFE ENERGY. IN ADDITION, SOLAR ENERGY AND WIND POWER DO NOT HAVE INTAKE VALVES TO DESTROY WILDLIFE AND THERE IS NO RADIOACTIVE SPENT FUEL TO CREATE A DISPOSAL PROBLEM.

THE E.R.N. WOULD ALSO LIKE TO THANK RUTH FISHER OF CAPE MAY COUNTY FOR BEING INSTRUMENTAL IN BRINGING THIS MEETING INTO BEING.

Barbara L. Frankheiser
Secretary, E.R.N.
March 4, 1997

Salem Nuclear Generating Station Meeting
March 4, 1997

Introduction

My name is Anthony A. Totah Jr. I am presenting more written comments on behalf of Clean Ocean Action concerning Public Service Electric & Gas Company's ("PSE&G") Salem Nuclear Generating Station ("SNGS").

I am a marine biologist and environmental educator with over thirteen years experience in research and education. I graduated from the University of Texas at Austin with a bachelor of Science degree in Biology, with emphasis in Marine Science. Graduate Studies at University of West Indies' Discovery Bay Marine Lab, Jamaica; Bermuda Biological Station; and Smithsonian Institute's coral reef laboratory in Belize included: coral reef ecology and competition and diversity of tropical marine invertebrates. I have spent the last eleven years during research and educational programs in South Jersey. This experience includes research of coastal ecosystems, focusing on population dynamics of different marine invertebrates, non-point source pollution, and littoral processes. Five years of this research was with Lehigh University's Stone Harbor Marine Laboratory, were I served as lab manager for a year. I'm currently employed by Clean Ocean Action ("COA") as head of their South Jersey Office and have held this position since 1993. I have been an active volunteer for the Marine Mammal Stranding Center's stranding network for the last six years and have volunteered at the New Jersey State Aquarium at Camden in the education department.

Clean Ocean Action opposes the restart of the Public Service Electric & Gas Company's Salem Nuclear Generating Station 1 & 2 on the basis that it does not comply with section 316(b) of the Clean Water Act. Below is a list of reasons for these recommendations.

Section 316(b) of the 1972 Clean Water Act provides the mechanism for a regulatory agency determination as to whether the location, design, construction and capacity of the cooling water intake structure reflects

the best technology available for minimizing adverse environmental impact. The PSE&G's new oppereting permit granted by New Jersey Department of Environmental Protection (NJDEP) does not support "Best Technology Available" for minimizing adverse environmental impact.

The best way to minimize any negative environmental impact of cooling a power plant is to minimize the the amount and rate of water that flows through the cooling system. To date, the best technology that has been developed is the closed-cycle system with cooling towers. A closed-cycle system with cooling towers would greatly reduce the adverse impact on the environment. By reducing the flow rate and volume needed to cool the power station by 95%, the close-cycle system would proportionally reduce the adverse impact on fish and all other marine life by 95%. Closed-cycle systems with cooling towers and their positive benefits to the environment are proven and well documented. Nothing in PSE&G's Permit granted by NJDEP comes near to the adverse impact on the environment by 95%, especially in regards to entrainment. If fact, the design changes and wetlands mitigation to the power plant will have no effect on entrainment.

Biological Compensation

PSE&G believes that it is actually beneficial for the environment to destroy a large number for fish and other marine organisms. They use the concept of biological compensation to justify the killing of marine animals through entrainment. PSE&G senior scientist, Garald J. Lauer states:

> "The populations of the smaller organisms are able to withstand loss as a result of their high abundance, high reproductive capacity and short generation times. These populations, as well as those of the longer-lived, recreationally and commercially important Target Species have the ability to compensate biologically for losses of smaller, early life stages of the organisms by increased rate of population survival, growth and reproduction. Compensation occurs as a result of a number of factors underlying decrease competition for food, decrease competition for living space,

decreased incidence of disease, and decrease cannibalism."

At a Vineland presentation (9/9/93), PSE&G used the example of "clear cutting" in a densely grown forest to demonstrate biological compensation. This process thins of the tree population of the forest. They said that younger trees grow faster, are much healthier and there is an increase in diversity.

