TERA

NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

COMMONWEALTH EDISON COMPANY

(Zion Station, Units 1 and 2)

Docket Nos. 50-295
50-304

Place - Zion, Illinois

Date - 11 June 1979

Pages 288 - 481

2271 126

Telephone:
(202) 347-3700

ACE - FEDERAL REPORTERS, INC.

Official Reporters

444 North Capitol Street
Washington, D.C. 20001

NATIONWIDE COVERAGE - DAILY

wb

On behalf of Intervenor Attorney General, State of Illinois:

JAN N. SHULER, Esq.,
JANE K. MARKEY, Esq.,
Assistant Attorneys General,
Environmental Control Division,
188 West Randolph Street,
Chicago, Illinois 60601

On behalf of the Regulatory Staff:

RICHARD J. GODDARD, Esq.,
STEVEN C. GOLDBERG, Esq.,
Office of Executive Legal Director,
United States Nuclear Regulatory Commission,
Washington, D.C. 20555

wb

C O N T E N T S

Opening Statements:	Page
On behalf of the Licensee,	
by Michael I. Miller, Esq.	293
On behalf of the NRC Regulatory Staff,	
by Richard J. Goddard, Esq.	297
On behalf of the State of Illinois,	
by William J. Scott	302
Limited Appearance Statements	
Mitchell Hirsch	309
Lawrence Johnson	313
Roger Harrison	316
Thomas Peyton	320
Marilyn Shineflug	326
Dr. Axelmayer	331
Mr. Reukberg	335
Richard Kilbourne	339
Andrew Thayer	341
Bernice Russell	346
Peter Tarpey	350
Scott Klapman	352
Lawrence J. Blacik	354
Lisa DiCaprio	358
Jacqueline Tillett	360
Julian Horowitz	362

wb

CONTENTS (Continued)

Limited Appearance Statements	Page
Evelyn P. Tyler	367
The Rev. Bill Hogan	372
Alice Walton	375
Barbara Parson	377
Jean Fritschman	379
Bryan W. Simon	380
David A. Hilding	382
Joseph Gilby, Jr.	388
Rich Marrano	390
Flora Friedman	395
Marvin Baloussek	400
Joyce Kahn	404
Bob Filipowicz	406
Fay Witz	412
Lenore Hitchler	417
Leo Seran	422
Grace Fishman	425
Dorothea Ragland	426
Gary Reams	429
Frank Aguilar	430
Lawrence Knobel	432
Russell Bezotte	435
Edward Gogol	437

2271 129

wb

CONTENTS (Continued)

Limited Appearance Statements — Page

Dr. Vincent Kavaloski	445
Dr. John Wikse	451
Bobby Peterson	456
Themis Klotz	459
David Hill	467
Nancy Hill	468
John Volebrecht	469
James R. Rapier	470
Janet Means	472
G. P. Kollarson	473
Diana Tapia	478
Jennifer Hollingsworth	478
Robert Eckhouse	479

2271 130

P R O C E E D I N G S

CHAIRMAN WOLF: Come to order, please.

This hearing has been called in regard to Commonwealth Edison's application for an amendment to its facility operating contract, License for Zenith Stations 1 and 2 to obtain authorization to provide additional storage capacity in the common spent fuel pool for the Zion Units 1 and 2.

The proposed modification would increase the capacity of the spent fuel pool from the present design capacity of 868 fuel assemblies to a capacity of 2,112 fuel assemblies.

First I want to introduce the members of the Board. To my right is Dr. Forrest Remick of State College, Pennsylvania, a nuclear physicist. On my left is Dr. Linda W. Little. She's a technical member of the Atomic Safety and Licensing Board panel. She is an environmental consultant with research teaching and consulting experience in the areas of the impact of industrial waste on the environment, industrial waste water characterization and treatment and the development and application of ecological effects and health effects.

I'm John Wolf, a lawyer.

At this time, I would like to ask all counsel to state their appearance for the record, please.

agb2

MR. MILLER: Mr. Chairman, my name is Michael I. Miller with the firm Isham, Lincoln and Beale, 1 First National Plaza, Chicago, Illinois, appearing for the Licensee.

With me, Mr. Philip Steptoe and Mr. Alan Bielawski of our firm. Also seated at the counsel table, Mr. Cordell Reed, Assistant Vice President of Commonwealth Edison Company, Mr. Tom Tramm, who's the project engineer for the Zion Station.

CHAIRMAN WOLF: Thank you.

MR. GODDARD: Mr. Wolf, I'm Richard J. Goddard of the NRC Staff counsel. Also with me is Stephen C. Goldberg, Staff counsel.

CHAIRMAN WOLF: Thank you, Mr. Goddard.

MS. SEKULER: Mr. Wolf, my name is Susan Sekuler, I am counsel for the State of Illinois. With me is Anne K. Markey, also Assistant Attorney General for the State of Illinois.

CHAIRMAN WOLF: Thank you.

Are there any further counsel?

(No response.)

At this time, the Board will hear opening statements by the parties.

MR. MILLER: Thank you, Mr. Chairman.

OPENING STATEMENT ON BEHALF OF THE LICENSEE,

by Michael I. Miller.

MR. MILLER: The Licensee appears before you in this

agb3

proceeding, as you noted, seeking an amendment to its operating licenses for Zion Units 1 and 2. At issue --

VOICE FROM THE AUDIENCE: Use the microphone.

MR. MILLER: The microphone is not working

CHAIRMAN WOLF: We've called the sound man to come down and correct it. In the meantime, if you could, Mr. Miller, if you could speak louder, it would help.

MR. MILLER: I'd be glad to.

At issue is solely the question of whether the proposed modifications to the spent fuel pool at the Zion facility meets the criteria of the Atomic Energy Act and whether the modifications also pass muster under NEPA.

The applications for these amendments were filed in April, 1978 and have been the subject of an intense safety and environmental review by the Nuclear Regulatory Commission Staff.

This review has culminated in the issuance of two documents, a Safety Evaluation Report and an Environmental Impact Appraisal. In those documents, the NRC Staff addresses a broad spectrum of safety and environmental concerns and concludes that the modifications to the spent fuel pool and subsequent operation of the Zion facility as modified meet the criteria of the Atomic Energy Act and NEPA.

The modifications to the spent fuel pool involve nothing more than the installation of new high-density fuel

agb4

storage racks after removal of the existing racks. The installation of the new racks will increase the capacity of the spent fuel pool approximately 2.5 times.

This modification is due to the unavailability of either fuel reprocessing facilities or facilities for long-term storage of spent nuclear fuel at installations designed specifically for that purpose. The unavailability of these facilities was unforeseen when the Zion spent fuel pool was originally designed.

In any event, it is the Applicant's expectation that the expansion of the spent fuel pool and its use at Zion Station will be only an interim measure. The Federal Government is formulating plans for spent fuel repositories and it is expected that the next decade or so will see such plans brought to fruition.

The issues before this Board have been formulated originally by the contentions filed by the Intervenor, the Attorney General of the State of Illinois. This Board struck several of the contentions, allowed others as matters for litigation in the proceeding and requested all parties to address certain additional issues.

What is not before the Board is whether the operation of the Zion facility itself is in accordance with the Atomic Energy Act and NEPA. Those issues were litigated before another Licensing Board in 1973 in a hotly contested

agb5

proceeding which consumed some 37 hearing days.

Issues which are before this Board deal with such matters as the effects of the spent fuel pool modification on certain postulated accident analyses, whether the new racks will be corrosion-resistant so as to retain their structural integrity and perform their intended function over the life of the plant, the quality assurance procedures which cover the fabrication and installation of the new racks and the effect of the modification, if any, on the emergency plan and the industrial security plan for Zion station.

The Applicant, of course, will present evidence on each of these issues. For example, in connection with the issue of the effects of corrosion on the materials of which the new spent fuel racks are fabricated, the Applicant will present the testimony of Dr. Johnson and Dr. Dralev recognized experts in the field of metallurgy, corrosion.

In contrast, the Intervenor's witness on the subject, Mr. Miner is, by his own admission, not an expert of those disciplines. Indeed, his testimony is merely a rehash of documents published by others and does not constitute independent probitive expert evidence.

We believe that after having heard evidence on all the issues before the Board, you will conclude that the Licensee, Commonwealth Edison Company, has borne its burden of proof and that the requested license amendment should be

agb6

issued.

Thank you very much.

CHAIRMAN WOLF: THank you, Mr. Miller.

Mr. Goddard, do you wish to speak for the Staff?

MR. GODDARD: Yes, sir.

OPENING STATEMENT ON BEHALF OF THE REGULATORY STAFF

by Richard J. Goddard.

MR. GODDARD: The only thing that I would state is that, for the benefit of the members of the public who are here today --

VOICE FROM THE AUDIENCE: Louder.

MR. GODDARD: I would like it to be known that the Nuclear Regulatory Commission technical staff has the function of performing an independent evaluation of the Licensee's proposal to modify the spent fuel pool at Zion station. This analysis under both the Atomic Energy Act and under NEPA has occurred. It is the subject of the two documents referred to by Mr. Miller, the Safety Evaluation Report and the Environmental Impact Appraisal. The Staff will be presenting their own witnesses on that subject during the ensuing hearing.

Thank you.

CHAIRMAN WOLF: Thank you, Mr. Goddard.

Ms. Sekuler.

MS. SEKULER: Mr. Wolf, the Attorney General

agb7

for the State of Illinois, Mr. Scott, had hoped to be here at this time and to present the opening statement. I will be glad to make an opening statement at this time, if you prefer, but I would ask that when Mr. Scott does arrive he might be able to make a statement further.

CHAIRMAN WOLF: You may reserve until the Attorney General comes.

MS. SEKULER: Thank you.

CHAIRMAN WOLF: Are there any preliminary matters? We'll start again with you, Mr. Miller.

MR. MILLER: No, sir, I have none at this time.

CHAIRMAN WOLF: Mr. Goddard, do you have any?

MR. GODDARD: Nothing from the Staff, sir.

CHAIRMAN WOLF: Ms. Sekuler?

MS. SEKULER: I was asked on Friday over the phone during our conference call to provide a list of the --

VOICE FROM THE AUDIENCE: We can't hear.

MS. SEKULER: I was asked to provide a list of the proposed schedule that the State of Illinois had drawn up. I've amended it to accomodate the schedule as it was brought out over the telephone, and I would like to hand these out, if I may.

CHAIRMAN WOLF: Would you do that, please?

(Documents distributed.)

MR. MILLER: Mr. Chairman, it might be helpful

agb8

for members of the public if we were to identify which subject matters are covered by which contentions and on which days those subject matters are going to be addressed.

CHAIRMAN WOLF: Well we're going to do that before the session is over.

The Board regrets the lack of loudspeaker facilities but a sound man has been sent for and we hope that he arrives soon to cure whatever the defect in the system is.

MS. SEKULER: If there is no discussion of the proposed schedule at this time, the State of Illinois has prepared an Intervenor's motion for reconsideration of Contentions 2-B or 2-C or in the alternative an explanation of the ruling. This is in relation to the summary disposition of Contentions 2-B and 2-C.

CHAIRMAN WOLF: Thank you. The motion will be received.

If there are no further preliminary matters --

MR. GOLDBERG: Mr. Chairman, based on my understanding of the conference call that was held last week, any motions for reconsideration of this Board's ruling on the Staff summary disposition motion will be taken tomorrow?

CHAIRMAN WOLF: Any ruling? We have a motion now, and we're going to pass on it as quickly as we can because it's necessary in connection with the preparation of

agb9

evidence regarding this issue, so both for the State and for the Staff and the Applicant, so if we can pass on it this afternoon we hope to do it.

MR. GOLDBERG: Mr. Chairman, we have just seen this document. The Staff orally moves for reconsideration of this Board's ruling with respect to Contention 2-A, and we are prepared to argue that orally this afternoon or at the Board's pleasure.

CHAIRMAN WOLF: Very well. Thank you.

We'll get to this later in the day, Mr. Goldberg.

MR. GOLDBERG: Thank you.

CHAIRMAN WOLF: At this time, we're going to move now to limited appearances. We have a list of people who have submitted written requests for limited appearances and I have a total of 31 of those.

MR. GODDARD: I have an additional list here, Mr. Wolf.

CHAIRMAN WOLF: And in addition, there are others who have signed up today, and Mr. Goddard is now bringing me an additional list.

VOICE FROM THE AUDIENCE: Where are those lists for the people who were not apprised of this?

CHAIRMAN WOLF: Mr. Goddard, will you put out a pad so that anyone who wishes to sign up may do so?

MR. GODDARD: I will, sir.

agb10

CHAIRMAN WOLF: Let me say, in connection with the limited appearances, we're going to hear limited appearances all this afternoon and this evening, and then if need be we'll hear them on later evenings during the week. But we expect to go forward with the evidence as to the issues in the case beginning tomorrow.

MS. SEKULER: Mr. Chairman, our office has been requested to ask the Board if it might be possible to have some additional limited appearnaces in the morning hours tomorrow for those people who are unable to be here this evening.

CHAIRMAN WOLF: Well if there are such, and if you would get us a list, we will surely try to accomodate them. Yes.

MS. SEKULER: Okay, thank you very much.

CHAIRMAN WOLF: I don't know about tomorrow morning but we'll try one day this week for that.

end1A

2271 140

ebl
lb

We have something of a problem as to whom we should call first. I understand there are some people here this afternoon who cannot return at later hearings. And if there are such, I would like to know who they are, and the number, and we will try to accommodate them first.

(Discussion off the record.)

MS. SEKULER: Mr. Chairman, the Attorney General of the State of Illinois just came in. Before we have the limited appearances, may he make the opening statement for the State of Illinois?

CHAIRMAN WOLF: Yes, he may.

Mr. Attorney General, do you want to make a statement?

MR. SCOTT: Yes, I do.

OPENING STATEMENT ON BEHALF OF THE STATE OF ILLINOIS

by William J. Scott, Esq.

MR. SCOTT: First of all, I appreciate the fact that these hearings are being held --

CHAIRMAN WOLF: I think it would be helpful if you stood up. The people in the back of the room can hear better. But you also have to make sure that the Reporter hears it here.

MR. SCOTT: The decision that you are going to be making will not only affect the economic well-being of this community for generations to come, but it can very well affect

wo2

the health and perhaps the lives of the seven million people that depend on Lake Michigan for their recreation, for their water supply.

Realizing that Lake Michigan is one of the largest suppliers of fresh water in the world and that the Great Lakes have almost one-fifth of all the fresh water in the world in them, there couldn't be a worse place to store nuclear waste than here on the shores of this incredibly priceless heritage that we're holding in trust for future generations.

(Applause.)

The Zion Power Plant should never have been located on Lake Michigan, and no more nuclear power plants should ever be allowed to be located on this priceless resource. Now that it's here, it would be a tragedy to compound that mistake.

Perhaps one of the most significant comments that was made after the Three Mile Island accident at Harrisburg, Pennsylvania, was one made by the spokesman for Commonwealth Edison, Mr. Steven Goldman, who said that absolutely it could happen here at Zion, Illinois. That comment was made in response to a question by one of the environmental editors of one of our major Chicago newspapers.

While Mr. Goldman says we have emergency plans and safety systems, but no one can ever say never.

So we have to realize that there is the possibility of some type of human error, always the possibility of some

eb3

type of an accident.

Then consider the question as to why we should escalate the stakes if that should ever happen.

When the Zion Plant was originally put into operation, the program for dealing with the spent fuel rods called for about one-third of those rods to be stored into a pool of water for about six months and then to be shipped elsewhere. It also had the capacity for an additional full load from the reactor in case there was some need to unload that reactor.

In 1975, they came back in again and asked for permission to rerack and to increase the total number of assemblies that could be stored in that pool.

Now they're back once more asking that the total number of assemblies be brought to 2,112.

First of all, I think we have to deal with the term "spent fuel," because many of the people in our community and in our nation don't realize that we're talking about the deadliest contaminant known to mankind. The spent fuel rods are very radioactive. In fact, some of the rods are even more radioactive because the process creates some plutonium, one speck of which is said to be capable of giving you lung cancer.

And then we have to talk in terms of the incredible concentration of nuclear radioactive material in our state, which is not only one of the most populated states in the nation but one that centers inthe very heartland of our food

eb4

supply and of much of our water supply of this nation.

We're talking about a State with eight million people that depend on the water supply from Lake Michigan, twelve million people in our State of Illinois.

Why in the world one of the most populated States in the nation, one of the States that's the source of the food supply of much of the nation should be picked for these incredible concentrations of nuclear wastes is something that I just can't understand. We're talking about a pool now that already has two hundred tons of radioactive material in it. We're talking about a storage capacity that already has been allowed to be increased to four hundred tons, and now the consideration of increasing it to over a thousand tons, more than two million pounds of radioactive waste.

So the questions that you're going to be dealing with in the next few days are whether or not to allow this incredibly tremendous amount of nuclear waste to be put alongside of one of the most priceless assets that we have anywhere in the world.

At a time when we are dealing with the economy of our State, of our nation, I think it's appropriate to ask our question: How much do you think the oil barons would give to have Lake Michigan in the Arabian Peninsula?

When we're dealing with terms such as plutonium and uranium, I think again we have to think in terms of the

eb5

incredible potential for human suffering if some type of an accident did happen.

So that's why that statement from the Commonwealth Edison spokesman that says that a Three Mile Island accident could happen at Zion is the first and foremost to be considered because if that did happen and we were forced to evacuate the area it would include evacuation of the people that would be in charge of safeguarding equipment for the storage pool of the nuclear rods.

I was a little late in getting here today because I had the problem of coming up on an expressway that was under construction. If we have a quarter of an inch of rain in the Chicago area, we have a tough time getting back to our homes. And yet we are talking about allowing two million pounds of nuclear waste to be stored 12 miles away from Waukegan, one of our major communities in our State, and 40 miles away from Chicago.

We're talking about a concentration that not only would include the problems of a nuclear reactor but actually four times as much radioactivity stored alongside of it in a pool. Our State already has more nuclear material than any other State in the nation. In addition to the concentrations here at Zion we have thousands of tons already stored at Morris, Illinois, alongside the Illinois River, additional tons stored alongside the Mississippi River in Cordova, and plans

eb6

to store even more in Braidwood and in LaSalle County.

This heavy concentration just doesn't make any sense at all. Forty-nine percent of our energy is already supplied by nuclear power, and if we had some type of a human error factor and had to shut down our nuclear systems, we already have too heavy a concentration of nuclear energy.

So the questions that you're asking as to whether or not there are adequate plans in case there would be an accident if something would happen, for example, to one of the planes that was on its way into the Waukegan Airport, just as happened to the plane that was on its way to Meigs Field two days ago, the one that was on its way to O'Hare two weeks ago, what the effect would be if that unthinkable accident should happen, what the effect would be on not only the people in the Waukegan-Zion area but on the entire City of Chicago, and weigh that against the question of dollars, because that's what's involved here.

It's a question of whether or not this nuclear waste should be stored in one of the most populated State of the nation, alongside of a priceless asset like Lake Michigan, or whether the federal government should face up to its responsibility and locate the nuclear storage facilities in some barren, desolate part of our country under federal guard where it isn't near either our water supplies or food supplies or our most priceless asset, the people of our State.

eb7

So I urge you very strongly to consider all the facts involved, consider the possibilities and the precedents that will be set here, and to reject the application of Commonwealth Edison to increase the storage to more than two million pounds of nuclear waste.

nd WRB

Thank you.

ion fls

2271 147

CHAIRMAN WOLF: The applause doesn't show on the record, and I would ask you to refrain from it in the future.

We'll begin with the limited appearances, and in about an hour or so we'll call for additional names.

Mitchell Hirsch. Is Mr. Hirsch here?

MR. HIRSCH: Yes.

CHAIRMAN WOLF: Will you come up to this table here, this witness table?

LIMITED APPEARANCE STATEMENT OF MITCHELL HIRSCH, CHICAGO, ILLINOIS, ON BEHALF OF FUSION ENERGY FOUNDATION.

MR. HIRSCH: My name is Mitch Hirsch. I'm from Chicago, Illinois. I'm with the Fusion Energy Foundation.

I'd like to make just a very brief statement to the Board.

I just listened to Attorney General Scott campaigning, and I think that it is noteworthy that he seems to be deluding himself that there is an apparent mandate against nuclear power in this State. I think that is clearly not the case.

I listened to him speak in regard to preserving our heritage for future generations, and I would like to say from a strictly scientific standpoint there will be no future generations unless we continue with the orderly development of nuclear technology in this country.

(Boos and hisses from the audience.)

Of course, the anti-science crowd doesn't agree with that.

But let me address the issue at hand:

What is being presented to the public -- and I think it is crucial for the Board to allow this kind of discussion to occur -- is the public is being told that you have one of two choices, that there are two and only two choices involved in this affair. And there's an old Middle East proverb that states:

"Whenever you are presented with only two choices, be sure you choose the third."

The two choices that are being offered in this setup are:

One, shut down nuclear power. That would lead us into a new dark age.

The other choice which is being offered is just as ineffective in the long run, and that is to continue on the current course of generating electricity from our currently operating fission plants and simply storing the spend fuel rods in the manner that is being asked for.

I would, first of all, like to state that while this is a setup -- and I will explain that -- the Fusion Energy Foundation is speaking on behalf of the expansion of the storage facility as requested by Commonwealth Edison

Company, but the most important matter at hand is that there is a third option -- in fact, a variety of third options. And the very same people who are speaking on behalf of shutting down nuclear power are the very same people who have set up a situation where we cannot reprocess this spent fuel in the United States. They are the very same people who have made sure that under current conditions we cannot have a Clinch River Breeder Reactor in this country.

These are the very same people who have ensured, under the current set of circumstances that with current levels of funding we will never bring controlled thermonuclear fusion power on line for commercial electricity generation.

These are the same people who believe, deeply, in the philosophy of zero growth.

Secretary Schlessinger is one of these firm believers. I think it is time to burst the bubble that Secretary James Schlessinger is a supporter of nuclear power. That is bunk. It is James Schlessinger in particular who is sabotaging the continued development of nuclear technology in this country, and attempting to impose that on the rest of the world.

CHAIRMAN WOLF: You have one more minute.

MR. HIRSCH: Fortunately, the rest of the world seems to be smarter.

What do we propose? We propose that the expansion

of the spent fuel storage facility here at Zion be linked to a commitment on the part of the United States, the State of Illinois, the Federal Government as well, to enlist itself in a new Manhattan Project style program for nuclear expansion. We need to bring on line dozens of new nuclear power plants in this country in the next few years. We need to ensure that the process of technological progress is itself insured by implementing both the breeder program and a reprocessing facility which nations throughout the world are now moving ahead with much faster than we are.

We must enlist the resources and technological know-how of this country in an effort to bring controlled thermonuclear fusion on line before the end of this century, and we can do it. We must do it. There is no economic reason why we cannot do this.

