

EDO Principal Correspondence Control

FROM: DUE: 02/09/01

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DOC DT: 01/06/01
FINAL REPLY:

Norm Cohen
The UNPLUG Salem Campaign

TO:

Chairman Meserve

FOR SIGNATURE OF :

** GRN **

CRC NO: 01-0016

Collins, NRR

DESC:

Salem 1 & 2

ROUTING:

Travers
Paperiello
Miraglia
Norry
Craig
Burns
Caputo, OI
Borchardt, OE
Miller, RI
Cyr, OGC

DATE: 01/09/01

ASSIGNED TO:

NRR

CONTACT:

Collins

SPECIAL INSTRUCTIONS OR REMARKS:

Ref. G20000554, G20000323, and G20000111.

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

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ACTION OFFICE: EDO

AUTHOR: Norm Cohen (UNPLUG Salem)
AFFILIATION:
ADDRESSEE: CHRM Richard Meserve
SUBJECT: Allegation

ACTION: Appropriate
DISTRIBUTION: Chairman, Comrs., OCA

LETTER DATE: 01/06/2001
ACKNOWLEDGED: No
SPECIAL HANDLING:

NOTES:
FILE LOCATION: ~~ADP/...~~

DATE DUE: **DATE SIGNED:**

EDO --G20010014

REC'D BY 15
5 JAN 01 4:15

The UNPLUG SALEM CAMPAIGN
321 Barr Ave, Linwood NJ 08221
609-601-8583/8537

www.unplugsalem.org; norco@bellatlantic.net

Date: 1/06/01

To: Richard Meserve, Chair, Nuclear Regulatory Commission
#1 White Flint North, 11155 Rockville Pike
Rockville Md 20852-2738

From: Norm Cohen, coordinator, UNPLUG Salem Campaign

Dear Chairman Meserve,

Enclosed are copies of whistleblower letters sent by a former employee of PSE&G to the NRC. These letters were provided to us by the NRC through the intercession of Senator Torricelli's office. These same letters were also the subject of a FOIA, now amended, from Public Citizen.

The allegations raised in these letters are extremely troubling, especially coming in the wake of the Indian Point accident and the subsequent report of NRC failures that contributed to that accident, NRC's tardiness in providing answers to our letter of November 24th, and the Hopenfeld DPO (Differing Professional Opinion) of 12/21/99. All of these items focus on steam generators, which is also one of the main issues in the whistleblower letters. This letter is also disturbing because it seems to follow in the same path as the problem with the safe-shutdown cable wraps, where NRC has allowed PSE&G to use human being fire watches instead of the immediate replacement of the bogus cable wraps.

Additionally, in private conversation with this whistleblower, the subject assured me the PSE&G and the NRC have done "nothing" to fix or attend to the safety concerns in this letter and that all of these concerns remain real and valid today.

Therefore, in light of this new evidence of what appears to be either management incompetence at PSE&G or even collusion and cover-up between the NRC and PSE&G, the 89 organizations of the UNPLUG Salem Campaign respectfully request that the following actions be taken at once:

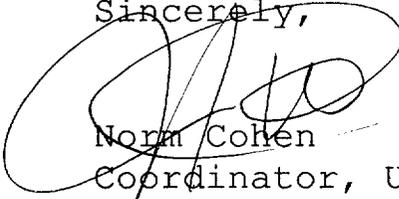
- (1) That a special engineering and/or augmented inspection be performed as soon as possible to explore the concerns and

claims in this whistleblower letter.

- (2) That the NRC and PSE&G release all correspondence relating to the concerns expressed in the whistleblower letter, including, but not limited to, steam generators, water chemistry, alloys, Limitorque valves, snubbers and their lubrication, and the leaking snubbers at Salem Unit 2.
- (3) That the NRC agree with our request of 11/24/00 and release all information regarding the recent inspection of the steam generators at Salem 2, and follow that release with an "on the record" public meeting at which our experts can ask questions and make comments on these reports.
- (4) That both NRC and PSE&G explain why they have chosen to use failed water chemistry and failed alloys at Salem 1 and 2 when better and safer alternatives were available, why a better and safer lubricant was not used in the Limitorque valves, and why Salem 2 was allowed to be put on line with leaking snubbers. As well, NRC and PSE&G should provide the public with laboratory certificates for the heat treatment and a copies of any procedures manuals relating to the steam generators and heat treatment.
- (5) Explain how whistleblower letters like this one are factored into the current risk-informed oversight process the NRC now uses to inform the public of reactor safety.