Biological compensation works in forest with regards to "clear cutting" for several reasons. First, there is a limiting factor: space to obtain sunlight for growth and food production. Second, "clear cutting" directly addresses the limiting factor to reduce its limiting ability. Third, "clear cutting" is a "controlled" thinning of the population. Fourth, the trees that are removed from the environment by "clear cutting" are adults and have had a chance to pay their "genetic obligations" to the species. Fifth, the effects of biological compensation can easily be measured by photography over time and growth rings in trees.

Biological compensation does not work in the Delaware Bay with regards to the cooling intake system of the SNGS for several reasons. First, their must be a limiting factor and the effects of population thinning must address that limiting factor to reduce its limiting ability. Second, the thinning/killing of the marine population; fishes, invertebrates, and plankton, is indiscriminate and effects all trophic levels of the food chain. Third, most of the marine animals killed by the cooling system are juveniles and have not had a chance to paid their "genetic obligations" to the species. Fourth for biological compensation to occur, its effects must be measurable.

Biological compensation has been demonstrated in controlled or artificial environments and natural habitats where there are limiting factors (e.g. food supply, living space, and nutrient requirements) that affect the growth rate, reproductivity, survival of a species. Biological compensation occurs when a controlled processes of population thinning directly addresses a limiting factor to reduce it's limiting ability on the environment and a positive effect can be directly measured.

How would a forest look if the same area was indiscriminately

"clear cut" for 16 years straight? The SNGS has been killing marine animals indiscriminately in the same area for 16 years. If biological compensation has been occurring, where are the fish?

No measurable evidence of biological compensation has been presented with regard to the cooling water intake system of the SNGS. In fact the opposite may be occurring in the Delaware Estuary. Not only does the intake kill small fish but it kills the food source for these fish. Each day countless billions of microscopic plants and animals are drawn through the cooling system and killed. These plants and animals are an important base of the food chain. Instead of addressing an limiting factor needed for biological compensation, SNGS may be creating a limiting factor by disrupting the base of the food chain in the Delaware Bay. This destruction of the juvenile fishes food source will cost the fish of the estuary more energy in searching for food, make it more vulnerable to predation due to increased food searching time, and increase the incidence of disease due to insufficient food intake and increased energy expenditures.

The loss of large numbers of small and early life stages of fish species also undermines conservation and regulatory fishing measures on number, size and time frame in which fish can be caught and kept by fishermen. NJDEPE regulations on size limits allows the fish to pay it's genetic obligation to the species. Juvenile fish killed by the SNGS cooling water intake have not had a chance to fulfill this obligation. Removal of a large number of juvenile fish in an area can threaten fish stocks of that area and diminish the genetic pool of the species effected. A diminished genetic pool decreases the ability for a species to recover from biological pressures such as infectious epidemics.

Survivalship of Entrainment

Fish and other marine organisms are subjected to both impingement on and entrainment through the intake system of the power plant. Impingement accounts for only a small portion of fish kills. On the other hand, entrainment has a greater adverse effect on the environment. The majority of fish and other marine life are killed by being sucked through the cooling system a baked alive. William G. Gordon states,

"Of the organisms entrained or impinged, some survive. Those that do survive continue their role in the Bay ecosystem...."

PSE&G and NJDEPE, at the roundtable in Trenton, both stated that there is survivalship of entrainment through the cooling system of the SNGS, but provide no statistical data. Is this based on theory or is their a scientific bases to this belief? If so, then what is the percentage of survivalship of entrainment, what is the condition of the animal surviving entrainment, what is the percentage of survivalship after entrainment, and what animals survive to best verses animals that have little survivalship? These are important questions that need to be answered to access the impact of the cooling system on the environment. If PSE&G and NJDEPE believe there is survivalship then they should also have some type of answers for these questions, whether it is based on fact or theory.

Survivalship of entrainment is an important fact in determining the future of SNGS. If survivalship of fishes and other marine animals is low, it would be more beneficial to the environment to reduce flow rate through the cooling system and have no survival of entrainment. The reduce flow rate would save the lives of marine organisms proportionally to reduction of the flow rate by preventing entrainment.