The question of future generations is being decided now on the basis of the implementation of the most advanced technologies. The philosophy of no growth is the Malthusian philosophy against which this nation fought its founding revolution. And if we are to accept this philosophy, this nation does not deserve to survive.

Thank you.

CHAIRMAN WOLF: If you have more, you may extend your remarks by sending us a copy.

MR. HIRSCH: Thank you very much.

CHAIRMAN WOLF: The next person is Mr. Johnson. Would you state your full name, please?

LIMITED APPEARANCE STATEMENT OF LAWRENCE JOHNSON, MORTON GROVE, ILLINOIS.

MR. JOHNSON: My name is Lawrence Johnson. I'm a science. I live at Morton Grove, Illinois.

It is my position that the current practice of generating tons of super-toxic, virtually eternal atomic wastes which must never be allowed to mix into the environment, with no known safe method of disposal, is a fundamental contradiction of scientific methods.

The hazards of nuclear power plant operation and waste handling are definite possibilities, not virtually impossible as nuclear energy proponents have said in public for years.

VOICES FROM THE AUDIENCE: Louder.

MR. JOHNSON: Aren't I talking loud enough?

CHAIRMAN WOLF: No, not really.

Unfortunately, the microphones are not working. We're trying to get them fixed.

MR. JOHNSON: The fact that the microphones aren't working shows that you can't trust machinery too much.

(Applause.)

CHAIRMAN WOLF: Would it be better, Mr. Johnson, if you stood up? You might come around here.

MR. JOHNSON: Shall I begin again now?

CHAIRMAN WOLF: No, just begin where you left off.

MR. JOHNSON: It is my position that the generation of tons of super-toxic, virtually eternal atomic wastes which must never mix with the environment -- I think you'll hear me if you'll all be quiet -- is a fundamental contradiction of the scientific method.

The hazards of nuclear power plant operation and waste disposal and handling are definite possibilities, not virtually impossible, as nuclear energy proponents have said in public for years.

The fact that no insurance company will cover the liability of a complete meltdown and radiation release is evidence of the fact that it's a definite probability that there will be -- or is a definite possibility that we will have a meltdown.

A two-year study by an MIT scientist, Dr. Joe Yellen and Dr. Paul Jaskow reported in the New York Times of May 6, 1979, Section B, page 6, estimates that 50 percent of the exposed population within a 30-mile radius of a meltdown would probably die from fallout poisoning. In some areas that would mean over two million deaths. The permanent contamination of thousands of square miles of the United States resulting from a meltdown would obviously spread over the entire U. S. economy overnight.

Reference to a recent air crash such as the tragedy at O'Hare recently, as evidence of the justification of the fact of nuclear risks, and are evidence of the fact that all actions in life entail risks, are ludicrous.

What such accidents show is that fallible humans and fallible machinery will always be liable to failure, and could the nuclear waste disposal pool at Zion take a crash from a large airplane without melting down, or a radiation release? Or could the reactor take such a crash?

Proponents of the plutonium economy of the fast breeder recycling fuel system say that the method of burying spent fuel rods would be the creation of plutonium mines -- bomb fuel easily accessible.

They contend that recycling fuel at breeders would be too hot to hijack, so to speak.

But it seems to me that so toxic wastes would require shielding from the environment which would have to be absolutely fool proof. Accidents such as Browns Ferry in 1975 and Three Mile Island recently show that no such safety exists.

The running of such risks for trivial purposes such as boiling water to power steam turbines is obviously absurd. The laws of nature provide thousands of economical methods of doing so with no threat to national security. And every nuclear power plant is a threat to national

security. To continue to run such risks as meltdown in storage pools and reactors, let alone increase the probability of such disasters, was unimaginable until the 1940s, and shows a grave weakness to the logic of atomic power advocates.

Thank you.

(Applause.)

CHAIRMAN WOLF: Ms. Katherine Quigg?

MS. QUIGG: I don't have to testify early, so someone else can go ahead. I'm not in a rush. I'll be here. Thank you.

CHAIRMAN WOLF: All right.

Mr. Harrison?

LIMITED APPEARANCE STATEMENT OF ROGER HARRISON, DIRECTOR OF ENVIRONMENTAL CONTROL, CITY OF WAUKEGAN, ILLINOIS.

MR. HARRISON: My name is Roger Harrison. I'm Director of Environmental Control for the City of Waukegan. We're a city of 65,000 directly south -- I hate to disagree with the Attorney General -- but the entire population of the City of Waukegan is within 8 to 10 miles of the nuclear power plant, not 12 miles, as he stated.

We depend entirely on Lake Michigan for our water source.

On June 4th, the Council Judiciary Committee held hearings concerning actions that our Council wished to take

and the Council decided after these public hearings to send me here to state the City's opposition to increasing the storage capacity of the Zion Nuclear Facility.

The testimony we received at the City Council was very interesting to me as a person in the political arena, because we both heard from the people that are strongly anti-nuclear power industry entirely, and we heard from people that believed in nuclear power as an energy source that was viable and usable.

The people who are anti-nuclear power stated they didn't want this concentration of nuclear energy.

Now, all of the Council and the Mayor also have these concerns, so I'm speaking in all their behalf.

Firstly, to increase the storage capacity increases the amount of nuclear material, as the Attorney General stated. This obviously increases the potential for disaster. And whether or not you can quote statistics to me, and whether or not I believe them, that it's 1 in 1000, or 1 in 10,000 or 1 in 100,000 chances -- or 1 in 1,000,000 chance -- that anything could happen, the question that must be asked is: Are we willing to take the consequences of that one chance in a million to have the whole of Lake Michigan poisoned, to have the whole of Northeastern Illinois and Southeastern Wisconsin poisoned, for thousands of years? This is the question.

Another question is that the Zion plant is one of

the largest. It's also one of the only ones built right in a populated area, right in the municipal borders of Zion, and has one of the worst safety records.

Is this an area we want to allow to increase the storage 2-1/2 times what they have now?

Another question which was addressed -- and this is a question addressed by people who believe that nuclear power had a future -- this question was: What are we doing by allowing increase in storage facility now? Are we not allowing the taking care of these nuclear wastes, these most poisonous of materials, are we not allowing the decision to be postponed even further?

You heard in 1975 a request was made to increase the capacity of storage. Here we are in 1979, and we're asking again to increase storage.

And this is no solution.

If the Nuclear Regulatory Commission makes a decision against the increased storage capacity, will this not send a message out that we want a permanent solution to the problem of nuclear waste made by the Federal Government, by the nuclear power industry?

We hear that the Federal Government and other agencies are looking for another storage facility. A storage facility is not going to solve the problem.

The nuclear industry has admitted they probably

shouldn't have built the Zion plant where it is today. Okay, we've read this in the papers. You've heard it on the news. They've already admitted that this is not a good site for a nuclear plant, and if they had it to do today it would not be built.

Is it wise, therefore, to increase by 2-1/2 times the amount of nuclear material stored in this facility?

The City of Waukegan, the Mayor and the Aldermen of the City, have sent me to say in the strongest terms possible, no.

(Applause.)

Gentlemen, the questions that have to be answered here are twofold:

One is the technical feasibility and the technical possibility and the reasonableness of increasing the storage facilities. And some people have said technically that this is feasible. This is a problem that can be resolved. We can work with these materials.

The other problem is political. I come from a political body. I represent 68,000 people. And they are saying the people don't want this increase. They're saying the people have seen -- the people have lost a lot of confidence in the nuclear power industry.

CHAIRMAN WOLF: Mr. Harrison, you have one more minute.

wai 12

MR. HARRISON: One more minute? That's plenty.

The people of Waukegan are saying that it's time for the government and the nuclear power industry to act responsibly and not tell me that the solution to nuclear waste will come in the future. This is the way the nuclear industry began. "We're going to have a problem with nuclear wastes, but this problem will be solved in the future."

We're at the future now, and we're being asked to believe that it's going to be solved in the future -- further in the future. And, frankly, the people are saying we want a solution beginning now. We don't want to just store it.

(Applause.)

That concludes my comments, but basically we, of Waukegan, would not like to see this facility allowed to increase their storage by 2-1/2 times.

CHAIRMAN WOLF: Thank you.

(Applause.)

CHAIRMAN WOLF: Mr. Peyton?

LIMITED APPEARANCE STATEMENT OF THOMAS PEYTON, ON BEHALF OF THE PEOPLE'S RESOURCE CENTER AND THE BELIEF IN PEACE AND JUSTICE CENTER.

MR. PEYTON: I have a short statement, and I also have a brief preliminary statement.

My name is Thomas Peyton. I represent the People's Resource Center and the Belief in Peace and Justice Center.

I am also a Catholic Priest, and I work for a group called the National Federation of Priest Councils which is presently involved in a national discussion that will call for a moratorium on the building of nuclear facilities throughout this country.

The problem as we see it is a medical and a moral question. The bias of this group here, of the Regulatory Commission -- I speak not personally, but in the constituency -- I think is evident. And it is unable to deal with the complexity of the problem. There is nobody here with a medical background. There's nobody here with a moral background -- professionally speaking.

(Laughter.)

And I think that these are very important elements that must go into the mix.

You just heard a political person speaking. There is nobody here to represent that aspect of the problem. We have a table loaded with lawyers, and we have some persons with scientific backgrounds. And I submit that it makes me feel very uncomfortable to see a problem of this complexity being decided by such limited professional expertise.

(Applause.)

My statement is the following:

The recent nuclear accident and resulting tragic consequences on the lives of thousands of people in the

vicinity of the Three Mile Island nuclear plant in Pennsylvania makes one point absolutely clear:

Power companies can no longer be trusted in implementing their nuclear policies.

(Applause.)

They are, in fact, enemies of the people.

(Applause.)

Because they place profit above human safety.

Unfortunately, present government policy -- and I speak to you, because government is supposed to protect the people -- present government policy has encouraged and allowed such a situation by virtue of federal legislation that absolve power companies from any significant responsibility, especially financial, in cases of accidents.

Power companies such as Commonwealth Edison can indeed afford to take chances in its nuclear operations because the U. S. Government limits their liability, their financial liability, that would be connected with any public harm that they are very likely to inflict on us at some time in the future.

The very fact that this Nuclear Regulatory Commission is meeting to even consider Commonwealth Edison's request for more than doubling its present storage facility at the Zion Nuclear Plant to me means that the Federal Government is ready, once again, to trade human welfare for

wal 15

industry profits.

(Applause.)

We do not want any more chances to be taken with our lives, and with our health. We would urge this Commission to begin here at Zion to protect people, and not Profits. We would urge you to face up to the realities that the present storage facility was never envisioned nor designed to handle 2-1/2 times its present load capacity.

CHAIRMAN WOLF: Father Peyton, you have one more minute.

FR. PEYTON: That racks used for higher density have already proven themselves faulty at the Monticello facility in New York; that the increased radioactive toxicity of a higher-density storage facility at Zion would create a major medical hazard that could make Chicago in the future a cancer capital, are facts that we would ask you to consider; that the ten tons of plutonium that would accumulate in the higher-density storage at Zion would be a ticking nuclear time bomb, ready to ignite in case of an accident, if there is water loss in the pool is something else we would ask you to consider.

We of the people are here to urge you to begin to put a stop to this nuclear madness that threatens to ruin the Chicago metropolitan area. We cannot live with more nuclear plants and more wastes. We can live if we begin to

regulate them and begin to think of phasing them out.

People are ready to make a choice. Contrary to what Commonwealth Edison has stated, we do not need electric toothbrushes and hair dryers and hedge cutters, et cetera, if it's a question of our health and our safety. Please put this to the people. Do not discuss it just among yourselves.

(Applause.)

CHAIRMAN WOLF: We'll take a ten-minute break, and when we resume I will ask Marilyn Shineflug to be the next speaker.

(Recess.)

WRB fls

2271 163

WRB
1C agb1

CHAIRMAN WOLF: May we come to order, please?

The next witness will be Ms. Marilyn Shinefling.

MS. QUIGG: Mr. Chairman, may I address you?

The people here are very concerned about the time of the hearing tomorrow. Some of them are leaving because they have to and they want to know when they can testify tomorrow.

CHAIRMAN WOLF: Well, we're going to start the meeting at 9:00 a.m. in the morning.

MS. QUIGG: Will there be limited appearance time tomorrow morning?

CHAIRMAN WOLF: We think so, but we haven't worked it out yet.

MS. QUIGG: How soon will you know?

CHAIRMAN WOLF: Before the end of the hearing today.

MS. QUIGG: Well there are people here -- are there people here who would like to testify during the day tomorrow at 9:00?

(Show of hands.)

If you don't make it today, would you want to testify tomorrow morning or tomorrow night?

VOICES FROM THE AUDIENCE: Tomorrow morning.

MS. QUIGG: They would like the morning. And I would like to point out that according to the guidelines of

agb2

the NRC persons making limited appearances should be asked to make their statements early, so that the Board will have an opportunity early in the proceeding so that they will be able to include the questions that are raised in there --

CHAIRMAN WOLF: Madam, I'm very familiar with the rules. I understand. We're going to do the best we can.

MS. CRIG: Thank you.

CHAIRMAN WOLF: You may proceed, please.

LIMITED APPEARANCE STATEMENT OF MARILYN SHINEFLUG, A RESIDENT OF THE STATE OF ILLINOIS

MS. SHINEFLUG: My name is Marilyn Shineflug, I'm speaking today, I'm just a co-chairman of the Illinois Safe Energy Alliance.

The Illinois Safe Energy Alliance is a coalition of groups and individuals who believe the proposed amendment to the operating licenses held by Commonwealth Edison for the Zion station to permit the increase in storage capacity of the spent fuel pool from 968 to 2,112 fuel assemblies should be denied.

Reasons to support this request are as follows, and I've got them numbered.

One: the safety of spent fuel storage in compaction has not been thoroughly analyzed. The NRC has not even completed a generic Environmental Impact Statement on the safety of spent fuel compaction. Instead, compaction

agb3

requests have been granted on a case-by-case basis. This type of haphazard licensing lends support to charges that the NRC is not an effective regulatory body.

New information about the dangers of spent fuel storage is being uncovered. For example, what are the ramifications for residents of Northern Illinois of the Sandia Laboratory Report, "Spent Fuel Heatup Following Loss of Water During Storage." This report was brought to the attention of this panel by Dr. Richard Webb when he spoke last November.

If the NRC is to earn the public's trust, Dr. Webb should be guaranteed a generous amount of time to serve as an expert witness before this panel. Certainly no decision to allow expansion of the pool storage capacity should be made until all the safety issues raised by the Sandia Report and by Dr. Webb are resolved.

Reason number two why the permit should be denied.

Granting of this license amendment will merely postpone the day when the problems of radioactive waste disposal must be faced directly.

We now have nearly 5,200 tons of spent fuel from 72 reactors stockpiled around the nation. By 1990, the amount is expected to rise to 37,900 tons.

Despite claims to the contrary, there is no

agb4

solution to the long-term safe storage of high-level radioactive waste. The final interagency review group report on nuclear waste stated only that present knowledge was adequate to identify potential repository sites for further investigation. That is not the same as a solution to the safe disposal of nuclear waste.

Reason number three: Commonwealth Edison has no contract for disposal or even removal of spent fuel from these storage pools. If the public wisely decides to reject the building of more away-from-reactor storage sites, and if no long-term solution to the disposal problem is devised, who is going to be liable? Can we count on the utility to maintain the site in a secure fashion for hundreds, if not thousands of year?

Denial of the proposed amendment will protect local residents from even greater hazards than they already contend with.

The fourth reason is that increased storage capacity is not need, because the Zion station should be phased out of operation as quickly as possible. And the reasons for the phase-out are as follows:-- And I'm going to paraphrase this in the interest of time. They are:

The Zion reactors are located in a densely populated area, actually in violation of current NRC siting criteria. Waukegan is seven miles away. And, to make a long

agb5

story short, there are thirty-nine cities with seven million people within fifty miles of the Zion plant.

Another reason for phase-out is that problems caused by the use of zirconium fuel cladding may be serious enough to warrant an immediate end to nuclear power.

Referring to that accident at Three Mile Island, Dr. Daniel Costello of Fordham University charges that, and I quote:

> "...claims of ignorance and the pretension of mystery on the part of the utility company and federal experts in regard to the appearance and disappearance of the hydrogen gas are lies."

He's referring to the hydrogen bubble that we all heard about at Three Mile Island.

> "Explanation for these occurrences are commonly available in the literature on nuclear engineering and safety and center around the use of zirconium alloy cladding.
>
> "Experts within the American nuclear establishment are admitting privately that they are certain the hydrogen was produced by the reaction of tons of zirconium cladding with the steam formed in the reactor vessel during the early stages of the accident. These men know full well"--

agb6

and these are still his words -- "These men know full well the hazards of zirconium fuel cladding, but they also know there is no alternative to zirconium in light water reactors and, for this reason, they have concealed the truth concerning the catastrophic events at the Pennsylvania reactor."

CHAIRMAN WOLF: You have one more minute.

MS. SHINEFLUG: Okay. He continues:

"Any loss of coolant or power excursion accident in these reactors will necessarily result in zirconium steam fires in the core, releasing enormous amounts of flammable hydrogen and heat and causing extensive damage to the cladding fuel, as has been proven by the true Three Mile Island disaster.

"The suppression of this information has been going on for a number of years prior to the accident, since it is clear the public awareness of the use of explosive material in the construction of nuclear power plants presents an intolerable challenge to their continued existence."

Basically then, we don't need the power, and I cite Commoner's statistics in my written statement.

agb7

I won't sum it up. Just to say for all the above reasons which I mentioned, the Illinois Safe Energy Alliance calls upon this Board to deny the expansion of the storage pool.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Dr. Axelmeyer.

LIMITED APPEARANCE STATEMENT OF DR. AXELMEYER, A MEMBER OF THE DeKALB AREA ALLIANCE FOR RESPONSIBLE ENERGY

DR. AXELMEYER: I'm a professor of physics at Northern Illinois University, and I come here both as a private individual and as a representative of a group called DARE, the DeKalb area Alliance for Responsible Energy.

I am opposed to the expansion of the spent fuel storage facility here at the Zion Power Plant. And my basis for that is it rather much sums up very closely to what Ms. Shineflug has already mentioned. Namely, my concern about the zirconium cladding of the spent fuel elements.

As we all know, the Three Mile Island accident led to a hydrogen bubble which was produced by the reaction of the zirconium with the steam in the reactor pressure vessel.

In investigating this matter, I contacted both

agb8

Professor Earl Gulbransen, who is a materials scientist at the University of Pittsburgh who has spent 35 years at Westinghouse and is probably one of the world's great experts on the problem of zirconium cladding.

In particular, he has indicated that light water reactors are, in fact, non-operative, they should never have been started because of the problem of zirconium, that zirconium is absolutely essential to the operation of these reactors and that zirconium presents such a hazard in terms of the possibility of fires and hydrogen explosions, that it should never -- these reactors should never have been developed in the first place. I think he's in a very good position to support that claim.

endlc1

2271 171

1C2 eb1

In discussing the matter with him on the telephone yesterday, he indicated another concern which I would like to share with you. He says that what worries him is that hydrogen is put under pressure in the cooling water in a reactor and what happens-- This is to avoid the development of free oxygen which of course presents an explosion hazard. In doing that, the hydrogen will be absorbed by the zirconium and produce zirconium hydride in the cladding.

Now his concern is as follows:

Once that is in there, one has a rather more reactive chemical than you would have otherwise and when that material is put in the spent fuel storage, his concern is that it will be more hazardous than it would be if it were in the original zirconium form.

So that the possibility of reactions, dangerous reactions, would be even greater than they would otherwise.

This is presumably something that hasn't been thoroughly looked into by the NRC or by the industry.

After my telephone call to Professor Culbertson I also called Richard Webb, who reminded me that he had testified right here in Zion last November. His concern is with respect to a major accident possibility and the kind of scenario that he is worried about is that if there were an accident, say in a plant like Zion, comparable to what took place at Three Mile Island, then the supervisory

eb2

personnel at the storage part of the plant would have to abandon it and under such abandonment, in particular if the accident would knock out the electricity as well, that's it is possible with the lack of the pumping facility for pumping the water through to cool the rods, that the spent fuel rods possibly would boil water away in the period of like three or four weeks unattended.

Under such circumstances, Dr. Webb has made some calculations which at this point are tentative only, and he also has referred to a Sandia report by a Dr. Benjamin and his co-workers in which this matter has been looked into with the question in mind as to whether there would be a high likelihood of zirconium ignition, namely a fire in the zirconium once the water boiled away.

Both calculations as I say are not as thorough as one might like, but in each case the answer is that Yes, there would be a significant chance of fire.

The first thing then that one concludes from this is that certainly these studies should continue and should be carried out in a thorough way. This has not yet been done.

Now I want to emphasize here that this is just with respect to ordinary fuel that has not yet been compacted so if you have a danger there which hasn't really been thoroughly studied, it seems to me that you don't go and compact the spent fuel assemblies and then possibly exacerbate

eb3

the problem even further.

Thank you very much.

(Applause.)

CHAIRMAN WOLF: Thank you.

Mr. Reukberg.

LIMITED APPEARANCE STATEMENT OF MR. REUKBERG

MR. REUKBERG: If nuclear power is so good, why do the lights keep flickering?

Members of the Nuclear Regulatory Commission, I'm a graduate student working on my Ph. D. in Chemistry. I have taken the time to come here today because I feel that you are undertaking responsibility for a very important decision. You will decide if more of the most poisonous substances on earth should be stored on the shores of Lake Michigan.

Commonwealth Edison should not be allowed to do this. Commonwealth Edison has one of the worst safety records in the country. In 1965, 400 pounds of bomb-grade uranium were found to be missing from the Zion Plant. Why should they be entrusted to safeguard these materials and in a place where they have the potential to do the most harm the most rapidly and the most irreversibly?

I am just one person, but during the past few weeks a few friends of mine have gone around asking people to sign a petition in support of my opinion, asking that the request for increased fuel rod capacity be turned down. Between 70

eb4

and 80 percent of the people I asked -- and that's closer to 90 percent -- signed those petitions.

This indicates that the people who are to be affected by this decision overwhelmingly oppose the expansion of spent fuel rod storage capacity at the Zion Nuclear Power Plant.

I understand that later this week you'll be hearing the testimony of nuclear experts. Nuclear experts have a remarkable record. I cannot find a single instance where they made a single mistake. That single mistake is that they have never erred on the side of caution.

At the beginning of the A-bomb tests, AEC scientists thought that radioactive particles would be swept out in the atmosphere, but there was fallout. Then the AEC maintained that the main danger from fallout would be external to the body. They hadn't considered its introduction into food.

In 1953 the AEC stated that the only danger from strontium-90 was ingestion of bone splinters, but in 1956, even the AEC acknowledged that milk was the most important food source of strontium-90.