To avoid any further erosion of public confidence in NRC oversight, and for the sake of the public's confidence in the safety of the three nuclear plants on Artificial Island, we urge you to take these steps at once.

Sincerely,



Norm Cohen

Coordinator, UNPLUG Salem Campaign

CC: Congressman Frank Lobiondo
Hubert Miller, NRC Region 1
Congressman Rob Andrews
Senator Robert Torricelli
Senator Jon Corzine
Senator Joseph Biden
Ms. Jill Lipoti, NJ DEP

March 26 1997

To: Distribution

Dear Sirs:

These letters address some issues which have the potential for being a serious impediment to the restart and operation of the Salem and Hope Creek units. Copies of these letters have been sent to all parties connected to or having an interest in their continued safe operation.

These are not irrational mental musings. They are concerns developed from first hand knowledge of the operation, problems, and what may be the deliberate short-sightedness of some members of the industry; and, legitimate questions of their general attitude regarding safety.

With the overall guiding premise of making a profit as a regulated industry about to be deregulated, their focus is both obvious and necessary. The question is: are these concerns that I've raised and others like them able to come together to form one or more Unresolved Safety Questions? Have they carefully examined the intent and purpose of 10CFR50.59 with reference to the issues discussed in the attached letters? I think not.

Very truly yours,

Distribution:

Frank Lautenberg, Senator
208 White Horse Pike
Barrington Commons, Suite 18-19
Barrington, N.J. 08007

Robert Torricelli, Senator
1 Greentree Center
Route 73, Suite 303
Marlton, N.J. 08053

Joseph Biden, Senator
844 King Street
Room 6209
Wilmington, Delaware 19801

NRC- Region 1 Administrator- Mr. Hubert Miller
475 Allendale Road
King of Prussia, Pa. 19406

March 26, 1997

Region 1 Administrator
475 Allendale Road
King of Prussia, Pa. 19406

A few weeks ago, I sent to you this letter on safety issues regarding the steam generator replacements and how they related to the "economics" of Salem operations. I neglected to include my address at that time. Therefore, I have included **another copy of that letter to you to confirm authorship.**

I have also enclosed another letter on three separate, but related issues. I think that they need your attention.

Dear Sir:

This letter is NOT frivolous; it is sincere, and technically correct. Potential safety and economic issues exist with the current replacement of the steam generators at Salem Nuclear. I think you need to be made aware of the intertwining of the technical issues with the economic issues. Without resorting to emotionalism, I just want to point out these two issues for your consideration as they relate to the economics of the region.

From the technical standpoint, as you know, these current steam generators were found to have numerous cracks in their tubing. It was a matter of safety that prompted PSE&G to shut them down and decide to replace them. Their failure could have led to the introduction of radioactive materials into the secondary side, the water treating facilities, and the eventual release into the Delaware River if not caught soon enough.

The old technology which was used to check for cracks in the tubing was not as good as the new. The new, more sensitive technology was able to find these cracks. Thus, the replacement s for the old steam generators.

Now, with that said, the capacity factor of these units was a dismal 55%, and yet the tubing failed inside of 15 years. No one knows how long they were cracked. With their plans to run at an 80% capacity factor, the question which needs to be asked is: "You, PSE&G, are not changing either the type of process water treatment or the alloy used in the steam generators, just the heat treatment. With the increased operating capacity of 80%, why won't similar cracks develop in less time when these generators have actually experienced similar service life [hours of actual operation]?"

From the economic standpoint, their replacement is the second issue. You should also realize that the customers of PSE&G will be forced to pay astronomical electric rates in the not too distant future [10-15 years] when the steam generators need replacement again. Under deregulated conditions, the utility will no longer be allowed rate increases to cover their faulty decisions, mistakes and operational problems. Thus, in keeping with the free market philosophy, the rates have to rise to recover their costs.

In conclusion-

THEY HAVE ELECTED TO USE THE SAME METAL AND THE SAME WATER QUALITY. Within the same time span of 15 years, or maybe even sooner, less than 10 years, we, the electricity users could see the same scenario again-- necessitating more replacements. If they actually meet their proposed

80% capacity factor to make the units economically feasible, the cracking could be accelerated and appear in less time.

They do not want to spend the time or the money to go the extra step to provide a better quality water for the units and prolong their useful lives. Other utilities have gone to this higher quality water for good reason, not just to spend money.

As a deregulated industry with no guaranteed rates of return, the next time the steam generators fail, they will not have the money to do the job over again. Moreover, if they cannot do this then they cannot keep their stockholders happy with ever increasing returns. With no net returns sufficient to satisfy their stockholders, the net result has to be the closing of the Island complex to cut their losses. The projected impact to the State's economy and ability to supply low cost electricity not to the industrial users, but to the small businesses, and the public will be a microdepression in the State of New Jersey and the surrounding states to some degree.