To our knowledge there is no direct way to ascertain survivalship of entrainment. The only way to accurately measure the effects of entrainment is to directly sample the cooling water before it enters the Delaware Bay. Any permit issued should have the provision for the instillation of a method to directly study the effects of entrainment. This can be easily accomplished by installing a continuous flow loop from the cooling outfall pipe at a point along the pipe before it enters the Delaware Bay. This loop would allow direct access to the cooling waters before it enters the bay and would provide valuable information on survivalship, species effected, and numbers killed by the cooling system of the power plant.

PSE&G's proposal does little to minimize the effect of entrainment. Modified fish buckets and intake screens will have little or no effect on reducing entrainment, sound deterrent "study" will have no effect on

reducing entrainment, and the so-called intake limitation (actuality standard operation level of 3.024 billion gallons a day) will have no effect on reducing entrainment.

On the other hand, a closed-cycle system with cooling towers would reduce the flow rate and volume needed to cool the power plant by 95%. This would proportionally reduce entrainment by 95%, saving the lives of millions of fishes a year and billions of invertebrates a day.

If PSE&G's proposal reflects the best technology available for minimizing (not compensating for) adverse environmental impact, what are they doing to prevent entrainment and how does that compare to the 95% reduction of entrainment that a closed-cycle system would have?

Limiting Factors

At the roundtable meeting in Trenton, officials from NJDEPE stated that the limiting factor for fish in the Delaware estuary was saltwater wetlands. If saltwater wetlands are such a limiting factor, why is so little amount of wetlands needed to offset the vast number of fish that are being killed by the cooling system of the power plant, especially when these wetlands do not directly support the target species of fish (e.g. weakfish, spot, bay anchovy and white perch)? NJDEPE officials stated that 7,400 acres was needed to offset the killing and that this acre value was between the PSE&G's number of 2,425 and Richard Delgado values of 25,000. The 7,400 acres that NJDEPE said is need is about 1% of the total amount of wetlands in the Delaware estuary. It is interesting because, the same percentage of tidal flow (1%) is being used to cool the power plant. An increase of 1% of wetlands can not offset the destruction that is caused by the cooling system which utilizing 1% of the tidal flow. The cooling water system of the SNGS is much more efficient in destroying life than that of the mitigation of wetlands in its ability to create life.

During the roundtable, I ask how long would it take the mitigation process to produce the number of target species fish equal to the number being killed by the cooling system of the power plant. NJDEPE stated it did not

know how long it would take because there were many variables to consider, and that total equality is not necessary. How was NJDEPE able to access the number of acres needed to compensate for the adverse impact that the power plant was having on the environment without knowing how long it would take? How can NJDEPE get 7,400 acres without a time frame? One number is needed to obtain the other. Also, has NJDEPE consider the lag-time in its calculation? The SNGS is killing fish and other marine animals at a steady rate, the mitigation process does not happen instantly.

The wetland mitigation proposal does not create any new marshlands, it just changes the marsh from freshwater wetland to a saltwater wetland. In this process the net gain of wetlands is zero! The salt-hay farms that are to be converted in this mitigation process do provide nutrients and vegetative material to the Delaware estuary during peek flood tides throughout the year. The overall productivity yield in this mitigation process is minimal. NJDEPE has not taken into consideration the productivity of the freshwater wetlands. Freshwater wetlands are almost as productive as is saltwater counter parts. The change in productivity in this mitigation process is not large enough to compensate for the adverse impact that the cooling system of the SNGS is having on the environment.

The wetlands mitigation will most likely benefit the species that are closely associated with a saltmarsh community; killifish, mummichogs, sheepshead minnows, grass shrimp and blue crabs. But the potential benefits to target species like stripe sea bass, weakfish, white perch, spot and bay anchovy is questionable. NJDEPE stated that the mitigation of the wetlands would provide vegetative material to the estuary and that the breakdown of this material would produce more organisms in which the fish intern would feed on. So, the marsh mitigation is a step wise process, which indirectly creates more food for the target species of fish.