The experts thought that radioactive uranium tailings were safe so they were used in the construction of homes and schools which must now be torn up.

Experts said that a daily dose of .1 rad would have no effect. This was later lowered to .17 rads per year, and now it appears that there is no safe dose of radiation.

ob5

New evidence shows that the NRC had underestimated the health effects of uranium mining by a factor of 100,000. Experts thought that they could safely store high level radioactive waste. Hanford Leaked 400,000 gallons.

465

The Rasmusson Report underestimated the deaths from a major nuclear accident by a factor of ten, and the chances of such an accident happening by a factor of a hundred.

It's small wonder that the people don't believe the experts any more.

If this Commission is concerned with safety, if it is concerned about what the people in this area want, if it is concerned with the security of the millions of people who live around Lake Michigan and rely on it for water, then this Commission must not allow the storage of additional spent fuel rods.

Additionally, I recently read that the increase would allow the Zion Power Plant to operate it for an additional 35 years. This is longer than the life expectancy of the reactor.

If this is true I can only conclude that the spent fuel will be shipped in from other sites and what is at issue is whether Commonwealth Edison will be permitted to build a permanent waste storage facility.

Thank you.

CHAIRMAN WOLF: Thank you.

eb6

(Applause.)

1c2

CHAIRMAN WOLFE: Mr. Kilbourne.

2271 177

LIMITED APPEARANCE STATEMENT OF RICHARD KILBOURNE

wb1

MR. KILBOURNE: First I would like to ask if transcripts of this hearing will be available for the public, and when.

CHAIRMAN WOLF: It will be in the repository at the local library. I don't know how quickly it gets there, but it automatically goes there.

MR. KILBOURNE: The major premise of Commonwealth Edison is that the increased spent fuel storage is only a temporary contingency, that Edison will start reprocessing its spent fuel as a solution to the problem of its disposal. Reprocessing the spent fuel creates yet another step in the nuclear cycle. It begins with mining the ore and ends with disposal of spent nuclear wastes.

The more complex any system or organization is, the higher the probability for system failure. A system with more moving parts if more likely to break down.

However, the major evil of storage of nuclear waste and its ultimate reprocessing is plutonium. Seventy-five years ago plutonium did not exist. Each reactor now produces about four or five hundred pounds per year. It takes twenty pounds to build a nuclear bomb.

The substance remains extremely toxic and carcinogenic for over 240,000 years. This plutonium is an acute danger that could easily destroy all human life either through

wb2

nuclear conflagrations or terrorism or defense, or through simple leaks and accidents which would release plutonium into the environment.

240,000 years is a long time to keep waste contained. Our concrete sidewalks last less than twenty years.

The storage of spent fuel rods with the hope of reprocessing seems to be a moral evil, as if it is proposing to give birth to a merchant of death.

However, more important, Edison's storage and reprocessing of spent nuclear waste is an economic evil. Edison wants the government to pay for developing reprocessing centers. ComEd is willing to take on the profits associated with increased proliferation of nuclear power but it prefers to let the government bear the cost and, through the Price-Anderson Act, responsibility of accelerating nuclear power and nuclear fuel reprocessing.

We are the government and it is proposed that we pay for Edison's mistakes, miscalculations and accidents.

This is an uneconomical proposal for Edison also. Exxon, with vast nuclear holdings, has concluded in an internal study that continued investments in nuclear power might not be economically feasible. This was in The Chicago Tribune, Sunday, June 10th.

So if the expansion of nuclear waste facilities

ebl
ls wb2

and, by implication, the expansion of the nuclear industry is not seen as a moral evil through the great potential for human death and destruction by the nuclear poisons and bomb materials generated, then perhaps Edison will listen to the power of the dollar and realize that there is no economic justification for this gamble with human existence.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Mr. Andrew Thayer.

LIMITED APPEARANCE STATEMENT OF ANDREW THAYER

MR. THAYER: My name is Andrew Thayer.

CHAIRMAN WOLF: And your address?

MR. THAYER: I am currently going to Northwestern University in Evanston, 1735 Orrington Avenue in Evanston.

CHAIRMAN WOLF: Thank you.

MR. THAYER: I lived near a nuclear dump, waste dump, in Holland, New York, called West Valley. At that dump there have been many instanced of radioactive materials seeping into the ground water and into the people's drinking water. In December, 1967, a Rochester attorney climbed under the fence of the West Valley facility and took a water sample.

He took that water sample back to the AEC Health and Safety Laboratory at New York City. They tested it and found it contained 30,000 times the allowable limit of

eb2

strontium-90, a radioactive substance.

Three days later, the AEC rushed out a press statement saying that employees who conducted the test "figured wrong."

I think that's a valid case of how we cannot trust the NRC, the AEC, or any of the nuclear industry.

Now I have a prepared statement also.

I'm a member of Citizens against Nuclear Power. Citizens against Nuclear Power is a Chicago-based group with more than 3,000 people who are opposed to the building of any additional nuclear power plants and seek to phase out as soon as possible the plants which are already operating.

I am opposed to the increased storage of radioactive waste at Zion because of the devastating accidents that could occur if Commonwealth Edison is allowed to do as it wishes.

One such accident which I will describe occurred in the Soviet Union.

In his book, Soviet Science, dissident scientist Zaharis Medvedev reported an explosion of radioactive waste that devastated a low-population region of the Soviet Union's Ural Mountains. The explosion of underground radioactive waste from nuclear reactors occurred in either late 1957 or early 1958, probably because the wastes were stored too close together.

eb3

Commonwealth Edison wants to pack their radioactive waste closer together at Zion, which is not a low-population area, unlike the Soviet Union's Ural Mountains.

A quote from Medvedev's book:

"For many years, nuclear reactor wastes from several reactors have been buried in special trenches in a deserted area of the Shielaminsk region in the south Urals. The waste was not buried very deep and it was not properly diluted. Nuclear scientists had often warned that this primative method of waste disposal was dangerous, but nobody took their views seriously.

"This explosion carried heavily contaminated soil over more than a thousand square miles in a lake district lying between the two big industrial cities, Cheliabinsk and Svedlovsk. Strong winds blew the radioactive clouds for thousands of miles. It was difficult to judge the extent of the tragedy immediately and no evacuation plan was put in operation right away.

"Many villages and towns were ordered to evacuate only when the symptoms of radiation sickness were already quite apparent. Ten's of thousand's of people were affected though the real figure has never been made public. Probably many

ebd

hundreds died quickly, thousands more slowly. And the full impact of the tragedy will probably never be known.

"The whole area where the accident occurred is still considered dangerous today and is closed to the public. This is certainly the biggest radioactive field in the world."

I might note that Zion has no evacuation plan and even if it did, the plan would probably be virtually ineffective due to the large amount of people who would have to be evacuated in the event of an accident at the Zion Plant.

To further quote from Medvedev's book:

"The irradiated population was sent to many hospitals but no one really know how to treat the different stages of radiation sickness, how to measure the radiation dose received by the patient, or how to predict what the effects would be, both for the patients and for their offspring. Radiation genetics and radiology could have provided the answer but neither of them was available.

"Many towns and villages where the radioactive level was moderate or high but not lethal were not evacuated, or were evacuated only later."

Lev Tumerman, another Soviet scientist who was formerly the head of the Biophysics Laboratory in the Institute

eb5

of Molecular Biology in Moscow and has since emigrated to Israel, confirmed Medvedev's disclosure. Medvedev said that Tumerman:

"Visited the area between the two Ural cities of Chelicbinsk and Sverdlovsk in 1960. He was able to see the hundreds of square miles of land there had been so heavily contaminated by radioactive waste that the area was forbidden territory."

CHAIRMAN WOLF: You have one more minute, Mr. Thayer.

MR. THAYER: I'm opposing Commonwealth Edison's request for more radioactive waste storage because this would mean packing the waste closer together, which is the same way the Ural Mountains disaster occurred.

Furthermore, Commonwealth Edison's safety record is so atrocious that we cannot risk having this potential disaster resting in such negligent hands. Commonwealth Edison's history is one of blatant disregard for the public welfare. The Zion Plant is just one example of Commonwealth Edison's irresponsibility.

For instance, for four years the Zion Nuclear Plant released water containing radioactive tritium into Lake Michigan without telling either the Nuclear Regulatory Commission or the public.

This past summer, Zion employees were manually filling open 55-gallon drums with radioactive waste until an

eb6

employee complained to the Nuclear Regulatory Commission in a public meeting.

Nuclear Regulatory Commission Regional Director James Kepler described the Zion's plant management as being so inept that "the right hand doesn't know what the left is doing."

Commonwealth Edison claims that this waste storage facility is only temporary. That's ludicrous. Some of its radioactive waste remains extremely lethal for 200,000 years. After more than 5,000 studies of ways of disposing of the radioactive waste at Zion and all other nuclear plants, there is still not safe way of disposing of the waste.

For Commonwealth Edison to claim that they are only temporarily storing this waste is like claiming thatthe earth is only temporarily orbiting the sun. As far as I'm concerned, Commonwealth Edison President Tom Krrans can put that radioactive waste in his backyard and see how temporary it is.

(Applause.)

CHAIRMAN WOLF: Thank you.

Bernice Russell.

LIMITED APPEARANCE STATEMENT OF BERNICE RUSSEL, RESIDENT, CRYSTAL LAKE, ILLINOIS

MS. RUSSELL: Bernice Russell, of Crystal Lake, 395 Elmwood Drive, Crystal Lake.

I'm very concerned about expanding radioactive

eb7

spent fuel rod expansion here at Zion. I shudder to think of so much drinking water being contaminated, and the radioactive waste is one of the big worries on nuclear energy although I'll admit radioactive cancerous releases are released periodically and there is no safe level of radiation.

But concentrating on radioactive waste, at Sheffield, Illinois, they claimed the water seepage into the surrounding farmlands would be very minimal, and already some time last year they explained how much more extensive it was than they expected. I will agree that Sheffield is being cleaned.

Similarly, I would not trust water seepage into nearby Lake Michigan or any other area around here. Seepage is very important and it does appear that the utilities do not have safe systems, considering all the mistakes and the fact that nuclear energy is like a train without brakes. It's running without knowing what's going to happen.

So I don't want any more nuclear production whatsoever. The spent fuel rods, which is the waste disposal system as mentioned before, zirconium reactored with hydrogen, will, at Three Mile Island, continue to be a problem, certainly for two more years. Then they're expecting to put the water in and clear out that radioactive waste into the Susquehanna River.

Now if Zion has not even an explosion but a mere meltdown, the zircon and hydrogen reacting will similarly

eb3

creats problems and we don't want it in our lake or anywhere. It's very dangerous.

In environmental economics, one of the things of production is externalities. Some are good, some are bad. Nuclear is bad in the cancerous wastes. And what happens? Who cleans up the wastes?

And thus they ask the government, the tampayers, us, to pay for it. I'll agree that Rockefeller asked for 100 billion for construction and also it's like socialism to the giant corporations in the energy cartel. We should not allow any more socialism into the energy cartel. These

074 externalities are very expensive to the people.

ANd if we do, Getty Oil abandoned its radioactive dump on the East Coast and said, "Okay, Government, you take care of it. The people can pay." We're not nearly as rich as the energy cartel.

The environmental externality, we want to get rid of every day that we have it. It's dangerous to our health. We truly be'leve it's not profitable to us; it will bankrupt our government. And if Zion has no more storage of spent fuel rods, the plant will have to shut down, and I say Hallelujah, that's what we want.

(Applause.)

All we get is four percent more energy. What for? We can get 45 percent more with energy conservation and

eb9

production. We can get 50 percent more with other forms like solar, wind, hydro electric, which is going to waste.

And further nuclear is random murder, according to Dr. John Gofman, a physicist. He says we should use the Nuremberg principles in allowing such an industry to continue.

We do not need high economies of scale; low economies of scale is much better. Small is beautiful, like Lekeman says.

I firmly balieve that nuclear energy business is purely in it for energy. It's socialism to the energy cartel. We complain if we give crumbs of Lazarus to the poor but we give billions.

If they can't store the fuel rods here, the government wants to build basins that will cost 50 to 100 million per basin, fill many of these. It will be 300, almost a third of a billion dollars. More socialism to the industries, corporations. We do not need it.

Elements magazine mentioned about a year ago 12 plants. Zion, Illinois, was mentioned as one with dangerous flaws. If we last that long, another four years perhaps only if we have a nuclear catastrophe, I want a nuclear moratorium, but if we last that long, industry will come back and say Okay, we made the mess, you tanpayers pay for it. Now we'll clean it up and you pay for the externality that we created.

eb10

The people that are dead will not have to pay for it, even if they got cancer and died slowly. What's the trade-in for having energy if you're going to die slowly before 30 or 20 years of cancer, if your kids are born with two heads? You can't recognize people you know because they've been -- they're blurred, or something like that.

EMA is another monster of this technology.

CHAIRMAN WOLF: Your time is up.

MS. RUSSELL: Thank you.

(Applause.)

CHAIRMAN WOLF: Peter Tarpey.

LIMITED APPEARANCE STATEMENT OF PETER TARPEY

MR. TARPEY: My name is Peter Tarpey.

Ladies and gentlemen of the Commission, I sit before you today not as an individual or as a representative of a group but I sit before you today as a representative of an elected body.

I am here today to go on record with a resolution from the City of Highland Park, asking that the Nuclear Regulatory Commission pay heed to the massive outcry of the people in this area, to recognize the faults and the pitfalls of the Zion Plant.

The City of Highland Park, through public participation and through its Environmental Control Commission, started before the Three Mile accident to investigate and

eb11

understand the problem before us now.

The City of Highland Park, through its legislative body, understands the significance of my being here, appearing before you, on record in opposition to the increase in the spent fuel capacity at Zion.

This City of Highland Park also must say to the people here, to the people of Highland Park and the Commission, it recognizes its responsibility in collaborating to alleviate this problem; be it through energy conservation or new forms of energy, the City of Highland Park will work and dedicate its future to that end rather than gamble its generations to the inevitable cost here at Zion.

If I may now read the resolution into the record?

CHAIRMAN WOLF: You may do that.

MR. TARPEY: "We, the City Council of Highland Park, as the duly elected representatives thereof, and therefore responsible for the health and safety of its citizens, have noted to inform the Nuclear Regulatory Commission that we are against the granting of permission to Commonwealth Edison to increase the amount of radioactive spent nuclear fuel stored at the Zion Nuclear facility in Zion, Illinois.

"We urge...."

and I emphasize "urge" --

"....the Governor of the State of Illinois and our

as12

Senators and Congressmen, as well as the Nuclear Regulatory Commission, to pay heed to the testimony of learned nuclear scientists, physicians, and geologists, who warn of the increasing threats of this radioactive waste to our lives and the lives of future generations."

I can only again state most emphatically that we take great interest, place great responsibility as a city to appear before you, but we feel most deeply that it is, if nothing else, our responsibility to appear before you, to work with you and work with the people but most of all, to accept the responsibility for the health and welfare of our citizens.

We expect the Nuclear Regulatory Commission to heed that, to accept our help, and to work with us to alleviate this problem.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Mr. Klapman.

LIMITED APPEARANCE STATEMENT OF SCOTT KLAPMAN

MR. KLAPMAN: My name is Scott Klapman. I live at 829 Baldwin, Waukegan.

My work in a research laboratory has required me to question and understand whole schemes. I find that the nuclear industry is ignorant in studying the total picture.

eb13

In order to get good answers you have to ask the right questions.

Some of the information will be based on the Sandia Lab report which assumes a total loss of water from the pool, which will lead to overheating. The report does not include a partial loss of water, which is more likely to occur before the total loss of water. And this, as it says right there in that report, could have much more serious consequences than the total loss.

You see, the water, if it is not completely gone, will cover up the vents at the bottom, and the total loss assumes air convection coming up naturally cooling it off. But if there's water at the bottom covering up the vents, then no cooling will occur and then an overheating accident will happen as discussed previously with the zirconium problems.

Another item which cannot be punched into a computer program is human error. I believe that I'm a qualified, competent technician, but on occasion I make mistakes. It's only natural. But if my experiment doesn't work out I can just run it over again, but in the nuclear industry, if they make a mistake that's it, they can't just run it over.

Basically the computer program is used to predict malfunctions; it cannot include human error. Therefore, they will always be inadequate. The technology is dragging behind

ebl4

the mushrooming nuclear industry.

Catch-all phrases like "new technologies to expect the unexpected" are contradictory and illogical by definition. My fear of the consequences of nuclear power is derived from current information and not the hope of new scientific discoveries for the future.

Spent fuel is unsafe because of the loss of water accidents and compacting the waste would only intensify any accidents that would occur.

I would like to ask the Board to deny Commonwealth Edison permission to compact the fuel storage and to deny any further proliferation of nuclear power.

Thank you.

CHAIRMAN WOLF: Thank you.

(Applause.)

Mr. Blacik.

LIMITED APPEARANCE STATEMENT OF LAWRENCE J. BLACIK,

116 South Park Avenue, Waukegan, Illinois

MR. BLACIK: My name is Lawrence J. Blacik. I live at 116 South Park Avenue, Waukegan.

I'm a research biochemist at the V. A. Medical Center in North Chicago, and also I'm a member of the Chivaukee Radioactivists.

Because we've already talked about, or other people have already talked about the problem of loss of water

eb15

from the pool, I'm going to talk about how such a loss of water could occur.

If has already been mentioned that a severe reactor accident resulting in heavy radioactive contamination of the area around the Zion Plant would quite probably lead to a loss of cooling water from the spent fuel pool. Such an accident would likely cause plant personnel to flee the area. Loss of water from the pool could then occur because of a lack of routine mechanical maintenance of the pumps, piping, valves, et cetera, of the pool's cooling system.

Another possibility is that an explosion in the reactor which ruptures the containment could damage cooling system pipes or the structure of the spent fuel pool itself, and this would lead to a loss of water.

A Nuclear Regulatory Commission document called the LER Output on Spent Fuel and Spent Fuel Handling Systems, covering the period 1969 to November 2nd, 1978, lists incidents which have occurred at spent fuel storage pools at several reactor sites.

There were 12 incidents reported involving breaks or cracks in piping or leaks at valves or pumps in the cooling systems of various spent fuel pools. At the Millstone 1 pool there were 30 leaks found in the stainless steel pool liner in March, 1972.

The pool liner at Turkey Point 3 was found to have

eb16

a leak of one gallon per minute in October 1974. Such a leak could have half emptied the 560,000 gallon spent fuel pool at Zion in about 20 days if the water that was leaking from the pool were not recycled into the pool.

A failure of one or more pumps could halt recycling of the leaking water or possibly reduce the circulation of the cooling water, resulting in a heating up of the pool water. The pool water would then boil away or leak away.

It's worth noting here at the Turkey Point 3 spent fuel pool there were seven failures in two cooling water pumps in July 1975, and one pump failure at Turkey Point 4 in April 1975.

Any system of pipes, pumps, valves, et cetera, requires maintenance. Such systems will function for long periods of time under the watchful eyes of maintenance personnel. Without maintenance, almost anything can happen.

Anyone who has worked in a scientific laboratory or as an engineer knows this. The point here is that there would not be maintenance on the system if the plant personnel left as a result of an accident in the reactor which released a great deal of radioactive material. They really couldn't be expected to stay in the area.

Because the spent fuel pool may be subject to accidents resulting in loss of water, I believe it is unwise to store a large amount of spent fuel in the pool. I urge

you to reject Commonwealth Edison's request for permission to compact the storage of spent fuel in the Zion pool.

Thank you.

CHAIRMAN WOLF: Thank you.

(Applause.)

Mr. Di Caprio.

LE agbl

LIMITED APPEARANCE STATEMENT OF LISA DiCAPRIO,
1345 North Sheffield, Chicago, Illinois.

MS. DiCAPRIO: My name is Lisa DiCaprio, 1345 North Sheffield, Chicago.

I am speaking on behalf of the Mobilization for Survival, a national coalition of organizations and individuals opposed to nuclear power and nuclear weapons.

The possibility of a loss of water accident, which has already been spoken to by previous speakers, is one which has not even been considered by the Safety Evaluations of both Commonwealth Edison and the Nuclear Regulatory Commission. However, such an accident is precisely the most potentially hazardous danger of a spent fuel pool.

The accident at Three Mile Island demonstrated for the whole world the possible consequences of a loss of water accident.

Something else was demonstrated by Three Mile Island, and that was the collusion of the national Nuclear Regulatory Commission with the Nuclear industry in concealing the actual situation.

Up until shortly before the accident, the NRC supported the Rasmussen Report. This report stated that the possibility of a major accident was the same as a meteor striking a large city. The NRC defined it as a definitive report and used it to discredit anti-nuclear activists.

agb2

What are we to accept from the NRC should an accident occur at Zion? Will the NRC again be operating in the blind? Will the NRC again conceal the actual level of radiation? Will the NRC again privately discuss the dangers of a free press? And will the NRC again fail to seriously consider the possibility of evacuation?

Already 50 gallons of radioactive water are leaking from the Zion spent fuel pool. The NRC has taken no action to deal with this, nor to warn the public of this danger.

In 1974, the NRC promised an ultimate disposal solution to the problem of radioactive waste in 25 or 30 years. At that time, the NRC plan was based on the use of reprocessing plants. These plants have now been proven to be inviable. There is no nuclear fuel cycle -- nuclear power is a one way process resulting in tons of waste.

Where is this increased tonnage of waste being stored? Principally in the temporary waste pools, the so-called temporary waste pools which are becoming permanent, such as the pool at Zion. Without these pools, nuclear power would not be possible.

In recognition of this, the utility corporations all over the United States have been seeking expansion of pools. All but 13 out of 50 requests have been granted by the NRC.

agb3

The expansion of waste pools is a deadly gift from the NRC to the utility corporations, an expression of their commitment to nuclear power itself.

There is only one solution to the problem of future waste, and that is the immediate and total shutdown of all plants in the United States.

(Applause.)

CHAIRMAN WOLF: Thank you.

Ms. Tillett.

LIMITED APPEARANCE STATEMENT OF JACQUELINE TILLETT, 220 North Avers, Chicago, Illinois.

MS. TILLETT: My name is Jacqueline Tillett. I live at 2200 North Avers.

I'm here today as a representative of the University of Illinois and Chicago Circle Students Concerned About Nuclear Safety.

I'd like to point out that one reason that more students from Chicago aren't here like row today is because the same Commonwealth Edison that is here is also holding hearings today in Chicago on a record 18-percent rate hike, 75 percent of which will go to build and develop more nuclear plants -- supposedly a cheaper source of energy.

Across the country more and more students are getting involved in the movement to stop nuclear power plants. New organizations, rallys, meetings, forums, are cropping up

agb4

on hundreds of campuses. Our demand is clear, our demand is simple: no nukes.