Ultimately it becomes a future safety issue too costly to implement, and the shut down of the units forcing them into bankruptcy. The net effect will be the same.

Yet the whole blame for their situation cannot be placed on their shoulders alone. A major part of the blame has to be placed on the BPU and similar organizations who do not think the situations out to their logical conclusion but react just to emotional segments of the whole picture. The utilities have tried to make all involved understand all of the parameters of the issues.

Very truly yours,

The following is a technical discussion of the issues as I see them:

The potential important safety aspect of the steam generator replacement now in process at Salem has to do with using water of the proper purity in the units. PSE&G has decided not to make any changes in the makeup water treatment process to control the levels of dissolved and suspended metals found in the process water being used for the primary and secondary sides of the unit. This issue has two parts about which the Commission should be concerned.

First- The metallurgy of the Alloy 600 tubing in the original steam generators was found to be cracked. While the exact reasons for the cracking may never be known; nonetheless, they were considered to be serious enough to warrant the replacement of the steam generators, if the units were to operate safely in the future. Other utilities have also done replacements; however, most have elected to use the Alloy 690.

Forgive the brief digression into Chemistry 101, but there are two possibilities for the development of the cracks-first- the metallurgy of the tubing was incorrect for the type of service. This would also include the manner of heat treatment of the Alloy 600. [Most replacements to date have utilized the Alloy 690. It is recognized as being a better choice for long-term operations.]

The type of heat treatment of these alloys is critical to their behavior in the type of operating environments seen at Salem. From what I have read, the Westinghouse Electric Corporation has come out in support of the new Alloy 690. They also made their original recommendation to use the Alloy 600 on the basis of their research and operating experience. Their recommendation was made in good faith and to the best of their existing knowledge at the time. The Alloy 600 should have lasted for the 40-year design life of the plants. It did NOT.

Now, perhaps a valid question to ask of Westinghouse Electric is: "What proof do you have that this Alloy 600 with the only difference being the manner of heat treatment is going to last any longer or as long as the original Alloy 600 used in the old steam generators?" Will these units be safer to operate, just as safe as the old ones, or not be safe as the old generators? Are there valid reasons for the public to be concerned about the veracity of PSE&G's "Safety is our primary concern"?

Second- the water treatment scheme for the units is not being changed. The same elemental concentrations and types will be present with the new steam generators. I wrote to the Director of the Steam Generator replacement project about my concerns for depending solely on the heat treatment which the Alloy 600 tubing in the replacement generators had been given. I made him aware of the fact the there are nuclear utilities on the West coast that are operating their water treatment facilities with the elemental concentrations at the parts per trillion levels [ppt].

In his reply to me, he stated that PSE&G was NOT going to consider making changes to the water treatment system to produce water with the elemental concentrations in the ppt ranges. He said that they were going to depend solely on the heat treatment to provide the safety margin.

What he did NOT say was that if they had decided to do the job correctly and make the units safer to operate, NOT letting themselves be beaten up by senior management to cut costs and get the units back on the grid ASAP, that they would have made changes to the water quality to be used for the replacement generators.

Furthermore, they are also looking into using as yet unproven technology through changing the chemical used to control pH and corrosion on the secondary side. They are looking into justifying the use of an amine as a method to control the erosion/corrosion of the tubing metal.

March 26, 1997

Region 1 Administrator
475 Allendale Road
King of Prussia, Pa. 19406

Dear Sir:

This letter contains **three** potential safety issues regarding not only the three reactors on Artificial Island, but may also include those across the country.

First, it has to do with the lack of proper maintenance and relubrication programs for the Limitorque valves, **second** the lubrication in 85% of snubbers for high energy piping used in every reactor has failed, and **third**, specifically, for Salem II- the hydraulic snubbers are leaking.

While at PSE&G, I was asked by Engineering to review the status of the lubricants in the Limitorques AND the snubbers Limitorque valves. The findings for both types of devices follow:

Nearly every time Maintenance opens a Limitorque on the Island, the grease(1) is found to have "failed". That is the grease separates into its components of thickeners and oil. The thickeners and other additives are not lubricants in themselves. Therefore, when a valve is to function, these may actually prevent them from performing their design function. Without a PM program which would be a real O&M

burden to the industry to have to take the valves out of service for inspection on a random basis, they do not have the statistics to know the condition of the lubricant and whether or not it will prevent their proper operation in an emergency situation. (1) The greases are typically either mineral oil --based or synthetic hydrocarbon-based. The refiners give the former a one-year useful life from date of packaging and the latter a two-year life. The nuclear utilities typically do NOT check each one device within this time period.