The limiting factor for target fish in the Delaware estuary is not saltwater wetlands but food source for the fish. This food source is the same that is being destroyed by entrainment through the cooling system of the SNGS. Each gallon of water from the Delaware Bay contains hundreds of microscopic organisms which are an important base to the food chain of the estuary. If you multiply this by the 3.024 billion gallons of water that

flow throw the cooling system a day, countless billion marine organisms are being entrained each day. The majority of these don't survive the entrainment process. PSE&G officials stated,

> ...Even the ones that don't survive are returned to the ecosystem and remain in the food web of the Estuary. Many of these are consumed by predators which would have been their fate even if they had not gone through the power plant."

This statement has several flaws. First, studies have shown that in larval fish, the motion of food particles/prey play an important roll in food selection. Eyes in larval fishes are highly develop and are used will determine whether the fish will strike at and eat a particular food source. Larval fish are attracted to food sources that are moving in a variety of different ways, whether it be a swimming motion, the pulsation of internal organs or a motion that sets an animal apart from a small piece of detritus. Secondly, fish and other marine organisms that die naturally provide a biological benefit to the environment and the rate of death is equivalent to the natural pressures placed on the species. Death from entrainment is not equivalent to the natural pressures of the environment and many that die are not utilized by consumption but by microbial breakdown

Sea Turtles, Shortnose Sturgeon, & Diamondback Terrapins

During the NJDEP roundtable meeting, PSE&G was claiming how much it was concerned about the environment when it planed it's proposal and how going to outside sources for energy replacement would be more detrimental because fossil fuels would be used for this energy. PSE&G's concerns for the environment stops when it comes to endangered species. Instead of trying to improve and protect endangered species, PSE&G brushes the issue off by saying they are within federal limits. The current operating procedures of the SNGS does little to reduction of adverse impact to endangered and threatened species.

SNGS has had an adverse impact on endangered species like sea turtles and the shortnose sturgeons. From 1977 to 1993, 36% of endangered sea turtles that have been trapped against the trash racks by the powerful

current have died. Of the 86 sea turtles trapped, the 31 that died include: 19 loggerheads, 11 Kemp's Ridleys and one Atlantic green turtle. Endangered shortnose sturgeons also get trapped and killed by the intake of the power plant. In 1992 the plant killed 2 sturgeon. None of PSE&G's improvements address the issues of endangered species and how to minimize the impact on them. No information is available on the number of diamondback terrapins trapped or killed at the SNGS. Since the population of diamondback terrapins is much greater than the population of sea turtles, the frequency of entrapment should proportionally higher.

A cooling tower system would virtually eliminate entrapment and death of endangered sea turtles, shortnose sturgeons and the protected diamondback terrapin. If a cooling tower system is not used at the SNGS, the entrapment and death of endangered species should be considered "harassment" as specified by the Endangered Species Act, because the "Best Technology Available" is not being utilized.

Disproportionate Costs vs. Environmental Benefits

PSE&G's has two objections to using the closed-cycle system with cooling towers. First, PSE&G's objection to the use of a closed-cycled system with cooling towers because the system is not cost-effective for the environmental gain. This not a valid reason why it should not construct the cooling tower system. Section 316b of the Clean Water Act does not use the "cost" of the technology as a determining value of "Best Technology Available".

Since 1977, PSE&G has known that when their discharge permit renewal came due, the SNGS would have to comply with the Clean Water Act and that the "Best Technology Available". PSE&G has had over 16 years to save and invest for the expenditures associated with demolition, construction and refit of the SNGS. On the other hand, did PSE&G officials feel that they would never have to comply with section 316b of Clean Water Act, so there was no need to set funds aside for this purpose?

PSE&G's first estimate of demolition, construction and refit of the SNGS with the cooling tower system had a price tag of $2 billion. Debate revolves around PSE&G's $2 billion price tag for this system. There are

some who suggest this figure is inflated by more than $1.3 billion. Recently, PSE&G did revised this figure using two scenarios.