During the last two weeks, members of SCANS have been passing around a petition concerning the Zion Plant. I'd like to read this statement and present the petition to the Commission.

"To the Nuclear Regulatory Commission:

"The Zion Nuclear Power Plant is requesting permission to expand its spent fuel rod storage facilities. They were allowed their present facilities predicated on the understanding that these highly radioactive and poisonous materials would be treated and reprocessed after a suitable storage period. But the reprocessing procedure is so dangerous that no commercial processing plants are licensed to handle these materials, so the rods are accumulating.

'The storage tanks which the Zion Plant has already are leaking radioactive material.

'Clearly if the Zion Plant cannot keep their promise to safely dispose of these poisons and cannot safely store what they already have, they should not be permitted to make and store more.

"We the undersigned ask that the request

agb5

for increased spent fuel rod storage capacity be denied."

I have approximately a thousand signatures here from the University of Illinois.

(Applause.)

CHAIRMAN WOLF: Thank you.

LIMITED APPEARANCE STATEMENT OF JULIAN HOROWITZ, A RESIDENT OF HIGHLAND PARK, ILLINOIS.

MR. HOROWITZ: My name is Julian Horowitz. I'm a resident of Highland Park, Illinois. My academic training is in engineering and computer science, for the past 15 years I have been designing and implementing fairly complex man-machine systems. I'm also a member of CORP, Citizens Opposed to Radioactive Pollution.

I'm against the granting of Commonwealth Edison's request. I will discuss some of the specific problems related to the high density racks that Comm. Ed. wishes to install, I also plan to discuss the problems that occurred at the Monticello reactor spent fuel pool and other implications of the request.

The most important concept that most engineers learn, practically, is that the real world can never be completely predicted from the equations that we all learned in engineering school. Even in systems that completely eliminate human interaction, which are small, something

agb6

unpredictable always occurs.

Most of us usually do considerable testing of our designs and implement pilot plans for further testing, then do full-scale testing on a limited basis. We then can expect to still have failures of our system, even after it is in full use. Most systems go through this testing even in applications that do not have human life at stake and no industry presents as much of a risk to our health and safety as the nuclear industry.

C3

We are sometimes not allowed, however, to test our systems adequately. In one case, we have non-technical management who naively assume that our technology is foolproof and wonderful, or perhaps those who feel that economic needs transcend the damage that would be caused by a probable failure.

There are, of course, many other reasons. The demand for technology is so high today that in many industries, my own included, even the least qualified technologist can find a job.

Much of the public, including even we technologists, refuse to admit that technology does have limits. There are many things we do not understand. There are many things we do not understand about our individual fields.

Those of us operating in the state of the art are operating in considerable amounts of uncertainty and risk.

agb7

Many of us, but not all, will not begin implementing a system until we know that the whole system will work, at least in theory. Let's now see how this relates to the current issue.

Last year, high density racks were installed at the Monticello Nuclear Generating Plant at Minnesota's Northern States Power Company. Within a month, the level of the tubes had swollen to the point that if a fuel rod had been inside, it would have been trapped within.

The tubes were then vented with holes drilled in the top of the assemblies. The bad tubes were fixed. Three months later, two tubes that had been fixed had again swollen beyond specifications.

The design to be used here at Zion would have vents already manufactured in the tops of the assemblies. But why did two of the tubes in Monticello fail even with the vents? If the manufacturers tested their work, why did the problem occur so quickly in Monticello?

Since the new design provides more water contact, what type of corrosion testing has been done to ensure that the racks will last for Comm. Ed.'s expected use. It's obvious that they weren't tested enough to insure that the racks at Monticello would last for one month, since the swelling was caused by hydrogen gas released during corrosion.

agb8

Comm. Ed. is planning on the government providing a long-term waste repository within a decade. Their Chairman of the Board stated last month at a stockholders' meeting that there is a long-term solution to the storage problem, that only politics, federal politics is preventing its implementation. The racks would, therefore, only need to last for a decade or so.

Yet the same week the highly respected journal, Science, stated in a definitive article on radioactive waste disposal that a technical solution still eludes science. The racks might, therefore, have to be used indefinitely -- that again is my comment.

Clearly Commonwealth Edison is operating with either incorrect or, at best, controversial information.

Going back to the corrosion problem that has already caused rack swelling, I quote from a paper of B.F. Warner on the storage in water of irradiated oxide fuel elements:

> "It is known that both Zircaloy and stainless steel are reactive metals which rapidly form thin adhesive oxide type films in water. These films then act as barriers to further corrosion, but they can degrade with time and metal is continually moved."

Quoting further:

> "Small changes in the system can cause

agb9

acceleration or modification of the process, either uniformly or locally. There are many variables involved and they can act independently or synergistically."

Continuing quoting Dr. Warner:

"Theory cannot cope with all these variables and recourse to experiment and observation is necessary."

The Environmental Impact Appraisal of March 29 states following regarding the neutron multiplication factor, one of the key figures to watch in avoiding an accident:

"Since the neutron multiplication factor of the spent fuel pool is not a quantity which is measured with good accuracy. The only available value is the calculated one."

I hope the engineers have good equations.

The nuclear industry seems, in general, to live with much technical uncertainty, poor technical information and naive optimism. There is considerable controversy about the effects of low-level radiation, yet old standards still are being used. There is no long-term solution to the waste problem, yet the installation of the racks assumes that the geologists will find one.

As judged by the events at Monticello, Three Mile Island, the fire at Browns Ferry, the numerous leaks at

agb10

waste dumps, the problems at pools at processing plants, the technology is far from perfect. And the regulation of the industry still leaves a lot of be desired.

A recent article in Business Week states that the utility industry is not even certain about the rate of increase of demand for electricity.

We were told this spring that since not much is known about the consequences of high burnup of fuel, an experiment was authorized to be run at Zion to test it out for eventual use all over the country.

From my standpoint, most of the industry is running experiments and we, the public, are its guineapigs.

I urge the NRC not to authorize yet another experiment. Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Ms. Tyler?

LIMITED APPEARANCE STATEMENT OF EVELYN P. TYLER, 909 Glendale Road, Glenview, Illinois.

MS. TYLER: I'm Evelyn P. Tyler of 909 Glendale Road in Glenview, Illinois. I'm also a professor in the Department of Physical Sciences at Loop College, but I speak as an individual and as a member of the group, Citizens Opposed to Radioactive Pollution.

endlE
endWRBloom
WELandon

Up to now, the attention of the general public has been focused on the hazards associated with the dramatic reactor itself and its huge containment. The spent fuel pool, less imposing to the eye, is a final adjunct to an operating reactor and presents its own spectrum of the potential accidents affecting the health and safety of us all.

The design proposed would replace the spent fuel storage racks with new racks in order to crowd up to 2-1/2 times as much spent fuel into the pool, whose volume is unchanged and whose pumps, filters and deionizing equipment are not to be modified for the increased load responsibility. The pool structure and its steel lining, originally designed for 340 fuel assemblies and 170 metric tons, later modified and now capable of holding 868 assemblies, will be expected to bear 2,112 assemblies, weighing 1,056 metric tons.

In view of the fact that the proposed license amendment would permit significant changes in the spent fuel pool conditions and in the geometry of its hazardous contents, it is clearly necessary, according to the National Environmental Policy Act of 1969, to demand a full environmental impact statement on this matter.

The proposed high-density racks increase both the probability and the severity of a pool accident. The decreased center-to-center distance of the assemblies is to be accompanied by separation via tube walls containing

neutron-absorbing boral. This arrangement must be carefully maintained and monitored so as to avoid criticality; that is, the neutron multiplication factor K_{ℓ} must be 0.95 or less.

It is believed that a criticality accident occurred in Russia in a nuclear waste facility, causing wide devastation and great loss of life. The spent fuel rods, of course, contain highly radioactive and biologically important fission products, among them strontium-90, cesium-137, iodine-131, as well as plutonium. Any release of these into the environment is an unacceptable risk, and a major accident could conceivably disperse millions of curies of radioactivity over a wide area, including parts of several States.

Such a tragedy could result from the overheating caused by and following a loss-of-coolant accident. Coolant water could be lost by a severe leak, rupture of the pool wall, as by dropped cask or crashing airplane, or by boiling off if the cooling system failed.

Such a failure could occur following a major accident in the reactor that necessitated evacuation of operating personnel, as at Three Mile Island. It is vital that the flow of coolant not be blocked, even by less dramatic occurrences such as swelling of the rack components. And that Monticello incident that has just been mentioned, where venting did not completely solve the problem.

Under high temperature conditions a number of

serious changes can occur rapidly with unanticipated results. The zircaloy cladding of the rods can deteriorate, melt or react, as can boral when exposed following deterioration of the rack components, leading to generation of hydrogen gas. Changes in those structures could allow the fuel pellets themselves to slump and come together in new, potentially dangerous, configurations.

Note that by 1990 if the change is permitted that 10 tons of plutonium will be present in the pool.

The study accompanying Commonwealth Edison's request includes the calculation of heat generation, and I quote:

"Assuming a fuel burnup of 33,000 megawatt days per ton of uranium."

Now, in an attempt to improve utilization of the uranium supply, experiments are underway to go to higher burnup. In fact, Commonwealth Edison was granted, on March 7, 1979, permission for just such an experiment. I quote:

"To gain operating experience for an anticipated future extended burnup program."

And that's a quote from the Safety Evaluation that the NRC published on March 7 of this year. That's to be carried out at the Zion facility.

If the parameters related to burnup are changed, we're in a whole new ball park, and all previous environmental

impact assessments are useless to predict consequences.

Many technical matters are completely unknown here and could change drastically over the 20 to 30 year lifetime of the pool storage, assuming a limited duration will be set for this arrangement. Again, factors include increased corrosion of cladding and of tube walls; increased amounts and a different mix of fission products; new geometry of the deteriorated assemblies; new accumulations of crud and sludge of unknown properties, and so forth.

The experiments, having received permission to go to higher burnup with about two percent of the fuel assemblies unmodified, involve returning several assemblies to the reactor for one or two cycles of further irradiation and observing the changes. It is inappropriate to carry out such research, clearly preparatory to real change in operating conditions at the Zion facility, operating commercially so near a major metropolitan area.

Furthermore, I submit that it is completely inappropriate to increase the storage of hot and hazardous fission products at Zion, creating a de-facto radioactive waste dump without any assurance that it will be of limited duration.

Since the proposed changes are so sweeping in their potential impact on the health and safety of millions of citizens, and since so many of the factors involved

remain completely unknown, the generic impact statement of March 1978 and all other environmental impact assessments based on old burnup conditions, as well as old pool storage arrangements, are now useless.

I urge the Nuclear Regulatory Commission to deny the proposal under consideration now, and to reconsider it only when a full and complete environmental impact statement, based on the Zion facility, and leaving no questions unanswered or unanswerable, is presented.

CHAIRMAN WOLF: Thank you.

(Applause.)

CHAIRMAN WOLF: Father Hogan?

LIMITED APPEARANCE STATEMENT OF FR. BILL HOGAN, 1444 SOUTH KEELER, CHICAGO, ILLINOIS, ON BEHALF OF CLERGY AND LAITY CONCERNED.

FR. HOGAN: My name is Father Bill Hogan, H-o-g-a-n, from 1444 South Keeler, in Chicago. I'm here to testify on behalf of Clergy and Laity Concerned, which is a national organization of church groups -- individuals and groups -- interested in peace and justice.

Last year we were represented at the United Nations special session on disarmament in New York City, and at that time we decided to draw up a national program which would include a petition which we would circulate among our members and friends asking for a moratorium on any further development

of nuclear weapons or nuclear power plants.

At the time, Three Mile had not happened. But at that time we knew that there was a tremendous escalation in the arms race. We knew the fears of President Carter about what could be done with the wastes from nuclear power plants as regards weapons. And since that time, we have had a dramatic response to our petition.

We have chapters in 32 states now across the United States, and we have been circulating this petition for approximately six or eight months, and I am here to report to you that I believe that the public is changing its mind, not only about nuclear warfare but also about nuclear power.

We believe that this moratorium petition which we are seeking one million signatures for would precisely ask the Government and Commonwealth Edison at this time to hold -- not to expand -- this spent fuel pool.

We believe that if we have a hold on nuclear power and further development of nuclear weaponry, we will be responding to a feeling of the public, not only in the United States but in Germany and in many other countries of the Western world and throughout the world.

We also -- some of our members participated in a civil disobedience action here at Zion, and the judge and twelve members of the community found us not guilty of a crime, because they said that we were trying to respond to a

greater fear than the damages that could be caused by breaking a criminal trespass law. This was occasioned by a sit-in that we did at Zion long before the Three Mile accident.

So I think it's important to note that that judge in Lake County, and the twelve people, six men and six women, on that jury, found us not guilty. They thought that the danger that exists here at Zion even before what we know from the Three Mile accident, that that danger was more severe than the danger of some people breaking a trespass law.

Now we have much more information. We notice that Commonwealth Edison has withdrawn its ads which were running in the Chicago newspapers for almost a year, saying we should plug into coal, plug into uranium. And those ads have now disappeared off of television, and Commonwealth Edison is now advertising that they have speakers who are willing to come out and to speak to us and explain some of their problems, and ask what problems we have.

So I think there has been a definite change in public opinion and sentiment, and, therefore, we would ask the NRC to ask Commonwealth Edison to hold off on this expansion plan here, and to take seriously the criticisms of the expansion.

You have heard from scientists and members of the public.

(Applause.)

CHAIRMAN WOLF: Ms. Walton?

LIMITED APPEARANCE STATEMENT OF ALICE WALTON, DEERFIELD, ILLINOIS.

MS. WALTON: My name is Alice Walton. I live in Deerfield. The street address is 1421 North Woods Drive.

I'm speaking for myself and my children and my grandchildren and my not-yet-born great-grandchildren.

There must be no increased storage capacity permitted for spent fuel assemblies at the Zion plant, or any other plant.

There are many technical reasons to deny this request by Commonwealth Edison. You've been hearing them all afternoon, and you've heard them all before.

To me, the most compelling reason is that permission to store spent fuel only postpones the day when we, the people of this County, this State, this Nation -- and this world -- will face the reality and accept the fact that nuclear fission is not the solution to our future energy needs.

The electricity produced by nuclear plants is only a small part of our total needs for a good economy. Nuclear fission is dangerous, increasingly expensive, and uranium is a non-renewable resource.

We have no known way of disposing of the poisonous wastes. The linkage between nuclear power and nuclear weapons is terrifying and real.

This energy crisis is much bigger than this spent fuel controversy. We need to stop relying on this dangerous way of boiling water, and get on with the larger issue of making life safe and livable for our children and our grandchildren.

There are exciting and promising advances in the development of a renewable energy system that can in the future take care of all of our needs. We should be putting all our skills, ingenuity and resourcefulness into this long-range program, while we are phasing out the nuclear completely.

We can do this, just as we have done many marvelous things in the past. But we need to make this conscious choice now.

A first step is to deny added storage space for radioactive spent fuel, and turn our attention and our talents to the many and safe and renewable sources of energy that surround us.

I recommend for your thoughtful reading the articles by Barry Commoner, called "The Solar Transition," in the two recent issues of the New Yorker magazine, April 23 and April 30, 1979. Also, an article by Vince Taylor, called, "Energy, the Easy Path," in the June, 1979 issue of the Friends of the Earth publication called, "Not Men of Heart." Also, frequent and interesting and hopeful reports on alternative developments

in the weekly magazine, "The Engineering News Record."

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Barbara Parson.

LIMITED APPEARANCE STATEMENT OF BARBARA PARSON, 1138 TOWER ROAD, WINNETKA, ILLINOIS.

MS. PARSON: My name is Barbara Parson. I live at 1138 Tower Road, Winnetka, Illinois.

Since the first atomic bomb was dropped I have agonized over the Pandora's Box of nuclear proliferation, but this is my first opportunity to express my concerns.

I am deeply grateful.

I would like to address my remarks to the aspect of the spent fuel waste in this leaky storage pool at Zion.

Spent fuel is a euphemism. It is not spent. It remains extremely radioactive and toxic forever. I say forever, because surely a half-life of 24,000 years is forever in its incomprehensible remoteness.

This spent fuel, according to Dr. Thomas English of the Jet Propulsion Lab, California Institute of Technology, contains highly radioactive fission products, isotopes of plutonium, uranium and other actinines. Although the fission products decay after about a thousand years, the plutonium and other actinines remain a radiological hazard for 100,000 to

a million years.

I would also like to quote the NRC negative declaration on first increase. "During the storage of spent fuel underwater, both volatile and non-volatile radioactive nuclides may be released to the water. Storing additional spent fuel may increase the amount of corrosion and fission products in the spent fuel pool."

Let's talk about what actually happened, instead of what could happen. Tanks at the Hanford, Washington radwaste storage reservation are corroding and leaking. Approximately 700 million gallons of high-level waste are stored there, some so hot that they will boil spontaneously and continuously.

At one Hanford site, 20 leaks, totaling more than 50,000 gallons, have occurred since 1961.

Other testimony has defined the radioactive elements in this Zion pool, it's terrifying hazards to human life, its potential entry into the environmental pathways of all life on earth.

Only on drawing boards and charts can we talk about zero risk and absolute safety. We all know in real life there is no predictibility. Skylab is an example.

We are not gods, but at best fallible human beings. We ought here to pause and reassess. We are talking about forever.

(Applause.)

CHAIRMAN WOLF: Jean Fritschman.

LIMITED APPEARANCE STATEMENT OF JEAN FRITSCHMAN, 1341 ASBURY, WINNETKA, ILLINOIS.

MS. FRITSCHMAN: My name is Jean Fritschman, 1341 Asbury, in Winnetka.

I am a resident of Winnetka for 32 years, and have lived in the Chicago area all my life. Although for the past few years I've been aware of increasing shortages of energy with reference to heating our homes or using air conditioners in the heat of summer, I have never actually given much thought to the problem.

I suppose I felt that somehow the problem could and would be solved. It is only within the past few months that I have been aware that about 40 percent of our electricity in Illinois derives from nuclear power, and that the plant at Zion supplies a large portion of the needs of metropolitan Chicago, as well as the North Shore. And it is only within the past two months that I have learned that Commonwealth Edison is planning to increase its storage capacity of spent fuel by approximately 2-1/2 times.

Because of the close proximity of our community to Zion, I became concerned and felt that I ought to know more about how we are supplied with electric power.

There's a good deal written on this subject, and

I have tried to read as much as I could.

Our village has held meetings at which time we discussed quite extensively and thoroughly the plans of Commonwealth Edison to add this additional spent fuel to their present capacity, and we finally passed a resolution that no action be taken until a safe plan is produced for storage.

Now, my question is this:

If all this spent fuel is kept on site, will we not feel ourselves into reprocessing? And even with reprocessing and the incumbent dangers of moving the spent fuel, the problem of waste is still not solved.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Bryan Simon.

LIMITED APPEARANCE STATEMENT OF BRYAN W. SIMON, WAUKEGAN TOWNSHIP CLERK, WAUKEGAN, ILLINOIS.

MR. SIMON: My name is Bryan Simon. I live at 1100 Poplar Street in Waukegan, and I'm Waukegan Township Clerk.

Waukegan Township is the largest township in Lake County, and approximately 80,000 live in it. Lake County could well be the single most important area affected by your decision in this matter.

When I was elected in April of 1977 I pledged to the citizens of Waukegan Township that I would represent them

to the best of my ability on all matters concerning their welfare.

Therefore, I am here today to represent many of my constituents who are concerned, first, about the increased storage and, secondly, about the Zion plant itself.

Many of my constituents could not be here to speak with you today, and their health and well being is the primary reason why I'm appearing at these hearings.

I am concerned and quite worried, and I think that the expansion of storage of spent fuel rods at the Zion plant would adversely affect the future lives of Waukegan Township residents.

Studies indicate that by the year 2000 approximately 125,000 people will be living in this township. There are a few items I hope you will consider when determining your decision.

1. According to the NRC, 50 gallons of cooling water are leaking each day from the spent fuel rod pool at the Zion plant. If this leak should increase because of expanded storage, more water will then flow into Lake Michigan, thereby causing greater contamination of the water which Waukegan Township residents drink.

2. Waukegan is the Coho salmon fishing capital of the world. What would then happen when thousands of fish are contaminated by a possible pool accident or larger leak, and

then they're caught and eaten by residents of Waukegan Township and other people in other areas?

3. There will be increased radioactive emissions from the extra rods which will be stored in the spent fuel pool. This will naturally contaminate the air and affect approximately half a million people living in Lake and Kenosha counties, not just Waukegan Township residents.

When politicians formulate policies and make decisions, they sometimes think only of the present. I beg of you to think not only of the present but also of the future of this area, which will include the lives of Waukegan Township's children, their grandchildren and their great grandchildren.

As you can see, I am concerned also about the people who could be affected in 10 years, in 50 years, in 100 years -- and perhaps 200 years from now.

The Commission has something in the palm of their hand. I believe it's about 8 million lives, and will be more. Please don't harm these people by granting Commonwealth Edison their request.

Thank you.

(Applause.)

CHAIRMAN WOLF: Dr. Hilding.

Would you state your name and address, please?

DR. HILDING: I'm David A. Hilding, M. D., Professor

of Otolaryngology at the Abraham Lincoln School of Medicine, University of Illinois. I live in Winnetka, Illinois.

LIMITED APPEARANCE STATEMENT OF DAVID A. HILDING, M.D., WINNETKA, ILLINOIS.

DR. HILDING: At its proposed capacity, the Zion pool will contain ten tons of plutonium.

What would happen if this somehow gets into the environment? This is the question that must be addressed by this Commission in an environmental impact statement.

Recently the Department of Energy completed a draft environmental impact statement some three inches thick, concerned with disposal of spent fuel and waste. It completely ignores the problem of health effects of dispersed plutonium and other long-lived isotopes.

The reason for this surprising omission may be inferred from the recent Interagency Task Force Report commissioned by Secretary Califano. The Interagency Task Force obfuscated, on page 29, saying the hot particle theory has been discredited. In its content, this perfectly true statement falsely suggested that inhaled plutonium did not cause lung cancer or other serious problems. As a matter of fact, they actually stated in the same report that plutonium is not much more dangerous than lead.

We are thus falsely reassured about plutonium by these two government reports.

wel 17

In the Interagency Task Force Report they can fairly compare plutonium with lead toxicity by looking only at its acute immediate effect. And everybody knows plutonium is not particularly radioactive, and you can eat quite a bit of it and it won't kill you right away. Twenty or thirty years later, you're in trouble.

The essense of an impact statement is a balance between risk and benafit. If there's a false sense of security about plutonium toxicity, the balance is obviously thrown off.

The Nuclear Regulatory Commission must accurately weigh this balance. According to its own rules, it must complete a statement of the impact of the proposed change of storage capacity on the environment and on the risk to our health before it can even consider the proposed application.