The valve and snubber vendors are bound by the rules which do not allow simple changeouts of the greases. The Environmental Qualification Programs are inflexible. In many cases, the greases with which the devices were originally "qualified" are not longer made from either the same oil base stocks or the same additive packages. Therefore, to say that the use of the same brand name of grease is the same exact one used to "qualify" the devices as the EQ programs infer, is NOT correct.

Neither the utilities nor the vendors of the devices want to spend the money to "requalify" their equipment using the superior modern synthetic greases now available. These greases do not separate to any appreciable degree over a minimum of four years. Data shows that they do not separate after as much as ten (10) years. PLUS, gentlemen, the thickeners are powdered Teflon. It is the slipperiest substance known to man. Even if the grease was to separate, the devices would still move as designed because the thickener would NOT impede their operation.

In the case of the snubbers, information from the Nuclear Network showed 85% of the snubbers would not function as designed due to the failure of the lubricant to remain in a useful state over several years. Remember, gentlemen, these are specifically designed as part of the restraining systems for high energy pipes in case of a cataclysmic failure of one of the pipes either in a LOCA, or an earthquake, or a simple metallurgical failure of the pipe material over time.

Thus, the question is: are they going to do the job they are designed to do when they are needed to operate?

Third, the hydraulic snubbers are leaking in Salem 2. What are you doing about them? Will you allow them to operate after a modest "pencil whipping" of this and the other problems outlined above by some beleaguered engineer in fear of losing his job? Sorry, that's the reality of the situation.

I did more research on my own. This letter is part of the results

Are you going to permit the restart of Salem 2 with leaking hydraulic snubbers? Is this in actuality an **"Unresolved Safety Question"**? Have they done a proper 10CFR50.59? May I suggest that you look at these issues? These may still be of a serious nature and need an explanation after review by an engineering firm not affiliated with the nuclear industry.

We the public and the ratepayers are owed some answers. Accurate, legitimate technical answers to the issues which have now been brought to your attention are needed BEFORE we can decide that the units ARE safe to operate.

While the question may be painful: Are not those responsible for the overall civilian nuclear program obligated to look into these and other legitimate issues?

The technical issues are described in the following paragraphs:

Specifically, the lack of any kind of periodic relubrication program for the Limitorque valves has the potential to induce failure of one of these valves when needed the most. As it was, whenever, one of them did not function, they would disassemble it and often found that the lubricant had dried out and/or separated. This prevented their proper operation which leads to the next logical question: Are these units capable of being operated safely when they are already aware of a problem?

Regular greases- mineral-oil based or synthetic hydrocarbon based all eventually separate into their constituent components of oil and additives. Typically, the grease additive packages deposit around stems and other parts that have to move- either rapidly or slowly; as a result, they are prevented from doing so. As late as this past September, 1996, PSE&G did not have a program to go in and change out the lubricant in these valves.

In the case of the snubbers: one of the manufacturers of these important appurtenances- has danced around the lubricant issue. Partly because of the NRC requirements that these be "Qualified" with a specific lubricant. In this case it is the Chevron product- SRI-2. It is a synthetic hydrocarbon-based grease that separates into its components in as few as two years, depending on the ambient temperature.

When confronted with this information, the snubber vendor would only say that their snubbers would work and were "qualified" with the Chevron grease. Although they knew the fact that the grease did dry out and prevented these devices from functioning as designed in 85% of the snubbers tested, they would not address the issue. Their comment was that as long as the grease was still in its useful life, their devices would work. Talk about double talk. As you, no doubt, know, they are used to prevent major pipe movements during any seismic or sudden loss of coolant events.

Once again they would not produce any paperwork on the grease problem without PSE&G spending money to requalify them with the use of a superior lubricant. I contacted them about the use of the fluorocarbon grease which would not separate into its components as readily. They remained non-committal.

As an aside-- the thickening additive of the fluorocarbon grease is powdered Teflon. Unlike the usual grease thickeners which can cause binding of moving part due to their physical properties, the teflon material is the slipperiest material known to man. Thus, the parts would still move as required unlike with the dried out Chevron product which prevents their movement.

The leaking hydraulic snubbers-

What guarantees are there that they will work as designed if, God forbid, there is a major loss of coolant accident? Or a seismic event? Are you aware of this?

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Richard Maserve, NRC chair
#1 White Flint North
11155 Rockville Pike
Rockville MD 20852-2738

20852/2738