In determining whether the cost of installing a closed-cycled system with cooling towers is "wholly disproportionate" to the ecological benefits, NJDEPE did not access who will be paying for the changes to the cooling system in the long run. PSE&G intends to pass the cost of any changes at SNGS to its customers as "operation expenses". So, NJDEPE did not determine whether the cost to the rate user is wholly disproportionate to the environmental benefits to be gained.

It has been estimated that even a total cost of $2 billion (PSE&G's estimate of cost) to construct the close-cycle system would increase the rate user utility bill by only 1%. An increase of 1% in consumers utility bill is well worth the environmental benefits and is not wholly disproportionate. PSE&G try to brush this fact off by saying "Diluting the cost by enough people you can get any price down to a reasonable amount." In the long run, it will be the costumers of PSE&G will pay for any changes to the cooling system.

NJDEPE did not also access the economical benefits to the area that the construction of a close-cycle system would provide. The current mitigation plan only benefits a few land owners and would not provide many jobs to the area. On the other hand the construction of a closed-cycle system would have provided hundreds jobs to an economically depressed area. These jobs would in turn support other businesses and improve the local economy.

The instillation of closed-cycle cooling system would also benefit the commercial and sport fishing industry as well as the tourist industry of South Jersey by directly protecting a vital resource in the Delaware estuary, the fishes and marine organisms.

If PSE&G officials thought a closed-cycled system with cooling towers was not cost-effective for the environmental gain, it had over 16 years to research and investigate new alternatives to improve on the technology that directly corresponds with location, design, construction and capacity of the cooling water intake structure to minimize adverse environmental

impact.

Instead PSE&G developed a proposal based primarily on theory and secondarily on methodology that has no scientific correlation with the cooling intake structure of the power station. PSE&G proposal substitutes an experimental hypothesis, "an educated guess", for a proven technology. A theory experiment can not replace a proven technology when the law states "Best Technology Available". SNGS is not the place for an experiment with the environment! NJDEP granted permit to operate based on these experimental proposal and disregarded section 316(b) of the 1972 Clean Water Act.

Adverse Environmental Impact

PSE&G's second objections to using the closed-cycle system with cooling towers is that they believe that the current intake system does not have an adverse impact on the environment. So, there is no need for closed-cycle system with cooling towers.

In PSE&G's senior scientist stated that SNGS was not having an adverse environmental impact on the community of fish, shellfish and other aquatic life in the Delaware Estuary. They attempt to dilute the impact by relating it to the total population of the east coast of the United States. In William G. Gordon's testimony, he states:

> "The numbers lost to impingement and entrainment may seem large to some of you but in terms of the total population, they represent a very small fraction of those life stages of the species susceptible to the plant operation."

Lost large numbers organisms due to impingement and entrainment will greatly effect the local population thus having an adverse impact on the local environment. An adverse environmental impact can occur on a local scale especially in a simi-enclosed water basin like the Delaware Bay. The Clean Water Act does not specify a comparison of environmental impact on a "Global Scale", but specifies "for minimizing adverse environmental impact", which can be on a local scale.

PSE&G's senior scientist, Gerald J. Lauer's testimony on the effect of the

once-through cooling system on the environment only reflects studies preformed by PSE&G and provides incomplete information to the public. In his testimony Lauer states:

> "While recognizing that losses of small aquatic organisms occur as a result of the operation of Salem's cooling water intake system, my colleagues and I conclude, based on the best information available, that these losses are not causing and will not cause an adverse impact on the community of fish, shellfish and other aquatic life in the Delaware Estuary."

In this statement, the phrase "based on the best information available" means based on the PSE&G research, and it excludes research such as the Versar report. PSE&G has not allowed scientific review of it's own findings.