Now, what would happen if 10 tons of plutonium was dispersed? As a physician, I can testify from experience about the effects on a single person. Years ago, radioactive thorium was used as an ingredient of the contrast agent for X-ray studies. It's since been abandoned because of its propensity to cause cancer.

I had occasion to help take care of a couple of patients who developed cancer of the sinus because of a tiny bit of thortrast which had been inserted in the sinus for diagnostic purposes. It had persisted for many years, and

it had caused a peculiar kind of cancer which we see only in patients who have had thortrast.

Now, we don't have similar experience yet with plutonium in humans, but as you know, it's an alpha emitter similar to thorium, and there's every reason from animal experiments to believe its effect on people will be exactly the same. Retained bits will cause cancer or leukemia, 10 to 30 years after.

In the meantime, we know that plutonium concentrates in the gonads, particularly the testicles. This concentration enhances the adverse genetic effects. How much plutonium would be required to kill you or me? The dose has been estimated to be only 1 or 2 micrograms. It might be only 10 micrograms. Frankly, I don't know.

I'm sure that inhalation of 10 to 20 micrograms can be safely relied on to cause cancer. How many 20-microgram doses are there in 10 tons? Remember, a microgram is a millionth of a gram. There are 1,000 grams in a kilogram. And you know what a metric ton is. The way I work it out, is the number 10 followed by a dozen zeros. That's more than the FEderal debt. In other words, it's a big number.

It would be more than enough doses to kill every person on earth from cancer or leukemia, several times over. During the few years before death they could have parented children with bad mutations. There would be enough doses left

over to lethally damage most other living things on earth. Our living planet could be turned into a lifeless desert, if only 10 tons of plutonium somehow were dispersed into the environment.

This disaster has been completely ignored. It has been obfuscated by the government reports of the Department of Energy impact statement of this very year, and of the Interagency Task Force report of this year. It should not be ignored in your considerations. You have heard several possible mechanisms proposed for dispersion of the material from the pool, from a loss of water accident to deliberate use of the stored materials by terrorists for destruction purposes.

Perhaps a disaster would only disperse a ton or two. That would be enough to fatally damage a lot of people, everybody in the Chicago area, and contaminate a lot of water, everything in Lake Michigan. And, of course, you are all familiar with the way that biological systems concentrate radioactive isotopes. A little bit of plutonium in the water--radioactive mater ial in the water, is concentrated by plants, eaten by little fish. Those in turn are eaten by bigger fish, until the concentration of many of these materials becomes many, many times that of the water. Water that's safe to drink will breed fish that have unhealthy doses of plutonium in them -- plenty to cause cancer.

The Nuclear Regulatory Commission simply cannot discharge its responsibilities unless it's prepared to take into consideration ten tons of plutonium and its effect on the people of our country and the people of Chicago.

Now, what of the future? I notice that the NRC Staff in its letter of March 29 -- or, rather, it's March 29 Safety Evaluation, states that the Licensee has committed itself to a 40-year surveillance program, in Section 2.42.

Forty years? Ladies and gentlemen. That statement says that somebody is going to be surveilling the spent fuel up there for forty years. They plan to decommission the plant in just a couple of years, and that's the only place they plan to get spent fuel. What are they planning to do up there for 40 years? I'd like to have a firm answer to that. I'd like to know what's going to happen to the stuff they have up there. Do they intend to take it away, or do they intend to leave it there for 40 or 50 years?

I must also mention that on our way over here the taxi driver said that there was a problem at Zion plant 2 that had been compounded, an operator error and a computer mistake, that shut down the Zion plant 2.

Should we be evacuating right now?

Thank you, sir.

RB fls

1F wb1

LIMITED APPEARANCE STATEMENT OF JOSEPH H.GILBY,JR.

325 EAST CENTER, LAKE BLUFF, ILLINOIS

MR. GILBY: I come here with a two-fold purpose.

I'm an elected official of the Village of Lake Bluff, a trustee. My first purpose is to hand you the resolution passed by the Village Board, to have it included in the record, which opposes increased storage at Zion.

My second purpose is to make a statement on behalf of myself as a private individual.

Members of the Board, you will hear a great deal of testimony -- and I don't pretend to be a nuclear physicist: I'll try to keep this as simple so that a nuclear physicist can understand it.

(Laughter)

You will hear a great deal of testimony, but you will hear no testimony that additional storage will make the Zion facility safer. And that's what these hearings really should be all about.

(Applause)

You will hear no testimony that increased storage at Zion will make the facility as safe as it is today.

The mere fact that they had to go to a Boral pad around the elements stored in the pool is a clear indication of increased risks.

The mere fact that the NRC has granted experimental

wb2

use of rods in the reactor for a longer period of time is an indication of greater risk. Those spent rods when they come out will go into this pool. And that's an experiment, and you don't know what's going to happen.

The mere fact that this pool was originally designed for 128 units to be stored in it, and you are now asking for 2112 is an indication of increased risk.

You will hear a great amount of testimony about how increased storage is making is less safe, or unsafe. Please, please listen to that testimony. The risks are there. They are not going to go away. And, if you allow this, you are going to increase them.

And the proof of the pudding is right here before us today. And I would like to read a very short article that appeared in Friday's Waukegan News Sun, June 9th, 1971, on page 1.

"The Unit 1 reactor at Commonwealth Edison's Zion Station underwent an emergency shut-down Friday and is now undergoing tests ordered by the Nuclear Regulatory Commission (NRC).

"The problem began with a main feedwater pump breaking down, causing a resultant low steam level. That caused 'several water hammers,' say plant personnel, which jarred instruments into wrongly thinking that a steam line had broken.

wb3

"There were no unplanned releases outside the plant" --what about inside? "--and no radioactive emissions, they emphasize.

"Then NRC officials ordered a full cold shutdown, for radiograph tests of the nozzles of the feedwater pumps.

"'It is part of an industrywide inspection of one manufacturer's nozzles,' said plant spokesmen. 'We have not had problems with the nozzles.'"

"The Edison spokesmen were disgruntled with the NRC's timing, saying, 'It comes right in the middle of the peak electrical usage season. We'll be hurting for megawatts and probably have to buy from other utilities.'

"The Unit One reactor is expected to be shut down until Thursday."

Ladies and gentlemen, don't give us any more risks. We're all consumers. But you people are making us risk-takers when we really don't deserve it.

Thankyou.

(Applause)

CHAIRMAN WOLF: Thank you.

Mr. Marrano.

LIMITED APPEARANCE STATEMENT OF RICH MARRANO, 1841 South River Road, DesPlaines, Illinois

wb4

MR. MARRANO: My name is Rich Marrano. My address is 1841 South River Road, DesPlaines, Illinois.

I'm here today representing the Izaak Walton League of America. The Izaak Walton League of America is a nationwide conservation organization with over 100,000 members nationwide. The primary purpose of the Izaak Walton League of America is to help preserve America's soil, woods, waters and wildlife. This may seem slightly remote from some of the other groups that are here today, but I'm sure if you give it some thought this is a very closely related to our opposition to expanding the amount of spent fuel stored on site at Zion.

I'd like to make it clear that the question we're addressing today is simply the question of whether or not we should allow more spent fuel to be stored on site at Zion. It's not a question, and NRC is not being asked to pass judgment on the nuclear industry in total, rather, just whether or not they should limit the amount of spent fuel stored at Zion.

We are opposed to the expansion of the amount of fuel stored at Zion for eight reasons. --and I will remain brief.

No. 1, the containment vessels were not designed to hold as much material as you wish to put in them. You are requesting that up to sixteen times the amount of material which the containment vessel was designed to hold be

wb5

put in the vessel.

No. 2, the vessel which is there now already has problems and is leaking water. That problem is unsolved, and to increase the amount of spent fuel within the vessel would only aggravate the problem.

No. 3, having a storage facility like this with that amount of material so closely related to densely populated area such as the Chicago metropolitan area, Milwaukee and the areas very close to here, make it such that if there were an accident, even a minor accident, not a major accident where all the material leaked, even then there would be people dying of cancers in twenty years.

Another problem, or another reason we're opposing it, No. 4, is ths fact that the Zion site is so close to Lake Michigan, which is an inland lake which is contiguous with the other Great Lakes, and every large release into Lake Michigan can contaminate drinking water not only for the areas right around Chicago but may contaminate drinking water for all the people that receive water from the Great Lakes.

No. 5, Commonwealth Edison has had many problems in its Zion plants, and Commonwealth Edison has exhibited that their first priority is not the safety of the citizens in the area, and is not the -- and their concern is not with making the plant operate as safely as it can operate; they have not given us a clear picture of everything that has happened at

wb6

Zion.

No. 6: by allowing the increased amount fof spent fuel to be stored at Zion it is prolonging the amount of time which the nuclear power plant will operate without solving the problem of what to do with spent fuel.

No. 7: If at a later time, possibly in the late eighties or the nineties, when the spent fuel has been deposited at Zion, and if through technology some way is found to make the spent fuel less hazardous, then that may require that those highly radioactive fuels are transported out of Zion, transported through densely populated areas, which may further create problems.

The last reason, No. 8, is: Nuclear technology has had a contract with the citizens of America for the last thirty-five to forty years. It has been a good faith contract that they will look out for our best interests and be concerned about the quality of life in America through generating electricity, and also to safeguard public health. They have not held up to that contract. They have not acted in good faith. We see no reason to further allow them to push as far as they can to get what they can while the getting is good.

For these reasons the Izaak Walton League of America opposes the expansion of the amount of spent fuel stored at the Zion plant and hopes that the NRC will take this

wb7 into consideration when the time comes.

Thank you.

CHAIRMAN WOLF: Thank you.

(Applause)

lF

2271 233

A agbl

CHAIRMAN WOLF: We're going to take a 10-minute break.

I would like to ask counsel to stay here for a few minutes, I want to confer with the members of the Board and then I would like to talk with counsel.

(Brief recess.)

CHAIRMAN WOLF: We'll go back on the record.

.120 Ms. Flora Friedland.

LIMITED APPEARANCE STATEMENT OF FLORA FRIEDLAND, 434 Shumack Road, Highland Park, Illinois.

MS. FRIEDLAND: My name is Flora Friedland, 434 Shumack Road, Highland Park. I've lived in Highland Park in the same residence for the past 22 years, thinking I would spend my retirement there.

But now I will not retire there. I will not live inthe shadow of the Zion Nuclear Plant with its many violations and, hopefully, I will leave before a major accident occurs.

The thing we were told could not happen did happen, and it cannot be dismissed.

On May 22, Congressman James Weaver, Chairman of the House Investigation into the Three Mile Island nuclear accident said, and I quote:

"I must conclude that an accident such as occurred at Three Mile Island not only

agb2

could happen again but is likely to at any time."

After a severe reactor accident like the one at Three Mile Island, we should be trying to minimize the risks at the Zion reactor site rather than increase the risks by adding more high-level radioactive waste to the spent fuel pool -- I keep wanting to say fool pool. I don't know why, but maybe I do know why.

The Atomic Safety and Licensing Board brought up the following questions for discussion at Salem, New Jersey on May 2, 1979 in the matter of Public Service Electric Nuclear Generating Station's request for spent fuel expansion. We must now ask Commonwealth Edison these same questions.

One, to what extent did the Three Mile Island accident affect the spent fuel pool?

Two, if there had been an explosion or meltdown at Three Mile Island, what effect would that have had on the spent fuel pool and to what extent would it have mattered how much spent fuel was present in the pool?

Three, if an accident such as the one at Three Mile Island occurred at Zion, to what extent would the accident affect the spent fuel pool? And if an explosion or meltdown occurred at Zion, to what extent would that affect the spent fuel pool, and to what extent would it have mattered how much spent fuel was present at the pool in Zion?

I believe a reactor accident like the Three Mile

ago3

Island one could endanger the Zion pool. Workers would not be able to maintain the pool if a reactor accident seriously contaminated the surrounding area. Extremely high radiation could persist for months, preventing emergency crews from returning to the pool building to maintain the pool cooling system, and a rapid boiloff might ensue.

Also, something came to my attention, an article that was in the Chicago Tribune on February 9, 1978, Section 7, page one, which detailed a series of earthquakes that have occurred in Illinois.

Three quakes were felt in the Chicago area since 1967, which causes me to wonder why Commonwealth Edison was permitted to build a nuclear plant in this area, and how would another quake affect the more highly compacted pool?

These questions must be resolved before any consideration is given Commonwealth Edison's request for waste expansion.

I am enclosing a copy of the article, because I feel that possibly you people are not from Illinois, any of you, I don't know. And maybe you didn't know that we have had 337 quakes centered in Illinois over the last -- from frontier days on and three quite -- ones that rated quite high on the scale in the last three years.

I think you should keep in mind that Commonwealth Edison and the Nuclear Regulatory Commission are supposed to

agb4

serve the people, not the other way around. We are footing the bills, and we do not wish to pay for the tools of our own destruction.

It's very frustrating for me to know that the people have such a limited time to speak, and at the start of the hearing, whereas Commonwealth Edison has all week to bombard the Commission with propaganda. I hope at the end of the hearings, you will not have forgotten the people.

(Applause.)

CHAIRMAN WOLF: Thank you.

I have an announcement to make regarding the continuation of limited appearances.

We're going to take three more witnesses before we adjourn for dinner, and then we will reassemble at 7:30 for further testimony. And we will continue limited appearance statements in the morning. And we will hear all persons who desire to make limited statements, we hope, tomorrow.

So before you leave, if you want to be placed on the list to be heard tomorrow, I'd like you to sign the sheet that will be up here on the desk. If you want to be heard tonight, you can put your name on another list which will be down at that end of the table.

So now we'll continue with Mr. Filipowicz.

agb5

VOICE: I believe Mr. Filipowicz will be downstairs in just a few minutes.

CHAIRMAN WOLF: All right. We'll continue --

VOICE: We have a list of people who attend the meetings, and we would like to have a night meeting so they don't have to lose man-hours of work to attend.

CHAIRMAN WOLF: I didn't get what you're saying.

VOICE: We have a group of people, a list of about 12 to 15 people who would like us to tell them if there is an evening open when they can make statements to the Board after this evening.

CHAIRMAN WOLF: After this evening?

VOICE: Right. They weren't aware of this evening's meetings in time.

CHAIRMAN WOLF: They can come in in the morning and make the statement at that time.

VOICE: They would have to leave their jobs to come in the morning.

CHAIRMAN WOLF: Well, if they can't make it during the daytime, we will sit one night during the week.

VOICE: That's fine. If the Chairman could tell us what that night is, we could pass the information on to those people who have already given us their names and addresses.

CHAIRMAN WOLF: I think we can take it on on

agb5

Wednesday night conveniently.

VOICE: Thank you very much, Mr. Chairman.

CHAIRMAN WOLF: While we're waiting for Mr. Filipowicz, we'll call another witness, Marvin Balousek.

LIMITED APPEARANCE STATEMENT OF MARVIN BALOUSEK, 20056 South Keystone Avenue, Matteson, Illinois.

MR. BALOUSEK: My name is Marvin Balousek, B-a-l-o-u-s-e-k. And I live at 20056 South Keystone Avenue, in Matteson, M-a-t-t-e-s-o-n, Matteson, Illinois. That's near Park Forest in south Cook County.

I'm here as a private citizen and a consumer and customer of Comm. Ed.

Permitting Comm. Ed. to increase its on-site storage capacity at its Zion Nuclear Station would be to continue to play the American version of Russian roulette.

The parameters of the consideration required to reach any decision are much broader than the planning and construction, the bricks and the mortar, with due regard for well-schooled engineers, the intracacies of risk analysis, computer technology and assurances that the public should have no fears. We haveour objections anyway.

It is ironic that the expansion is being given such serious consideration when the Zion Plant should not have been designed, constructed and situated where it is in the first place.

Editorial reports, a publication of Congressional Quarterly has said that our increased need for electricity has been deliberately contrived by banks, manufacturers who need more electrical power for expansion and utilities. There is no doubt that government is a silent partner.

An example of this may be found in a Comm. Ed. report to stockholders a couple of years ago. The report dwelled on the problem of unused capacity in the wintertime. The use of electricity for air conditioning, a manufactured appliance purchased by millions with bank credit was being met, but that its capability went largely unused in the wintertime. Comm. Ed. reassured its stockholders that it was going to encourage the use of electricity for heating purposes to ease the lack of demand.

It so happens that captive customers of Comm. Ed. go in and out of electrically-heated apartments as quickly as you and I could go through a revolving door. The fact that electric heat is not economically sound for customers is this climate is given short shrift by Comm. Ed.

The self-interest of Comm. Ed. is shared by many working people. Journeymen, building tradesmen support Comm. Ed.'s excursion into nuclear, a dirty technology, because they say it means employment for them. They are as blind as forgetful of trademen who wakened only to realize it was they who built Auschwitz and Dachau.

agb8

Many citizens are concerned about the only commercial storage facility for radioactive spent fuel being located over in Morris, Illinois, and that it might turn out to be a permanent feature of our landscape. They are also concerned, along with the local residents of Sheffield, about the millions of cubic feet of low-level radioactive waste buried and now left to Illinois taxpayers as their burden. Neither of these facilities would be with us today if it weren't for Comm. Ed.

Ignorance of the consequences of a commitment to the dirty technology on the part of politicians, past and present, Democrat and Republican alike, is only surpassed by the inability of so-called nuclear experts to understand the extent of the problems they create.

There will be more flat-truckbeds collapsing on Illinois highways under the weight of a 50-ton cask holding a shipment from Comm. Ed. There will be more contamination of Illinois roads by shipments of radioactive sludge from Comm. Ed. in leaking containers. Perhaps it will be the first to introduce its population to a meltdown of bundles of spent fuel from a derailed train. It would be much more spectacular than the explosion of propane in Crescent City a few years ago.

Three Mile Island was not a sudden event but a coming attraction. As long ago as 1974, a Sea Grant College

agb9

Technical Report done by the University of Wisconsin Environmental Institute tested the knowledge of the experts in the dirty technology and found them sadly wanting.

It was based upon a knowledge-and-attitude questionnaire widely circulated in 1972 and 1973. The questionnaire was designed to test the understanding of nuclear power plant siting issues, such as the environmental impact of nuclear and fossil fuel plants, energy alternatives, energy demand, and power plant regulatory requirements.

The highest scores were obtained by environmentalists and power plant field managers. The groups tied, both received a flunking score of 67 percent. Wisconsin state regulatory officials averaged 62 percent, while the U.S. Atomic Energy Commission, a forerunner of the NRC, would not allow its employees to participate. Their knowledge went publicly untested until Three Mile Island.

Common sense tells us that Illinois experts are not blessed with any more expertise than elsewhere. With a greater commitment than any other state, the unthinkable accident will most likely happen in Illinois rather than elsewhere.

An expansion of the spent fuel storage capacity as proposed for the Zion Nuclear Power Station, accompanied by a firm commitment to withdraw from the dirty technology is acceptable, if there is no alternative.

agb10

Under the circumstances, I am against any expansion of fuel storage capacity at any Illinois facility, and I urge the NRC to deny the petitioners' request.

(Applause.)

CHAIRMAN WOLF: Thank you.

Ms. Kahn.

LIMITED APPEARANCE STATEMENT OF JOYCE KAHN,

301 Central Avenue, Highland Park, Illinois.

MS. KAHN: My name is Joyce Kahn. I live at 301 Central Avenue, Highland Park, and I'm a member of Citizens Opposed to Radioactive Pollution.

I would like to speak to the question of expanding the storage capacity of spent fuel at Zion increases the possibility of nuclear accidents.

Commonwealth Edison intends to increase this capacity by compaction, replacing existing storage racks with new ones designed for much closer spacing of the fuel assemblies.

However, spent fuel compaction greatly increases the possibility of disastrous accidents. Spent fuel is intensely radioactive and, hence, gives off substantial heat. To avoid overheating and releasing the radioactivity into the atmosphere, it must be constantly cooled. This is done by placing the fuel underwater and circulating the water.

If there should be a loss of water accident, the

agbll

use of compact racks with their greater fuel load greatly increases the potential for spent fuel overheating and making air cooling of the fuel extremely difficult.

In addition, compact racks increase the risk of criticality, the high power heat generation process that occurs in reactors which can overload the cooling system.

The NRC's Rasmussen Reactor Safety Study, WASH-1400, states that spent fuel can overheat and even melt if water is lost from the storage basin. Loss of water can be caused by various reasons such as dropping the spent fuel cask, causing damage to the basin and rapid drainage. A loss of water can result from a breakdown in the cooling system, causing boiling off of the basin water.

We know these accidents can happen because there have been serious incidents in spent fuel basins. There have been rack swelling, pump failure, spent fuel drops, basin leaks, overflowing basin water.

Dr. Richard E. Webb, nuclear engineer and author of "The ZAccident Hazards of Nuclear Plants," contends that:

> "The most likely cause of serious on-site spent fuel storage accidents will be an accident which ruptures the reactor containment building. This would force evacuation due to the heavy area contamination and thus leaves

agb12

the basin cooling system unattended and subject to loss of water."

Sandia Laboratories in New Mexico revealed a new hazard which results from compaction and concerned zirconium fuel cladding. Zirconium can catch on fire. A fire could become self-sustaining and lead to the melting of the fuel cladding. There is no doubt that expanding the storage capacity of spent fuel increases the possibility of nuclear accident, which could have dire results to the present generation and for succeeding generations.

Thank you.

CHAIRMAN WOLF: Thank you.

(Applause.)

CHAIRMAN WOLF: Is Mr. Filipowicz in the room now?

LIMITED APPEARANCE STATEMENT OF BOB FILIPOWICZ, 315 Greenbriar Lane, Burning Hills, Illinois.

MR. FILIPOWICZ: My name is Bob Filipowicz. I live at 315 Greenbriar Lane in Burning Hills, Illinois.

I am a spokesperson affiliated with Chiwaukee Radioactivists' Alliance. It's a Lake County-based organization. I have worked as a research assistant in industrial chemical coolings and as an insurance loss adjuster.

I am here to speak and ask who is legally liable

agb13

for the ultimate removal and disposition of spent fuel at the Zion pool. I'm also here tonight to present to the Commission petitions collected by our Lake County-based organization of 1,672 signatures which we have collected over the last four months. These 1,672 signatures located on these papers you will receive are from citizens in this area who are concerned about the request for the spent fuel increase.

Please be concerned that this form of public input is a Constitutional right as well as a public responsibility. When nature is being threatened, we, the people, have an obligation to right whatever wrong is being perpetrated on our environment.

(Applause.)

This is what is being affirmed to by the citizens of Lake County in our petitions.

Commonwealth Edison has asked the U.S. Nuclear Regulatory Commission for permission to more than double the capacity of the high-level radioactive waste storage pool at its Zion Nuclear Power Plant. This pool contains the spent used fuel rods from the Zion Plant.

We believe that the enormous amounts of deadly radioactive poisons in the reactor cores make the Zion Plant dangerous enough without cramming even more of these deadly wastes into the Zion spent fuel pool.

And no one knows of any way to keep these

gb14

radioactive wastes from escaping into the environment for the thousands of years they stay deadly. Because of this, the Zion Plant could become a permanent waste dump, nuclear waste dump.

We, the undersigned, support the Attorney General of Illinois, William Scott, in his move to deny Comm. Edison's request to increase the nuclear waste storage capacity at Zion.

I would like at this time to present the 1,672 signatures to the Board.

(Applause.)

CHAIRMAN WOLF: We'll stand adjourned until 7:30.

MR. FILIPOWICZ: I'm not finished speaking, sir.

CHAIRMAN WOLF: I beg your pardon?

MR. FILIPOWICZ: I'm not through speaking yet.

CHAIRMAN WOLF: I'm sorry. I thought you had finished.

MR. FILIPOWICZ: No.

CHAIRMAN WOLF: Okay. Go ahead.

end2A1

ebl

MR. FILIPOWICZ: I would like to speak to the question of financial liability on accidents on perpetually keeping guard of the spent fuel waste at the Zion Plant.

Who is legally liable for the ultimate removal and disposition of the spent fuel in the Zion pool and the subsequent decommissioning of the pool itself, or is the liability to stated?

Commonwealth Edison's license to operate the

390 reactors and spent fuel pool at Zion expires in 2013. What assurance do the citizens of the State of Illinois have that the spent fuel will ever leave the reactor site?

In its generic statement on spent fuel, NUREG-0404, the NRC discusses what will happen if there is no reprocessing and if no repository has materialized:

> "After its spent fuel storage pool is filled, each reactor will have to be placed in a safe shutdown condition, but the operation of the cooling system must be continued to remove decay heat from the reactor core and in the storage pool, all such structures will remain and the exclusion area will have to be maintained. Water use will continue because of the need to disperse the heat produced by the spent fuel."

This has ominous overtones for the citizens of the suburbs surrounding the Zion Station who never envisioned

eb2

a permanent high-level radioactive waste repository in their midst.

ComEd has not indicated that it is financially capable or even willing to meet the cost of eventual disposal of the spent fuel which it intends to store in the expanded spent fuel pool. They have put up no funds or bonds to secure the cost of eventual decommissioning of the pool and disposal of the rods.

The State and its taxpaying citizens can end up carrying the bag, paying for the handling, transportation, storage, disposal, and/or surveillance of the spent fuel.

The Zion spent fuel pool was not designed for perpetual storage of spent fuel, nor has the Zion site been examined and judged suitable for long-term and possibly permanent storage of high-level radioactive waste.

Will ComEd be willing to continue to maintain its expensive on-site pools for spent fuel which can no longer be considered a potential resource but has been firmly designated bonafide high-level radioactive garbage? Will ComEd pay the millions of dollars per year necessary to maintain the pools onsite for posterity when it finally acknowledges that spent fuel is a liability instead of an asset? Do we have this assurance in writing?

If a permanent federal repository should be sanctioned in some other distant state, who will pay the

eb3

millions to pack up the garbage and ship it by truck or rail across the country? Will ComEd pay? Do we have this assurance in writing?

Certainly the federal government and the NRC have washed their hands of any liability of disposing of wastes.

Because of the hazards associated with long-term fuel storage, there is more than a remote chance that once spent fuel is stored for a certain numbers of years, they may not be capable of being moved without significant environmental harm.

Radioactivity levels are maintained at about 50 x 10^4 microcuries per milliliter. Maintenance of this purity requires continuous treatment, filtration and ion exchange of the fuel pool water. Can we really anticipate that this kind of care, expertise and financing will be available for thousands of years? How long will rods be stored at Zion?

CHAIRMAN WOLF: Mr. Filipowicz, you have already exceeded your time. Can you summarize?

VOICE: 1600 signatures.

MR. FILIPOWICZ: In belated recognition of all these facts we should rapidly cease its production by phasing out all commercial nuclear reactors as soon as possible and not constructing any new reactors. We owe it to ourselves and to posterity.

That's the closest I can come to summarizing.

eb4

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

We are calling one more witness, Mrs. Witz.

LIMITED APPEARANCE STATEMENT OF FAY WITZ

MRS. WITZ: My name is Fay Witz. I live at 1893 Crescent Court, Highland Park, Illinois. I'm speaking today as an individual. I do not represent my community, nor do I speak for any group, although there are ten residents that have voted approval of the following testimony. It was developed over the last four months in response to CORPS' request that the City Council sign a petition against compaction of spent fuel at Zion Station.

At that time I was Chairman of the Environmental Control Commission and I was charged with researching the issue and making a recommendation to the Council. Before the job was finished, the CORP resolution was passed by the Council. Then when our resolution was brought, it was defeated by a four to two vote.

In spite of the City Council rejection of our recommendation, I feel this material is worthy of your consideration. Its purpose is to make the Zion Plant a safer one and a better neighbor.

I would like to have the Board understand the following points before I begin:

eb5

The study was limited to the parameters of this hearing;

It was taken without a prior point of view;

The conclusions are not based on political or emotional responses;

For these reasons I hope you will give it your close attention, even though it comes from a layman.

Many of us are no longer comfortable in listening to the "experts" on either side discuss the issues that affect our lives and futures. We are willing to make the effort to become informed citizens. The following is the result of one such effort.

I do believe that compaction as proposed would increase the hazards from the plant. Therefore, I ask that you withhold granting approval of Commonwealth Edison's petition for a period of 12 to 18 months until the following concerns and recommendations can be addressed.

One concern: Increasing the quantity of spent fuel rods stored could increase the impact of an accident and endanger communities beyond the immediate zone of interest.

My recommendation: The Zion Generating Station emergency plan should be disseminated to those communities outside of the five-mile radius of the plant but still within the zone of interest. And effort should be made by

eb6

Commonwealth Edison, not the State or a new federal program but by Commonwealth Edison to inform the local officials of the plan, particularly those parts pertaining to offsite alerts, offsite emergencies, general emergencies, and evacuation for clarifying the plan area-wide.

The second concern: The past operating safety record of the Zion Plant was poor.

Recommendation: A 12- to 18-month dealy will provide time for Zion Station's safety record to continue to improve.

The third concern: The effects of the newly licensed experimental testing of a higher burnup rate for fuel assemblies are unknown.

Recommendation: A 12- to 18-month delay in the introduction of the Boral material in the new racks will provide a more definitive evaluation of the effect on pool water chemistry of these fuel assemblies.

The fourth concern: Similar General Electric high density storage systems experienced swelling at other sites such as Connecticut Yankee's Haddam Neck Station, RVA's Browns Ferry Station, and Northern States Power Company's Monticello Nuclear Plant.

The Office of Nuclear Regulation has approved venting as a solution while denying charges that this is an unreviewed safety question. The consequences of long-term

eb7

exposure to pool water have not been determined, nor has the Nuclear Regulatory Commission Staff completed its review of the GE report on the high-density fuel storage systems. In fact, onsite testing is being performed at these stations.

Recommendation: Consider using different racks. There are approved racks that you yourselves have approved without aluminum cladding such as those substituted when the Kewaunee Nuclear Power Plant requested a license amendment to store additional spent fuel on December 4, 1978.

The Atomic Safety and Licensing Board of the United States Nuclear Regulatory Commission, Docket Number 50-503, approved these racks for Kewaunee. I request the same consideration for the Zion Station.

I might add that one of the points I learned today, since my time is not up, is that during this 12- to 18-month period, hopefully the generic impact statement on the handling of the storage of spent light water reactor fuel of March '78 will no longer be a draft but will indeed be a piece of material containing information we can use to make these plants safer as they find the need to compact their fuel on-site.

Thank you very much.

(Applause.)

CHAIRMAN WOLF: Thank you.

We will stand adjourned now until 7:30.

(Whereupon, at 6:15 p.m., the hearing in the above-entitled matter was recessed to reconvene at 7:30 p.m. the same day.)

EVENING SESSION

(7:50 p.m.)

CHAIRMAN WOLF: Are we ready now to go forward? The first witness will be Mr. Robert Eckmhouse.

VOICE: I don't think he's here yet.

CHAIRMAN WOLF: Mr. Lawrence Knobel?

VOICE: He'll be here later.

CHAIRMAN WOLF: Lenore Hitchler?

LIMITED APPEARANCE STATEMENT OF LENORE HITCHLER, 1457 THOME, CHICAGO, ILLINOIS.

MS. HITCHLER: My name is Lenore Hitchler, H-i-t-c-h-l-e-r. I live on 1457 Thome, in Chicago.

My family, school teachers, ministers, Girl Scout and 4-H leaders tried to influence me to behave with respect and to act in a responsible way.

Respect and responsible behavior are good guidelines for individuals, and they also would be good guidelines for Commonwealth Edison to follow.

I think that by asking for increased spent fuel storage, Commonwealth Edison shows that it does not respect our water and our animal and plant life and the surrounding population in the geographical area.

I also think that Commonwealth Edison's proposal shows that it is not interested in behaving in a responsible way to workers at the Zion Nuclear Station, our environment

and our future generations.

Thus, I am opposed to the Nuclear Regulatory Commission granting Commonwealth Edison permission to increase their spent fuel storage at Zion, Illinois.

The Zion pool was designed and built to hold 170 tons of spent fuel, increasing the amount of spent fuel allowed to be stored in the pool from 170 metric tons of waste storage,to 1,056 metric tons, which indicates to me that Commonwealth Edison does not respect the potential dangers of the technology it is using.

The Pool was not built to withstand the added weight, and this could rupture the lining. No environmental impact statement has been done on the effects of increasing this spent fuel storage at Zion. I find it hard to believe that Commonwealth Edison can have the audacity, irresponsibility and arrogance to ask for such a potentially hazardous situation without this environmental impact statement.

To interrupt myself, I have noticed that several men at the Commonwealth Edison table have been smirking all afternoon. I wonder if they are smirking because they are ashamed of themselves for working with Commonwealth Edison?

I know that the Nuclear Regulatory Commission Board members are knowledgeable people, and already know the following points with especially bother me. Thus, I will not go into any great detail, other than just listing them.

I do believe, however, that if Commonwealth Edison respected our environment and wanted to behave in a responsible manner toward its neighboring human, animal and plant life, that it would not subject us to the following potential dangers of expanding its fuel storage:

Number 1: There will be 20 times more strontium-90 in the pool than in the reactor core. The effects of strontium-90 is that it collects in bone tissue and causes leukemia, cancer and genetic damage.

There will be a greater amount of release of iodine and krypton into the environment.

Number 3: Airplane accidents, tornadoes, sabotage and cooling system breakdowns could damage the pool and cause the water to flow out, causing a meltdown.

According to the Government's Sandia 77-1371 report, a meltdown could occur in a loss of water accident.

Number 4: An accident in one of the reactors can endanger the pool because the water level might not be maintained.

Number 5: A heavy spent fuel shipping cask could fall from its crane into the storage pool, breaking the floor of the pool, causing rapid drainage which also could lead to a meltdown.

Number 6: The Institute for Reactor Safety of the Technical Control Association in West Germany has

published their findings on what the worst possible accident in a spent fuel pool would encompass, and they found that this could involve 95 times the lethal dose of radiation 62.5 miles from the spent fuel location.

Number 7: An accident in the pool could endanger the reactors.

Number 8: General Electric high-density racks have been proven defective elsewhere. In 1990 ten tons of plutonium would be stored at Zion, and one pound has the potential for causing 9 billion lung cancers.

Number 9: Currently, there are 6 times more radioactivity in the Zion spent fuel pool than in one reactor. If it is filled to its requested capacity, it will have 20 times more radioactivity than found in one reactor.

Workers will be subjected to higher radiation dosages.

Now, I would like to go into how the preceding potential dangers affect me:

1. I live in Chicago.

2. My family lives in Libertyville.

3. I do not want myself, my family, or future descendents to be harmed or die from an accident at the Zion storage facility.

4. I also do not want myself, family or future descendents to be harmed from low-level radiation, potentially

wel 5

causing cancer, leukemia and birth defects.

If low radiation is not harmful, why were foot X-rays in shoe stores abolished? I also do not like to compare dental X-rays with low-level radiation, because to get an X-ray is my personal decision. I should have some power of decision on whether or not I get low-level radiation from nuclear waste storage, and I vote no.

Thank you for the opportunity of expressing my opinions.

(Applause.)

2271 260

LIMITED APPEARANCE STATEMENT OF LEO SERAN,

ELMHURST, ILLINOIS.

MR. SERAN: My name is Leo Seran. I live at 134 Fellows Court, Elmhurst, Illinois.

My criteria for being here, I was one of the original Ph.D scientists that worked at the beginning of the nuclear age at the University of Chicago in 1942. I helped build the first pile, and I worked on nuclear energy for many years thereafter in various government laboratories, until 1961, at which time I decided it was a terrible problem for civilization, a problem of radioactive waste, an insolvable problem. So I turned against nuclear energy. I think it's a bad thing for civilization.

You have heard many different comments today. I'd like to summarize the salient facts of nuclear energy in just a couple of santences.

First, you know that to get nuclear power there must be produced a tremendous amount of radioactive waste. The radioactive waste gives off nuclear radiation which destroys all matter. It is especially bad for biological matter, and especially bad for the genetic tissue.

It also destroys containments, whatever they try to store radioactive things in. These metallic lattices or chemical bonds are all gradually destroyed. The radioactivity cannot be altered or stopped by any process known to man. The

radioactivity goes on its own natural half life, some of which, as you know, last for thousands of years.

On the other hand, man's societies, man's governments, do not last for thousands of years. Therefore, it is almost an inescapable conclusion that it is a crime against civilization.

When I worked on the Manhattan project it was a crash project. It had the greatest priority and manpower and efforts, financial resources. And in a matter of two years, the famous first self-sustaining pile was established.

If such an effort were put to solar energy, it could furnish more energy than nuclear energy does today. There are very subtle reasons why this government is not pushing solar energy. This is not the place to discuss them, but since solar energy could furnish us with all the energy that nuclear energy does, and since nuclear energy is bound to put the radioactive wastes into the environment, either by man's fallibility or by accidents, I would leave you with this thought:

That if the nuclear power program is a crime against civilization, when you think of all the future generations that will die of cancer or have radioactive sicknesses, and members of the Nuclear Regulatory Commission--if you will pardon my saying it -- you too are a party to this crime against society or civilization. And now you have

a chance to act when it comes to this decision about the storage of nuclear fuel rods, so I hope you will oppose this decision to increase the storage capacity.

(Applause.)

C wb1

LIMITED APPEARANCE STATEMENT OF GRACE FISHMAN

1460 CLOVERDALE AVENUE, HIGHLAND PARK, ILLINOIS

MS. FISHMAN: My name is Grace Fishman. I live at 1460 Cloverdale Avenue, Highland Park.

I'm not going to say much: I already gave in my statement before, because I didn't think I was going to speak. And I don't want to speak about the spent fuel rods or anything, because so many people have said it before me, so many people who are much better qualified to say anything than I am. I just will make a few brief comments.

No. 1, we recently moved to Highland Park from New York City. In my provincial New Yorkism I never even had heard of Zion. I assure you, if I had heard of Zion I would never ever have moved here.

It's frightening to me now that we're here.

And I wonder what's going to happen to our property values. Are they going to go down?

If I had my way I'd move out as quickly as possible.

I think as far as the lawyers smirking, I, too, noticed their smirks. I feel that somehow, as so many of the young now, they feel the government has no credibility. No matter what they do they're not going to come out ahead. I feel that they have lost their faith in the workings of this country. And I think that this is a very basic issue.

wb2

What is going to happen? More and more people are going to become excited here. Will there be violence? What is going to happen?

We export technology to places like the Philippines so that they can build nuclear reactors on volcanic territory. France, in The New York Times, is going along with her reactor program. What are we going to do? Who can we fight? What's going to happen now?

(Applause)

CHAIRMAN WOLF: Thank you.

Dorothea Ragland.

LIMITED APPEARANCE STATEMENT OF DOROTHEA RAGLAND, 416 WASHINGTON, GLENCOE, ILLINOIS

MS. RAGLAND: My name is Dorothea Ragland. I live at 416 Washington, in Glencoe, Illinois. I've lived there for over thirty years. I'm speaking as a member of CORP, Citizens Opposed to Radioactive Pollution.

I am a mother and a grandmother. I am concerned with the increasing amount of radioactive pollution in our environment, not only for my own health but for the sake of future generations, especially for the children who are more susceptible and who will be having more years to live with this pollution than I will.

I hope you will not grant Commonwealth Edison's request to almost triple the spent fuel storage; for many

wb3

reasons, especially in view of their poor safety record.

The plant has been rated C for many years, until just recently, when I think now it will be a B-minus. But it is less safe than Three Mile Island, which was rated B.

I understand that an NRC official is said to have referred to Zion, the Zion plant, as a real turkey.

The particular concern I wish to discuss tonight is the possibility of a coolant pump failure, which has been mentioned by previous speakers.

If the amount of spent fuel storage is increased the reliability of the cooling pumps becomes increasingly important. If they triple the amount of spent fuel in their pool it would give them roughly one-third of the time that they have now to deploy emergency cooling equipment.

I would like to cite an instance that happened at Turkey Point, Florida, which could very well happen here.

On April 12th, 1975 the cooling water pump in one of the spent fuel pools failed for what was to be the first of three failures in the next five weeks. This is from the NRC print-out on accidents in spent fuel pools from 1969 to the present.

An emergency pump was moved in and hooked up. But it was left temporarily unattended. During that time a hose coupling on the pump came loose. Before the incident was noticed the pump had spewed seven thousand four hundred gallons

wb4

of radioactive water out on the floor of the building.

The Florida Power and Light Company recovered about 60 percent of the water. The rest of the contaminated water, nearly three thousand gallons, ran out a doorway and soaked into the ground outside.

"That is a potentially very serious accident," said Dr. Henry Kendall, a nuclear physicist at MIT and a member of the Union of Concerned Scientists. "Without the pumps for any extended length of time, or without adequate cooling water, the spent fuel would begin to overheat," Kendall explained. "In time the fuel rods would rupture. And at that point if the fuel pool still leaked, anything that came out the cracks would probably glow in the dark."

I suppose he meant it would release massive amounts of radiation.

Compacting the fuel storage. To put 2112 assemblies where it was originally planned to put 368 assemblies, is a new and untried technique. With the combination of equipment failure and human error that seems to be constantly prevalent in this plant and other nuclear plants, it seems like asking for trouble.

I feel that no action should be taken until some better and more permanent method is found for storing spent fuel, and that the request should be denied.

I thank you.

wb5

(Applause)

CHAIRMAN WOLF: Thank you.

Mr. Gary Reams.

LIMITED APPEARANCE STATEMENT OF GARY REAMS, 2936-B East Wisconsin, Great Lakes, Illinois.

MR. REAMS: My name is Gary Reams. I live at 2936-B East Wisconsin, Great Lakes, Illinois.

There are many reasons to oppose the spent fuel storage expansion. One reason I oppose this expansion is, I know of no legal and binding document that will make Commonwealth Edison empty the storage pool eventually.

ComEd wishes to at some time reprocess the fuel rods. These rods are presently sitting in a defective pool that is leaking 50 gallons a day. ComEd at this time is not allowed to reprocess. There is little reason to believe that they will ever be allowed to. So what will happen to the fuel rods at the end of Zion plant's lifetime?

Will ComEd cart away the waste? Will responsibility be shuffled like at Three Mile Island? Will they hand the waste over to the government? --or, in other words, to the taxpayers?

What assurance has ComEd given us that if they aren't allowed to reprocess that they won't turn Lake County into a radioactive waste dump?

On the other hand, if they are allowed to reprocess -

the fuel rods, then they are sitting on a gold mine. But at our risk; a risk great enough that several city councils have asked the expansion to be rejected; a risk great enough to cause an uproar throughout the community; in fact, if there wasn't much risk there wouldn't be a Price-Anderson Act.

If ComEd desires to keep the rods, let them take the risks with the profit. Let ComEd find a place to store them in an unpopulated area, and not in our backyard.

I urge the Commission to reject the expansion proposal and to demand the repair of the pool. We have nothing to gain and everything to lose by this proposal's approval.

Thank you.

(Applause)

CHAIRMAN WOLF: Thank you.

Mr. Aguilar.

LIMITED APPEARANCE STATEMENT OF FRANK AGUILAR

1319 WEST ESTES, CHICAGO, ILLINOIS

MR. AGUILAR: My name is Frank Aguilar. I live at 1319 West Estes, Chicago.

I have conducted my engineering studies in Buenos Aires, Argentina. I have become an electro-mechanical engineer. And until 1965 I have studied some of the nuclear physics.

I was very convinced for many years that nuclear power will be the solution to our power needs in the world.

wb7

After many years of believing this I started seeing the problems on waste and the probabilities of accidents in the nuclear plants.

All the technical factors involved in this are very well documented. In 1945 in Poland they have come up with studies of the danger of the radioactivity to human health. Many other studies have been conducted afterward. So, to talk more about the evidence on the danger posed by nuclear power is almost redundant now.

I think at this point what I wanted to say is: The Nuclear Regulatory Commission is on trial now. We want to see you as being in charge of protecting the health and safety of the people of this country and of the whole world, to take the responsibility you were created for. And so far the evidence points out that you have not been doing that. The leaders of this country have been lying about the dangers of radioactivity.

The Nuclear Regulatory Commission has not been taking steps to protect the people from possible dangers of accidents happening in those plants.

Being an engineer and a designer, I have learned a long time ago that all the systems that men create are liable to fail. And the Nuclear Regulatory Commission, knowing that, has allowed these plants to go on and on on the dangerous situations that we all know came to a head on the Three Mile

wb6

Island accident.

So I am asking you and the Commonwealth Edison Company in this case to be responsible and, once and for all, start taking the responsibility that you supposedly have taken when you started on this enterprise.

That's all.

(Applause)

CHAIRMAN WOLF: Thank you.

Mr. Knobel.

LIMITED APPEARANCE STATEMENT OF LAWRENCE KNOBEL, GLENCOE, ILLINOIS

MR. KNOBEL: My name is Lawrence Knobel. I live in Glencoe, Illinois, which is about twenty miles from here as the crow flies or as the wind blows.

I work in Chicago where I'm President of a mortgage banking firm. Chicago is about forty-five miles from here.

I might say that I had the honor in 1973 of being President of the Chicago Mortgage Bankers Association.

I come here at my own expense, I'm not paid by anyone, to urge you to deny this request of Commonwealth Edison's.

The spent fuel pool as it exists is a danger in its very existence. The danger should not be compounded by concentrating even more radioactive waste in the same space.

wb9

The existing pool is supposed to be a temporary storage facility. It is supposed to be temporary until some sort of reprocessing technology can come into being. And even that reprocessing technology, which raises awesome problems of its own in the creation of plutonium, weapons grade material, even that technology ultimately leaves a residue of radioactive waste which requires permanent storage.