Conclusion

PSE&G's public relations can be addressed as "Doggie Bone Diplomacy". Like a burglar that tosses a dog a bone to keep it quiet while the burglar steals, PSE&G attempts to pacify the public with operational procedures that don't directly address section 316b of the Clean Water Act. If the dog doesn't go for the first bone, the burglar tosses a larger and meatier bone. The bones that PSE&G has tossed to the public and NJDEP are: a sound deterrent study, modified fish buckets and intake screens, fish population monitoring program, and the biggest and juiciest bone - 10,000 acres of mitigated marshlands. What is being stolen are the lives of billions of invertebrates and millions of fish, and PSE&G hopes to get away with not complying with the Clean Water Act's "Best Technology Available" section.

Finally, laws are written to stop an injustice and maintain a civilized society. Whether the law is for human interaction with other humans or with the environment, laws were written to be upheld, not bypassed! More and more, environmental laws seem to be susceptible to negotiation. It is time to stop negotiating environmental laws and begin enforcing them. To this date the Clean Water Act has not been enforced. If the Clean Water Act in not enforced at Salem, when and where will it be enforced? It's

time to enforce so others will take notice.

Section 316b of the Clean Water Act specifies that best technology available must be used to minimizing adverse environmental impact with regard to the location, design, construction and capacity of the cooling water intake structure. The purpose of this law is "prevent" an adverse impact. The law was not written so a company could "compensate" for an adverse environmental impact on the environment.

In conclusion, it is our professional judgment that PSE&G's Salem Nuclear Generation Station cooling water intake system causes an adverse impact on the local environment of the Delaware Estuary and if alowed to restart operations again, the generation station will not be incompliance with section 316(b) of the Clean Water Act of 1972. We urges you to withhold operation of Salem 1 & 2 until SNGS fulfills the "best technology available" with regards location, design, construction and capacity of the cooling water intake structure for minimizing adverse environmental impact. We urge you to consider the environmental and economical benefits that a close-cycle cooling system with cooling tower would have. If SNGS reactors 1 & 2 cannot meet the requirements of section 316(b) them they should permanently be closed and dismantled.

Thank You,

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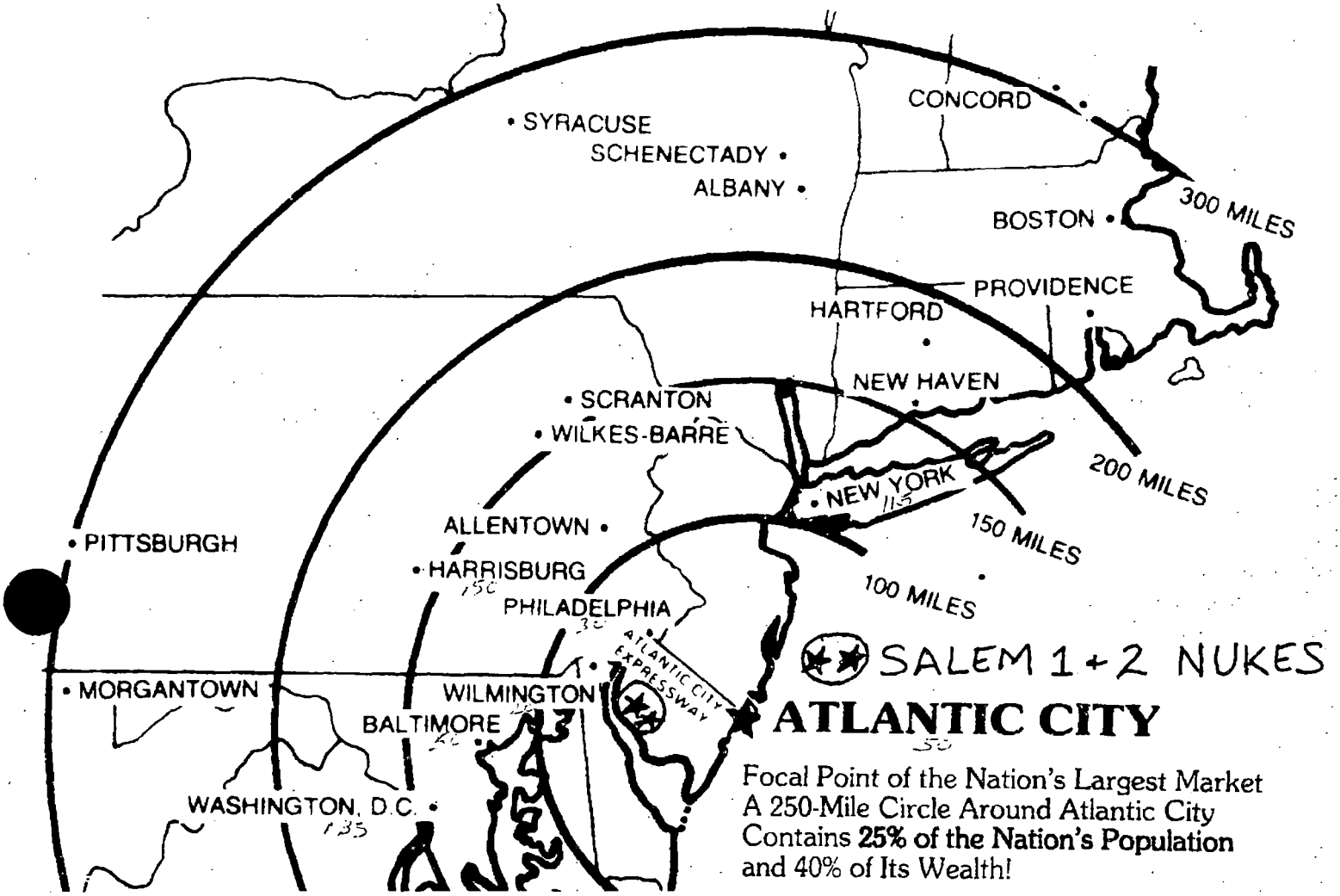
SALEM NUCLEAR PLANTS-NRC HEARINGS