Permanent storage, given the half lives of the elements we're dealing with, is something that will have to be accomplished if this technology is to be continued for tens of thousands of years, a kind of time span that boggles the mind.

Despite the fact that the NRC, the utilities, the scientific brains of this country, have been wrestling with the problem of permanent storage for at least twenty years, there is not now any solution in sight for permanent storage, and there is not now any estimate of how one can possibly store things for tens of thousands of years.

We are dealing not with just another technology that has its benefits and its risks as some people argue; this is just not another evolution in the search of man to better his environment and to provide benefits for people; this is not a case of coal mines which have benefits and risks; it is not a case of oil or gas or hydroelectric power, all of which have benefits and risks; we are dealing with the

wb10

very building blocks of the universe. We are dealing with a technology where we have unleashed a genie from the bottle with absolutely awesome consequences to contemplate.

Personally, I'm a pessimist. I believe that somewhere in the world a nuclear plant one day will have a catastrophic accident. And I suppose those who are committed to nuclear technology will say, after we evacuate an area the size of Pennsylvania: Well, that's not so bad, we still have forty-nine states left. You have to pay some price for the energy that you want.

We are dealing with a technology unlike anything that exists or has ever existed in the history of mankind. It is a technology that cannot afford an error. It cannot afford one major error. An airplane can crash, as Flight 191 did, and the consequences, while terrible, do not destroy air travel, they do not impact on future generations to the furthest end that man can contemplate. We are dealing with an awesome technology which we do not know how to harness. And I urge you not to increase and not to permit the increase of this dangerous, hazardous risk, the end of which no man knoweth.

(Applause)

CHAIRMAN WOLF: Thank you.

Mr. Russell Bezotte.

End 2C

aybl

LIMITED APPEARANCE STATEMENT OF RUSSELL BEZOTTE, 5414 42nd Avenue, Kenosha, Wisconsin

MR. BEZOTTE: My name is Russell Bezotte. I live at 5414 42nd Avenue, Kenosha, Wisconsin.

I was a licensed nuclear reactor operator at Zion Station prior to July of 1978. We have heard all the things that could possibly happen with the spent fuel pool being expanded but, however, some of the things that were taken into consideration were such things as the operators having to work shift work. Over a five week period of time, we had to work four different shifts. We spent approximately 35 to 40 percent of our time readjusting biologically to our change of shift, which made it impossible to be 100 percent efficient in our position.

We also had to work under conditions which we termed as nuisance alarm conditions. We have a component cooling system which is a bumper zone between lake water, service water and our primary system. Continually the system leaked. At least once, sometimes twice a shift we had to refill the system. They never fixed this condition, we lived with it year after year.

We have procedure deficiencies there. It started up -- Unit 1, after refueling, not this fall but the prior year, I started the reactor coolant pump. The operating engineer which is in charge of all the operating at Zion.

gb2

I started up the reactor coolant pump. We got a low oil level alarm. Emergency procedures are trip the pump, isolate the loop.

The operating engineer wouldn't let me do it. He said No, no, trend it out on the computer. So I had to go to the computer for about five minutes to trend everything out, in the meantime, the pump ran as is.

It turned out the varying temperatures were okay, the oil level had expanded and the oil level went up instead of down. It turned out okay.

But the operating engineer left. About 45 minutes later he comes back and he says Were you really going to trip that pump? I said Yes, sir, I was, emergency procedures are trip the pump and isolate the loop. He said Well if the pump would have burned up it would have been my responsibility, without taking into consideration any of the information that he had given me.

They do things over there such as a 46-day refueling outage they had last fall. They gave people T-shirts that said Refuel the unit in 46 days. They didn't take into consideration safety to make sure all the equipment was operating properly. The main thought was to get the refueling done in 46 days regardless of the cost.

A friend of mine during the last refueling just had worked 37 days straight without a day off. It's impossible

agb3

to be 100 percent efficient after working 37 days straight without a day off. They're not working efficiently over there. They're not being safe.

The spent fuel pit was designed to have so many refuelings in that spent fuel pit and if there's an emergency it's supposed to be able to handle that many refuelings. If they want to increase this, the system isn't designed to handle the emergency with an increased amount of fuel in that spent fuel pit.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Mr. Ed Gogol.

LIMITED APPEARANCE STATEMENT OF EDWARD GOGOL, 6105 North Winthrop, Chicago, Illinois.

MR. GOGOL: My name is Edward Gogol, G-o-g-o-l, 6105 North Winthrop, Chicago.

I'm a member of Citizens Against Nuclear Power in Chicago, and I'm a graduate student of the University of Illinois School of Public Health.

One of the things I've been studying is the health effects of radiation. And I believe that rather than call it the health effects of radiation, we should call it the disease causing the effects of radiation.

There's just about no type of cancer that

gb4

radiation doesn't cause. It causes birth defects. It causes genetic diseases. It causes non-specific life shortening. Nobody really knows if that's because you get these diseases younger, or if it just saps your vitality.

By being linked to genetic diseases -- because most diseases have some genetic component -- putting more genetic damage into the population means more people will be dying of cardiovascular disease, more people will be dying of kidney disease, all the diseases which are killing us today.

And these diseases are very insidious because everybody dies of them sooner or later. And when you get one of these diseases and you die, you don't think Well, I got it because I breathed in some radioactive gases from one of these nuclear plants or I ate stuff that was contaminated with the stuff.

Now, in order for nuclear power and that spent fuel in particular to be safe, they've got to keep that stuff out of the environment because there's just such an incredible amount of it there.

Now I'd like to bring up the question of the DC-10 accident for illustrative purposes, to show you that accidents can happen.

Industries' safety records generally doesn't have to do with how dangerous the industry is, but how dangerous

agb5

the public perceives the industry to be.

In aviation, where an accident can have an incredibly horrendous firey consequence, several hundred people killed in a ball of flame, for example, there's a lot of public pressure and a lot of impetus to keep things safe.

But we see, as the facts are coming out after the DC-10 crash, that they weren't doing the maintenance properly. They weren't inspecting it properly, an engine fell off the wing. And that's something where, if an engine falls off the wing and a plane goes down, everybody dies, just like that.

I submit that if engines can fall off DC-10's, we can have catastrophic accidents involving nuclear power plants because the people who are running the power plants are a lot less concerned with safety than the people who are running the airplanes.

(Applause.)

Now if there is a catastrophic accident, say, at Zion, with or without this spent fuel pool, the consequences are going to be catastrophic but with the increased spent fuel pool it's going to be worse.

Let's say a lot of this stuff gets into the environment, the wind is blowing south toward Chicago. Millions of people live here. The radiation levels could be so high that literally hundreds of thousands of people get

agb6

so much radiation that they die within a few days or weeks from acute radiation sickness. Hundreds of thousands more could be doomed to cancer, leukemia, genetic diseases and so on.

Now, in addition, nuclear power and the spent fuel pool is not just a problem for me and for you, the conventional risk-benefit analysis doesn't really apply because the incredible long-lasting character of some of these radioactive wastes just throws all your conventional stuff out the window.

It's not my problem, it's my children's problem and their children's problem and their children's problem and so on and so forth. The bulk of the fission products take about 600 to 700 years to decay away. The transuranics, the heavy elements like uranium and plutonium take much longer, plutonium a half a million years.

Now given that nobody at the moment knows what to do with this radioactive waste, it's really irresponsible to just let it keep on piling up at Zion where they don't even have another interim storage place to take it to, let along a permanent dump.

It's really the height of irresponsibility for Commonwealth Edison's executives to say that nuclear waste disposal is a political problem not a technical problem, as if there were any way to be sure beforehand that any of the disposal methods we're currently thinking of could possibly

agb7

work.

CHAIRMAN WOLF: You have one more minute, Mr. Gogol.

MR. GOGOL: I would like to ask for an extension of several minutes.

CHAIRMAN WOLF: Do you have special material?

MR. GOGOL: Yes.

CHAIRMAN WOLF: You know, we want you to justify it.

VOICE FROM THE AUDIENCE: He's talking for a big group of people.

(Applause.)

MR. GOGOL: It'll take me about eight or nine minutes to say my peace.

CHAIRMAN WOLF: What's the nature of the material?

MR. GOGOL: I wish to talk about the risk-benefit process as it applies to your decision concerning the spent fuel pool, and the different scientists, how they will make their decisions about the spent fuel pool.

I'll just say it and you can stop me if you want.

CHAIRMAN WOLF: You may go a reasonable time, Mr. Gogol.

MR. GOGOL: Okay.

agb8

You see, a lot of people here have been bringing up questions which certainly the lawyers for Comm. Ed. don't think are relevant to the spent fuel pool question. But it really is, because we're talking about there's no way you can divorce the spent fuel pool question from the rest of the nuclear power, because if they can't expand the spent fuel pool they're going to have to shut that nuke down because right now there's just nowhere to build, nowhere to take the rest of the waste and it will take years to build something.

So we have to ask the question, if we're talking about risks and benefits, what's the alternative to nuclear power?

Comm. Ed.'s people will deny it to the end because they've got so many billions of dollars invested in nuclear power, but there's an alternative. First off, it's energy conservation, which doesn't mean freezing in the dark, it means eliminating waste in the way we use electricity.

There is fluidized bed boilers which right now is a technology which is fully developed. It's a way of burning coal which is essentially totally pollution-free. Right now the Department of Energy is telling companies, You go ahead and order a fluidized bed boiler, we'll pay for a big part of the cost because we want to start people using these things.

Nobody in Illinois, not Commonwealth Edison, has

agb9

applied to build one of these things. I think the reason why Comm. Ed. doesn't do it is because if it is so much cleaner than their conventional coal plants, they know that public pressure against -- to shut down all their ordinary coal plants, which are killing people with all their crud given off into the air, would just be immense.

Now you've got a problem here in terms of deciding who to believe, because this whole dispute here will illustrate our principle that you can always find -- for every scientist you can find to say one thing, you can find a scientists to say another thing.

After -- all of us anti-nukers out here are just totally convinced that the spent fuel pool shouldn't be expanded and that nukes should be shut down. It's just clear as everything to us.

We're going to go home, we won't be here on Wednesday probably, not too many of us. And the lawyers for Commonwealth Edison, Mr. Reed, who's the vice-president, the NRC Staff will still be here, you'll still be here, and they'll all think, Well, they've gone home, now we can get on with the business. The NRC Staff person will stand up and say We really don't see any problem with it, go ahead and grant it. It's as if there is just totally different perceptions of reality.

CHAIRMAN WOLF: Mr. Gogol, I understand all that.

agb10

I've been in hearings before.

MR. GOGOL: I would like to point out the reason why some people say it's safe and some people say it's not safe is because some people are looking at the facts and they're concerned with future generations and life and people, and other people are getting lots and lots of money to do what they're doing.

(Applause)

And, you know, their career is on the line.

And you people must be more or less pro-nuclear, too, or you wouldn't have been chosen to be on an Atomic Safety and Licensing Board.

Now what I'm saying is, future generations are going to curse us and hate us like the Devil if we don't stop nuclear power, because nuclear power is going to just totally contaminate the planets.

agb1

Some people are going to take a total meltdown to convince. Comm. Ed. lawyers, Cordell Reed and so on, they won't believe it until it finally happens, and it might have to happen right here.

But I think you people on the Atomic Safety and Licensing Board may be more objective. So what I'm asaying is you have an opportunity to somehow join the movement against nuclear power, try to not acquiesce in this really criminal act of putting all this radioactivity in the environment and deny the expansion request.

(Applause.)

CHAIRMAN WOLF: Dr.

LIMITED APPEARANCE STATEMENT OF VINCENT KAVALOSKI, 1534 Morrison Street, Madison, Wisconsin.

DR. KAVALOSKI: My name is Dr. Vincent Kavaloski. I reside at 1534 Morrison Street, Madison, Wisconsin.

I'm a professor of history and philosophy at Shimer College, which is located in Waukegan, which is five miles south of here.

After having reviewed the technical information on this subject, I have lapsed back into my characteristic professional historical and philosophical orientation on this matter, and I would like to state a conclusion I've arrived at.

As we reflect on human civilizations, we realize that each of them embodies certain values which lie at their

gb2

basis and out of which come the activities and the enterprises of that civilization. Sometimes these are symbolized in certain constructs of the civilizations.

We think, for example, of the Greek temple which represents the moderation, the symmetry and the harmony of the Greek civilization which has given us law and philosophy. We think of the Roman basilica, of its rounded dome and its strength, which represented the Roman might.

We think of the cathedral of the Middle Ages, of its spires struggling upward representing the spiritual aspirations of that civilization.

As I walk in this area through this beautiful park here, I wonder what historians of the future will say of this monument, the nuclear power plant, what values does it represent in this culture? What values have given rise to it?

For surely there will be nuclear power plants -- at least those which have not melted down -- there in the future for historians of the future to look at. These concrete bunkers will be there for a long, long time.

I would like to examine this question.

Now, one of the central flaws of discussions concerning nuclear energy and nuclear waste has been that it tends to have a very narrow technical perspective. However, man does not live by engineering alone.

agb3

The most difficult and important and the most neglected questions of energy strategy are not primarily technical at all, but are ethical and social. And these, in fact, underlie all the rest.

However, the prevailing level of discussion on this, if you look in the popular news magazines, you find almost no mention of this larger humanistic framework. The entire discussion is generally grounded on an uncritically held assumption that the energy problem consists simply in how to endlessly expand energy supplies to meet postulated extrapolative needs of an endless growth economy. It's treated as a purely commercial and technical problem.

However, this is a short-sighted fallacious and ultimately disastrous formulation of the problem. This way of posing the question, how do we meet increasing needs of an endlessly growth oriented economy leads today to increasing nuclear waste in Zion, tomorrow to breeder reactors and perhaps the day after to nuclear holocaust.

This madness must be challenged, and hence the intellectual confusion upon which it rests must be challenged. We must begin to ask the more important ethical and social questions underlying these technical ones. Questions like this:

What kind and how much energy is most worth having? How much and what kind of energy is consistent with

agb4

the kind of life that we would like to live as human beings? What kind of energy and how much is consistent with our values as a democratic people?

I submit that nuclear energy is anti-democratic. The ultimate decisions are made not by local affected people but by federal regulatory agencies and giant corporate powers. I submit that nuclear power is anti-health. I submit that nuclear power is ultimately anti-life, threatening not only human life but all life on this planet for ages to come. I submit that nuclear power and its unholy alliance with nuclear weapons is an enemy of human freedom and a precursor of a police state.

(Applause.)

For these reasons, and since the disaster at Three Mile Island, nuclear power is being put on trial by the American people. Exhaustive investigations are now underway and new information on the safety hazards of power plants are coming to light each day. Probing questions are beginning to be asked by the American people. The debate is widening to include the kind of questions that I have brought to light here.

If this is truly a democratic country, then surely the American people deserve to evaluate and judge this momentus issue. It is an issue which affects all of us, both with regard to the electricity we use and with regard to

agb5

the dangers we undergo. Surely every American deserves a voice in this debate.

In the light of this, it would be the height of folly to prejudge the question of the Zion Plant which has a far worse record than Three Mile Island, by permitting increased spent fuel storage at Zion. Reason would dictate rather, that public hearings such as this be held, not for the question of increasing spent fuel at Zion, but rather on the question as to whether Zion should remain open at all.

(Applause.)

I'd like to conclude on a personal note.

To those here who have spent long hours, unpaid hours, struggling against the dangerous radioactive plants, organizing, writing and having unfriendly gates honor to you. You serve your country and your people.

To those lawyers and PR people of Commonwealth Edison who have sold their souls and their conscience for profit and high salary, no honor to you. No honor to you for lying to the people of this community about the safety of the Zion Plant. No honor to you for endangering the people in this area and all across this community. No honor to you for the coverups and falsehoods. No honor to you for the injustice of your rate schedule which charges the poor and those who conserve a higher rate than those rich who are able to buy more electricity.

agb6

CHAIRMAN WOLF: Your time is exhausted, sir.

DR. KAVALOSKI: And to you gentlemen of the NRC neither honor nor shame, but caution and warning. Remember that this decision and its momentus consequences must rest forever upon your consciences. You, too, will be remembered.

(Applause.)

CHAIRMAN WOLF: Dr. John Wikse.

2271 289

LIMITED APPEARANCE STATEMENT OF JOHN WIKSE,
605-A Gillian Street, Waukegan, Illinois

MR. WIKSE: My name is John Wikse. I live at 605-A Gillian Street, Waukegan. I, too, teach at Shimer College in Waukegan.

I have listened to a good many people with technical information and it seems to me that most of the things that I would care to say in that respect have been said already. I will try to be brief, and talk very briefly about what I understand to be the god of Commonwealth Edison.

Commonwealth Edison is an interesting name. It has this word "Commonwealth" in it. You know, you would assume that therefore there was some care for the common wealth, but it would appear, contrary to that expectation, the Commonwealth of Edison and the common wealth of Illinois are involved in some deep and perhaps irreconcilable tension and that tension I think has a lot to do with the god that Commonwealth Edison worships, which the Greeks called Pluto, the god Pluto.

The element plutonium, that most unnatural element made by the breaking of other natural elements, is named after this god Pluto, also named after the last planet. That Greed mythology carries with it I think an enormous trace of the style and the character of the god Pluto, so briefly I will just tell you the little bit that I know about

eb2

that god.

Pluto was the third brother among the ancient Greek gods of Olympus who drew for his domain the underworld and ruled over the dead. He personified the god of wealth, god of the precious metals hidden in the earth. The Romans knew him by this name, Pluto, and also by the Latin Dis, which is the Latin word for rich.

In both Greed and Roman mythology, Pluto is depicted as blind. Pluto's blindness represents the contradiction between the pursuit of excellence, that is, what the Greeks meant by the word "arete," which we sort of loosely call virtue, and the pursuit of wealth, like the difference between practicing the pursuit of justice as opposed to figuring out how to get into power. The difference between excellence and wealth is dichotomous, mutually exclusive.

Plato expressed it in the fourth century B. C. by saying, "Isn't virtue in tension with wealth?" as though each were lying in the scale in the balance, always inclining in opposite directions.

In his teaching, Plato was concerned with the nature of a pbulic utility. Commonwealth Edison is what we call a public utility.

CHAIRMAN WOLF: Mr. Wikse, I hate to interrupt you and stop you, but unless it is pertinent to the question of whether or not the spent fuel pool at the Zion Plant should

eb3

be expanded or not on the basis of the request that has been made, I took a course in mythology before you were born and I don't think it helps one bit.

Now if you want to speak to the question, fine. Otherwise I'm going to stop you from speaking.

MR. WIKSE: Well, I'm going to speak to what you said if I may. May I speak to what you said?

CHAIRMAN WOLF: No, you may speak to the question.

MR. WIKSE: Well, I am speaking to the question, but I would like to start by saying that I think that if you know where I'm going or the point that I'm making, or if you have in your head a sense of what you think is germane and not germane, then it seems to me perhaps you have prejudged what I'm saying.

CHAIRMAN WOLF: No, I have not prejudged.

MR. WIKSE: Okay. Well, I'll try not to do too much more on the Greeks. Okay?

CHAIRMAN WOLF: You have already used more than five minutes.

MR. WIKSE: Let me then just speak directly to the point that I was trying to lead up to, --

CHAIRMAN WOLF: I wish you would.

MR. WIKSE: -- before I was interrupted.

In the last several months in which I've been seeing the god Pluto at work in a variety of different public

eb4

forums, the argument that Commonwealth Edison makes with respect to the increasing of the storage capacity of the Zion Plant is, as far as I could judge, the following:

That is that nuclear energy offers us fewer certain deaths than any other source, fewer certain deaths;

That is that one can imagine a calculation that we are being offered with respect to a choice between varieties of deaths.

Commonwealth Edison offers that to us. It doesn't offer us a death-free technology; it offers us a choice between certain dealths.

Secondly, that economic investment in nuclear energy is so extensive that we have no alternative but to continue to produce waste that we cannot adequately store;

And thirdly, that the federal government has not lived up to its promise in developing recycling.

Other people have spoken specifically to the content of this. I want to speak very briefly to the kind of argument that I think that is, so that you appreciate it for what it is as an argument.

The idea of fewer certain deaths is the sort of calculation which can be made only by a mind which instrumentalizes human life and offers a choice between different degrees of deaths. To follow out this logic we would suppose in the next years of what I would call the Age of Plutonium,

eb5

whatever this age is that we entered into with the first atomic explosions, and it bears the name of the god Pluto, that we would work out an elaborate system to calculate the proportion of cancer and leukemia deaths directly or indirectly caused by the commercial use of nuclear energy.

Surely it is appropriate that Pluto is the god of the dead and as well of the precious wealth under the earth for which so many have died in years of plunder for precious metals.

The second part of the argument that there is no alternative is an argument from necessity, in this case economic necessity. The form of the problem is familiar: develop a capital-intensive technology which itself generates new technological problems which require new technological solutions which generate new technological problems.

It should be clear I think from what has been said that we cannot any longer follow a blind leader and for these reasons I oppose any increase in the capacity to store spent fuel at Zion.

Thank you for listening.

(Applause.)

CHAIRMAN WOLF: Thank you.

Mr. Peterson.

MR. KOLORSON: My name is G. P. Kolorson.

CHAIRMAN WOLF: I was calling Mr. Peterson.

eb6

MR. KOLORSON: Excuse me.

CHAIRMAN WOLF: I don't have your name here on this list.

Is there a Mr. Peterson?

Will you come forward?

LIMITED APPEARANCE STATEMENT OF BOBBY PETERSON, 427 LINCOLN AVENUE WEST, HIGHLAND PARK, ILLINOIS

MS. PETERSON: My name is Bobby Peterson. I live at 427 Lincoln Avenue West, Highland Park, Illinois.

The Nuclear Regulatory Commission estimates 58 of the country's nuclear power plants in operation have been approved or in the process of being approved expansion of the storage capacity in their spent fuel pools by the use of high density racks.

110

I am here today because of my deep concern of the dangers facing all of us, future generations, and our environment if Commonwealth Edison is granted the increase they desire.

In the time allowed I will speak of one concern of mine. This is the swelling of the Boral stainless steel tubes which form the spent fuel racks.

I want to know what Commonwealth Edison will do to prevent the swelling in racks of the Zion spent fuel pool. Such swelling has already occurred at the Connecticut Yankee Haddam Neck facility, Palisades Nuclear Plant in

eb7

South Haven, and at the Monticello, Minnesota plant.

To accommodate an increase in the spent fuel assemblies from 868 to 2,113, Commonwealth Edison will replace the existing storage racks with General Electric high-density racks.

Northern States Power Company of Minnesota noticed swelling in four GE high-density spent fuel racks installed in the Monticello spent fuel pool. A U.S. NRC memo dated September 11th, 1978, discusses the swelling found at the Monticello Plant.

The racks were installed after the NRC had authorized Northern States Power to increase its storage capacity from 740 to 2,237 spent fuel assemblies using high-density storage racks supplied by GE. The cause of swelling in the tubes at Monticello is due to the corrosion of the aluminum cladding on the Boral neutron absorber plates on the tubes of the GE storage racks.

On August 17th, 1978, Northern States Power inspected the swelling tubes with a TV camera and light. the swelling was confirmed by visual observation and it was noted that bubbles were escaping the tubes. The bubbling was observable for three to five days. The escaping gas was found to be rich in hydrogen.

The sandwich construction was intended to be leak-tight. It appears that the leaks in the tubes in Monticello

eb8

evidenced by the bubbling and swelling was most likely the result of, one, failure to seal the tubes during fabrication at Brooks and Perkins; two, the welding performed on the tubes during fabrication at Memphis; or three, stresses induced on angle welds during transportation and handling of the racks.

The presence of water within the tubes will cause corrosion of the Boral as shown by the hydrogen generation. The NRC Staff's main concern is the potential for galvanic corrosion because of the relatively large areas of stainless to aluminum under crevice conditions.

Despite the above-stated problems, the NRC decided to approve GE's proposal to drill a hole in the top of the tubes in the four racks currently in the Monticello spent fuel pool and also four racks at Browns Ferry Unit 2 to prevent swelling of the racks.

According to the local [redacted] in Minnesota, this solution has not worked and the Minnesota Pollution Control Agency has concluded Boral sandwich part of racks cannot be fabricated to remain leak-tight over the lifetime of the racks. The swelling of the tubes within the racks is an extremely serious problem, as it could affect the removal of fuel assemblies from the racks.

The swelling of tubes can also impede the occasional rearranging of spent fuel rods to balance levels of

eb9

radiation within the storage pool to avoid the possibility of fission.

Again, I ask Commonwealth Edison what will they do to prevent such an occurrence of that?

Members of the Commission, you can prevent or take this problem off of Commonwealth Edison's hands by denying their request.

Thank you.

(Applause.)

CHAIRMAN WOLF: Thank you.

Ann Carton.

MS. CARTON: I do not wish to speak. Thank you.

CHAIRMAN WOLF: Themis Klotz.

LIMITED APPEARANCE STATEMENT OF THEMIS KLOTZ,
1183 CARROLL LANE, GLENCOE, ILLINOIS

MS. KLOTZ: I shall give you my name. I can't avoid Greek mythology because my first name is Themis, the name of the Greek goddess of law and justice.

(Applause.)

For the moment all I'll say about that last name is it's distinguished name in science.

My address is 1183 Carroll Lane, Glencoe, which is a stone's throw from Terrace Court, a street on which Attorney Michael Miller lives.

Imagine my shock upon finding Mr. Miller here,

eb10

making opening statements for Commonwealth Edison when I had no idea whatsoever that he had the slightest interest in these matters. I will return to that.

My other address is a summer address, 14 Jacques Lobe Road, Woods Hole, Massachusetts.

I hope you all know that Woods Hole, Massachusetts has been for many years a most distinguished international center for science.

Much of what I know about the matter under discussion today derives from my many summers at Woods Hole. In the summer of 1960, I read a long plea in The New York Times from Elvin Weinburg, who was the Director of the Oak Ridge National Laboratory. He pleaded for a moratorium -- that is his word -- on science so that humanity could catch up.

I think his prediction of what lay ahead, the accuracy of it is quite obvious.

I would like to just hold up here for you to see the notes I've been making, and there's no way I could possibly even select two points from these notes in the time that is left. But I shouldn't have to, and I'm not going to attempt to, because in the last couple of years I have spent a great deal of time, energy and money feeding in directly to Commonwealth Edison what I've learned in Woods Hole, Massachusetts.

And if they have not made this material available

eb11

to the Commission or the Board, I have to say they have not leveled and they are remiss.

And I hereby request that before the end of this hearing, all memorandums and letters of mine that must be in the file, including a packet in Dr. Rossin's office, be submitted, because I have no other copy of that material, as part of the record, if for no other reason than to give you some notion of the level at which I have some personal knowledge by virtue of private conversations which are not recorded anywhere with very important scientists in these matters, science and government, public policy.

2271 500

ocm/wb1

240

One such person is Charles Hollister. He's an oceanographer who has been asked to work on the deep seabed burial of nuclear wastes. Last summer at Woods Hole for the first time Dr. Hollister brought up the notion of whether anyone would want to hurt mankind. Now that injects a matter that sometimes looms up in terms of sabotage, but it's not quite the full feeling of misanthropy that is unmistakeably now surfacing.

As far as who Dr. Hollister is, I will ask you to find the copy of -- I believe there are two copies of the Winter 1977 issue of Oceanus, published by the Woods Hole Oceanographic Institution. The Commonwealth Edison library has two copies, gifts from me.

Now I have, I feel, been extremely fair with Commonwealth Edison, and I do not feel they have been fair with me, in a number of ways. I won't have time to get back to that because I want to concentrate, for the time being, on the personal situation we have here.

I was really also shocked to find that of all the vice presidents that are here, that Mr. Reed is here. And the reason this bothers me is that I'm only too well aware of the way the blacks have been propagandized into thinking that somehow their future is totally dependent on the future of nuclear power. And, frankly, I object to that. I feel it is injecting a racial aspect here. And that is done knowingly

wb2

and for a purpose that is not pertinent.

CHAIRMAN WOLF: You have one more minute, Ms. Klotz.

MS. KLOTZ: I would like to detach myself from the kind of a viewpoint expressed by Attorney-General Scott. And I recognize his responsibilities to the citizens of Illinois. But there are people in Massachusetts that I have an investment in, because I'm a taxpayer there, I have sent Massachusetts children to school, I have funded the education of Patrick Caddel, who is President Carter's poll-taker. I cannot allow myself to enter this game of: I don't want it, you take it; let's build a fence around Illinois; just keep it out of here, don't put it here because.... Don't put it anywhere.

WRBloom
adon fls

2271 302

Now, people have said I'm worried about my children. I'm worried about you, on the Board. And you, and you.

I have a summer house, and I've given the address. I would not let anybody stay in that summer house this coming summer because I think it's dangerous.

The Plymouth plants, which incidentally use or will use plant number one, phased out, to store wastes, while a new plant is built, and I perceive this same situation possibly here.

Now, I think it is very necessary for people to know what so-called solutions have been used elsewhere.

Now, to go from Woods Hole, if there were an accident at Plymouth 40 miles away, one has to go 20 miles closer to get off the Cape. That's not a very desirable situation.

Now, there are other hazards there, but I want to assure you that I am concerned about your safety. You are just as vulnerable as the rest of us. And maybe you can't speak for yourself. I can speak for you, in that part of you that is the general public, just like the rest of us.

Now, I have a book here. We could talk forever, because I know a lot and you know a lot. But unless you know those things that I know, unless you have read Medvedev's book, unless you have read Henry Chimba, who was Idi Amin's

Health Minister, and unless you have heard him say the people must elect so that the people may be accountable for the people they elect -- now, I hope we don't have to hit bottom like Uganda did to understand that true meaning of political accountability.

I would just like to turn this piece of paper in, and I have to insist that you would be remiss to conclude this hearing unless you understand everything that I mean by my notes here.

Now, I would like to mention particularly for Mr. Miller there two things:

One, my daughter, who is a student at the same high school that his is, preferred not to come here today. She feels uneasy this close to the Zion plant, and I had to respect that. However, she has gone to hear Medvedev. She did not hear Chimba, but her classmates did, because he was the keynote speaker at Law Day.

Now, I hope that you will not let 17 year old high school students in this area know more than you about these matters.

Now, there's another thing that has not come up here today, and that is the notion of a science court. And this is very pertinent, especially with lawyers there. Mr. Miller and I both have a fellow citizen -- well, Professor C. W. M. Thompson, who is a Professor of Industrial Engineering

and Management Science at Northwestern. He's a Harvard lawyer, and a whole bunch of other things.

CHAIRMAN WOLF: You have exceeded your time by about four minutes.

MS. KLOTZ: Well, in the presence of Harvey Brooks--may I ask you, gentlemen and lady, do you know the name Harvey Brooks? He's a rather important person in Washington, technology and public policy. Well, I recommend that you look him up in Who's Who if you don't.

All right. Professor Thompson, a lawyer who is able to state that scientists are no different than other people, and the idea is that scientific questions can be adjudicated in a courtroom atmosphere. And if this notion really takes hold, and people really think like lawyers think, like Thompson, that scientists are no different, we have an enormous problem here.

Briefly, I would like to refer to the remarks about fusion energy. Most people aren't too aware of the fusion thing. The nuclear is hard enough to understand for most people.

Now, the Russians are committed to fusion. They have said we should drop everything, including solar, and concentrate on fusion. They will mangle the laws of physics and thermodynamics to come up with the answer they want. The Russian scientific establishment, going back to Stalin, has

done this and continues to do it.

CHAIRMAN WOLF: I ask you, Mrs. Klotz, we have many people yet to be heard, and I think they have the right to be heard tonight.

MS. KLOTZ: You are quite right. I was hoping you'd ask what this is (holding up a battle helmet). This is a reminder of other aspects to this that I have no intention of talking about.

May I submit this?

CHAIRMAN WOLF: Yes, you may.

(Document handed to the Board.)

MS. KLOTZ: Okay. Thank you.

(Applause.)

CHAIRMAN WOLF: Mr. David Hill.

LIMITED APPEARANCE STATEMENT OF DAVID HILL, WAUKEGAN, ILLINOIS.

MR. HILL: My name is David Hill. I live at 2731 Westwood in Waukegan.

I've been a resident of the Waukegan area for over 15 years, and I'd kind of like to speak about something some other gentleman was speaking about up here, and that is:

You people have really got a problem. You see, this whole thing is in your hands, and you people are the ones who are going to be held accountable.

Now, I hope that you'll make the right decision,

vol 5

because if you don't, and something happens, I'd hate to be in your shoes.

Thank you.

(Applause.)

CHAIRMAN WOLF: Nancy Hill.

LIMITED APPEARANCE STATEMENT OF NANCY HILL, WAUKEGAN, ILLINOIS.

MS. HILL: My name is Nancy Hill, 2731 Westwood, in Waukegan.

I'd just like to go on record as a citizen and as a mother. I am not a scientist, and I don't have all the information that some of the other people here have, but I just want to go on record as wondering what assurance we have that incidents such as the one in Hanford, Washington in 1973 in which 115,000 gallons of high-level radioactive waste was leaked from an atomic energy storage facility.

I was just wondering what assurance we have that such an incident will not be repeated here at Zion?

Also, I was wondering how long is this new storage facility expected to last, and will it be permanent, and what is really permanent when we're talking about radioactive waste?

Also, if such a leak occurred as the one in Washington, what effect would it have on Lake Michigan?

Thank you.

(Applause.)

CHAIRMAN WOLF: James R. Rapier.

Is Mr. Rapier here?

(No response.)

CHAIRMAN WOLF: John L. Volebrecht?

LIMITED APPEARANCE STATEMENT OF JOHN VOLEBRECHT, LAKE FOREST, ILLINOIS.

MR. VOLEBRECHT: My name is John Volebrecht. I live at 1251 Windwood Drive, in Lake Forest.

I didn't come to talk to a crowd. I came to address a few remarks to the members of the NRC.

I am not an anti-nuclear protester. As a matter of fact, I make part of my living serving the industry that provides nuclear power. One of the products with which I'm concerned in marketing is a radioactive waste disposal system, and I just wanted to say the problem here is shall we or shall we not store additional rods at Zion?

The problem I think we should think about is getting--if we cannot solve all the problems, if we can improve, if the Government can help, if the utilities can help work out a program for better ultimate disposal of the atomic wastes, and the unnecessary products of the process, the spent fuel rods and so forth -- the problem I think is disposal. And storage is not disposal. Storage is merely putting off the problem. And that is my request, that you consider that thought tonight.

Thank you.

(Applause.)

CHAIRMAN WOLF: Mr. Rapier?

LIMITED APPEARANCE STATEMENT OF JAMES R. RAPIER, BARRINGTON, ILLINOIS.

MR. RAPIER: My name is James Rapier, 8 Walnut, Barrington.

My undergraduate degree is in mining engineering. I spent many years working for and helping power utilities be more efficient, safer and more profitable. I've spent most of my life in ecology, and believe that it has the hope for a lot of good things for us in the future.

I don't share the same belief when we address the issue of whether we should increase the storage at Zion in this case. When we look back in the past, we're talking about temporary storage facilities. I'm sure that you know as well as everybody else that we thought the solution to the storage of nuclear waste we would have solved decades ago, and which we have not.

The fact that we're asking to increase it three times, indicates that we still don't have the solution. It may have been a bad idea to have chosen Zion and put it right on Lake Michigan, which is such an important body of water to this country, with so many people living near it. It's even worse to consider that we may want to do it again. If it were

another kind of technology, then it would probably be a moot point.

But you know as well as I do how long the half-lives are of the materials that we're talking about, and we've got to talk about what the statistical probability of some kind of disaster -- which I don't care to name -- might be.

I would like to think that before we expand the waste facility, that we find a solution. A lot of people have many axes to grind in asking you to deny this petition, but in reality if we don't stop and find a solution for the storage of the radioactive wastes that we already have, plus that which we're generating, we all know that we're in great trouble right now.

By increasing ythe torage capacity at Zion, we're only postponing the problem. We're buying time. And we've bought time for too long -- far too long. The idea that the answer is right around the corner is something we've all been telling ourselves for many decades, but remember, when we put it there in the first place, we said we're going to have a solution. Now we're talking about actually the possibility of a long-term storage and a question of 100 to 200 or 1000 year earthquake affecting the storage depot becomes more pertinent.

A lot of things that, when we think in terms of civilization that could not happen, do in fact, and could

happen at this facility, and we could be, for the benefit of ourselves and our pleasure, leaving an horrendous problem on this problem or around Lake Michigan because we are not getting to the point of finding a solution.

You have a very simple question of whether it should be expanded, and I think the key element is to say, no, let's don't expand it. Let's find the solution. If there is in fact one, let's not put it off until tomorrow. The decision can be made now.

If we say no, and we deny the petition, maybe if there is in fact a solution for the long term we'll find it one heck of a lot sooner with Commonwealth Edison and the other utilities working harder to find out what it is.

(Applause.)

CHAIRMAN WOLF: Janet Means.

LIMITED APPEARANCE STATEMENT OF JANET MEANS, LAKE BLUFF, ILLINOIS.

MS. MEANS: My name is Janet Means, 355 Briar Lane, Lake Bluff, Illinois. I'm an ordinary citizen -- very ordinary.

I am hopeful that you people, as members of the Atomic Safety and Licensing Board, would have been aware of most of the information concerning the deficiencies of atomic energy plants and the devastating effects of radiation on the health of humans and animals even before you came to

this meeting.

As an innocent citizen, I have concluded that atomic energy was an exciting alternative to fossil fuel. In view of the facts that have been presented in the past few months in this area, and on national T.V. and news coverage concerning atomic plants in general and the health of human beings in particular, I feel intelligent people must be flexible enough to alter their thinking and reconsider the adviseability of continuing the running of all atomic plants, and certainly recognize the necessity of refusing the application of Commonwealth Edison to increase the on-site storage of spent fuel at the Zion Nuclear Station.

I have a small platitude:

Man's ability to lose face may some day save the human race.

(Applause.)

CHAIRMAN WOLF: Dr. Kavalaski.

LIMITED APPEARANCE STATEMENT OF G. P. KOLLARSON.

MR. KOLLARSON: Good evening, brothers and sisters. I believe my first statement should be clarified for the record. I am not Vincent Kavalaski. Vincent and I met in very endearing circumstances one evening after viewing the China Syndrome.

My name is G. P. Kollarson. I'm a world citizen. I have several addresses. I was born in the County that I

el 11

live in now. I live here at the Holiday Inn today. I've lived in other places at other times.

I would like to share some of the thoughts that I have pertaining to the storage facility and the increase that the Commonwealth Edison hopes to gain, but first I would like to say that since the beginning of this meeting early this afternoon I have noticed that we're assaulted by an abundance of electricity in this room. I had hoped that someone previously would have addressed themselves to the question. Since no one has, I feel it's high time to do so.

We have every conceivable light and air conditioning unit on.

(Applause.)

My first question is why? Not only why for the commission, but why have we allowed it to happen? I can't see any valid point to having all these lights on. If people have to read or write, certainly more efficient ways of lighting this room could be used.

I would hope that at tomorrow's hearing -- in fact, from this point on, there will be a diminished supply of what we have.

CHAIRMAN WOLF: Mr. Kollarson, I would like you to address the problem we have here. That's another area and another problem. We have a problem here that you're being permitted to speak about, and I wish you'd address yourself

to that.

VOICE: He has a right to speak.

MR. KOLLARSON: We're using an abundance of electricity at this point which is being generated possibly by the coal generating plant in Waukegan, or the Zion facility. Regardless, we're using a source of energy that's non-renewable at this point in time. So I am addressing the issue. By using this amount of electricity needlessly, you are augmenting and accelerating the use of spent fuel assemblies. That means that whatever fuel is being used to heat up and light up this room now means that a fuel assembly gets put into that pool that much sooner.

So I think that my point is directly to the point.

(Applause.)

(Lights being turned out.)

MR. KOLLARSON: Keep them going down. Right.

VOICE: Mr. Chairman, may I turn these lights off?

CHAIRMAN WOLF: I don't have anything to do with the lighting.

MR. KOLLARSON: I think I can see in almost total darkness. My personal lifestyle is limited as to uses of electricity, and I can only hope that other people out there boycott Commonwealth Edison, not only financially but by physical conservation of the resource.

(Applause.)

The NRC report as of February 1979 has a rating system that grades all the plants in the United States. The rating system goes from adequate to excellent. If I'm not mistaken, there's no provision at all for anything less than adequate.

Now, how can the NRC possibly hope to have a fair judgment, when they only rate something as being adequate? There has to be some type of lesser classification, because obviously the Zion plant is not adequate.

(Applause.)

The credibility of the NRC since the Three Mile Island accident is severely devastated, and I think the Commission from this point on will take a more liberal view of public sentiment. I think you're going to become a more responsible body. If you aren't a more responsible body, the only other alternative is that you're irresponsible to the civilization and the planet we live on.

(Applause.)

All right. The waste storage. I would like a question answered. And so far I have not heard any answers from any of the questions other speakers have directed to the panel. My question is this:

If, indeed, there are 120 spent fuel rod assemblies each year being put into the pool from the Zion plant, and reprocessing is three years away, three times 120 is 360 spent

fuel rod assemblies. Why, then, does Commonwealth Edison ask for an increase of 1200 fuel rod assemblies? It's for one of two reasons: They want to forego a hearing like this in the future or they have some kind of clandestine contract with other nuclear plants to ship their spent fuel rod assemblies in some hideous manner to the Zion plant.

CHAIRMAN WOLF: You have one minute left of your time.

MR. KOLLARSON: Thank you. I'll be able to summarize in that period.

I know from basic mechanics that you need two elements in order to have any system function. The most simple system needs these two elements and God knows, the most complex system, which I think the nuclear power industry borders upon, needs these same two elements. Those elements are, one, space; two, lubrication.

What you have at Zion in the storage pool is a limited space, and you've got lubrication in the form of water. By putting more fuel rods in that space, you're reducing the basic elements of mechanical engineering. That is, space and lubrication. You won't have enough lubrication if you allow this increase to take place to successfully-- even adequately-- ensure the safety of this plant.

With the wonderful array of learned statements and emotional gut-level responses given thus far by human

beings who are no different than yourselves, how insidious and calculated could a decision other than refusal to grant the proposal brought before this Commission be?

Thank you.

(Applause.)

CHAIRMAN WOLF: Diana Tapia?

LIMITED APPEARANCE STATEMENT OF DIANA TAPIA, WAUKEGAN, ILLINOIS.

MS. TAPIA: My name is Diana Tapia. I live at 2731 Westwood, in Waukegan.

I am 12 years old, and I live about 12 miles from the Zion Power Plant. I don't think that any more radioactive waste should be stored here, because I don't think it's safe. No one can be sure it's safe.

I would like to live in this area when I'm older and have my own family. I would like to be sure it will be a safe place to live.

Thank you.

(Applause.)

CHAIRMAN WOLF: Jennifer Hollingsworth.

LIMITED APPEARANCE STATEMENT OF JENNIFER HOLLINGSWORTH, WAUKEGAN, ILLINOIS.

MS. HOLLINGSWORTH: My name is Jennifer Hollingsworth. I live at 1715 Melrose Avenue, Waukegan.

Mine is basically an emotional appeal, in that I

don't understand how anyone can take responsibility right now for nuclear waste that's going to be around for thousands of years.

I don't understand why they bringing it in this area, where the plant and the pool are a stone's throw away from the vital water source, a very large water source, that is the life of millions of people. You know, a great amount of people and a great amount of land, and a great amount of animal life. And I'd like to know who is going to protect -- who is responsible for this lake, then, when something happens? Who is going to give me water? Who is going to give me food? Who is going to give my children food and water to drink? When I'm in the middle of the Midwest and this is the only major source of water I have?

It doesn't seem that anybody right now is taking responsibility for that. At least I don't know of it, and I don't understand how they can take this responsibility, when they don't seem to have a concept of it and of me or of anybody else?

Thank you.

(Applause.)

CHAIRMAN WOLF: Has Mr. Robert Ecknhouse come back to the meeting?

LIMITED APPEARANCE STATEMENT OF ROBERT ECKNHOUSE, GLENCOE, ILLINOIS.

MR. ECKHOUSE: My name is Robert Eckhouse. I live at 310 Drexel Lane, Glencoe, Illinois.

In the 1950s my son was treated with X-ray for what was then considered to be a safe method of shrinking tonsils in the light of the infantile paralysis scare. We have learned since that time that it was not safe. In fact, my son developed cancer. Fortunately, it's what is called a benign type, and he probably will be okay.

However, it seems to me that a similar lack of knowledge of technology is at work here on a scale thousands of times greater than that little dose of X-ray.

Therefore, my feeling is that until we have a better grasp of the technology we certainly should not compound our problem by expanding waste storage alongside a reactor plant where a failure of either could cause damage to the other.

We do not understand the transport problem. We do not understand the permanent storage problem.

Until those problems have a solution, I agree with the previous engineer who said, let's stop additional waste storage and solve those problems.

Thank you.

(Applause.)

CHAIRMAN WOLF: We will stand adjourned until 9:00 a.m., when we will continue limited appearances.

(Whereupon, at 9:30 p.m., the hearing was adjourned, to reconvene at 9:00 a.m., Tuesday, 12 June 1979.)