To: Nuclear Regulatory Commission

From: Frank McLaughlin
POST OFFICE BOX 31
Stone Harbor NJ 08247

**********WHENEVER SAFETY IS A QUESTION, RESTART SHOULD NOT OCCUR!!



Salem 1 and Salem 2 should not be restarted because these two old, outdated plants have been plagued with poor records for safety, security and performance since at least 1980. Your organization is responsible for the safe operation of nuclear plants in this country. You, the employees of the NRC, are employees of the citizens of The United States of America,&would not be upholding your fiduciary responsibility to the people of New Jersey, the people of the East Coast, and the people of the U.S.A., if you allowed either Salem nuclear reactor to restart.

The Salem 1 and Salem 2 nuclear plants should be closed because:

1. The plants are now at the end of their design lives.

2. When the plants were not old , as they are now, many safety violations occured. The owners of these plants should not be allowed to put PEOPLE AT RISK because of profits. Now the plants are crumbling and restart would be foolish.

3. $\frac{1}{4}$ of the U.S. population is only 200 miles from Salem! See diagram.

4. A thin slice across the board complete inspection of these plants will show they are not safe. I demand this inspection.

5. The NRC has promised our country's people to only allow any nuclear plant a license to operate if it is totally up to standards. A license is a priviledge to operate. Salem 1 & 2 have often FAILED security, management, and safety standards. Once again, these problems occured when the equipment was operating within it's design life. How much worse would failures be with bandaids on old equipment?

6. There is a conflict of interest between the NRC and PSE&G, an owner of the plant. PSE&G director Jackson now works for the NRC.

7. The artificial islands the plants are built on are not solid, and an earthquake could cause a catastrophic nightmare.

8. Salem sucks in 3 BILLION GALLONS OF WATER A DAY and much of the Delaware Bay estuary's sealife as well. This sealife gets killed. A major radioactive leak could contaminate this entire estuary.

9. Salem 1's reactor safety system failed to operate automatically 26 times from 1993-1995.

10. You, the NRC, have hit Salem with 3 of the biggest 7 fines ever imposed.

11. These plants are constantly operated outside of their design bases. Therefore they should never be allowed to restart.

12. Radioactive waste is always a problem with nuclear energy.

13. Less than stellar safety and security leaves these plants more exposed than normal to terrorist activity.

14. If you err, do it on the side of caution.