



AIR and WATER Pollution Patrol

BROAD AXE, PA.

U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

October 10, 1984

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BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL PANEL

In The Matter of
PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station
Units 1 and 2)

Docket Nos. 50-352
and 50-353

APPEAL OF AIR & WATER POLLUTION PATROL (ROMANO) RE ITS
CONTENTIONS DENIED BY THE BOARD IN ITS SECOND PARTIAL
INITIAL DECISION OF AUGUST 29, 1984 (2nd PID)

On September 10, 1984, Air and Water Pollution Patrol filed an appeal re its Contentions denied by the Board (in its Second Partial Initial Decision of August 29, 1984 (2nd PID), namely carburetor ice (V-4) and welding deficiencies (V-1)

As it relates to V-4, AWPP (Romano) contends:

Neither the Applicant nor the Staff have adequately considered the potential for carburetor icing on aircraft flying into the airspace that may be affected by emissions from the Limerick cooling towers.

The Applicant's fundamental basis is that at a distance from the cooling towers of about a quarter of a mile, the temperature and humidity differences between the plume and the ambient air are insignificant.

The Thomson Penn State test was used as the basis for that proof. The Applicant's witnesses did not perform that test and, further, the purpose of that test was not the determination of how far the plume traveled.

The Applicant states the plumes would not present a potential carburetor icing hazard different from the naturally occurring atmosphere, because an airplane could not remain in such a small region



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AWPP Appeal re its Contentions Denied by Board in 2nd PID continued:

of the plume for more than a few seconds. This is rebutted by the Staff's own witness Mr. Geier, who testified carburetor ice can form instantaneously. (Geier's written testimony at A-4)[†]

Furthermore, Applicant states that even if conditions in the entire plume, up to about 10 miles, were significantly different from the surrounding air, it would be highly unlikely that an airplane would, or even could, remain in the plume long enough for sufficient carburetor ice to accumulate to cause engine failure, which the Applicant further states could be as much as eight minutes, is totally contradicted by Geier at A-4.*

At A-4 of 2nd PID the Board says there is ample timely notice to the pilot due to symptoms of the degraded engine performance, and gauges, that ice is accumulating. There are no gauges to tell that ice is forming in 99.9% of planes used in the Limerick area. Also Aereo Magazine November 1980, Alfred R. Puccinelli, page 8 states "carb ice forms in a very underhanded manner. It can come on very rapidly, cause its sometimes lethal effects and disappear before the FAA can detect it.*" Further the Board was not told of the four or five similarities of the symptoms for carburetor ice as against other malfunctions as per water in gas, vapor lock, dirt in gas, improper gas.

Applicant avers that pilots must face normal variations in temperature and humidity conditions over relatively small changes in airspace locations of greater magnitude than variations which would be presented by cooling tower plumes. But AWPP states pilots are advised by Flight Service Stations of such conditions, whereas no advice is given for peculiar, localized conditions for a pilot unfamiliar with the Limerick reactor plume conditions.

Mr. Geier as a flight instructor also testified there is no FAA requirement to check for damage to rented airplanes before a plane is re-rented. Therefore, some mechanical problem could give the same symptoms as carburetor ice, and if carburetor heat was applied, it could

* "Safety Corner" by Thomas A Horne "Carburetor Ice Still A Threat" as in AOPA Pilot, p110 "...warning could be too late because it has been shown that carburetor ice can form & shut down an engine in 1/2 minute".



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reduce power to the point of a stall and possible tragedy.

Mr. Geier's written testimony stated the Limerick airport flight pattern was a standard left hand pattern, when in fact, because of the proximity of the towers, it was changed to left in one direction and right in the other direction. Further, Mr. Geier, testified that a pilot could always radio the Limerick field for information. But in cross examination by AWPP Mr. Geier admitted the field did not have to answer a calling pilot whether they were present in the field office or not. I state this to show the need especially at Limerick to avoid a tragedy, and the Board was wrongly influenced by Geier.

While Applicant and Staff (at A-6 of 2nd PID) testified all pilots were taught thoroughly on the use of carburetor heat, the Private Pilot a generally used instructional book for students shows barely more than 1 paragraph devoted to handling carburetor ice. Totally undisputed. The fact that pilots with as much experience as the Applicant's witnesses had carburetor ice accidents, indicated carburetor ice can sneak up on any pilot, but more so a student pilot who gets disoriented.*

At page 8 (of the 2nd PID) at A-8, the Board states an aircraft would not, indeed could not, reasonably remain within the influence of a plume within a quarter of a mile of the cooling tower for more than a few seconds, however, Mr. Geiger testified that ice can form instantaneously. Even $\frac{1}{4}$ mile and few seconds is longer than instantaneously (also see forgoing reference Aerie Magazine-Puccinelli, p8 November 1980) and "Safety Corner" by Thomas Horne (preceeding page).

Under A-9 of 2nd PID the Board states that the Applicant, without any reasonable contradiction re differences in Keystone vs Limerick towers has established by the overwhelming preponderance of the evidence that the Limerick cooling tower plumes will not have temperature and moisture conditions significantly different from the ambient air

* see table 6 of Light Aircraft Piston Engine...carb.ice Krug testimony attachment B



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AWPP Appeal re Its Contentions Denied By Board In 2nd PID continued:
beyond a quarter mile from the tower. However, AWPP disputes that
it is a "reasonable contradiction". The towers were different and
nowhere in the Thomson test was carburetor ice at certain distances
from the tower even mentioned.

At A-11 of 2nd PID the Board states the operation of towers of
the type used at Limerick creates visible plumes of water vapor which
will condense to form a visible plume approximately 50 to 80 percent
of the time. Therefore, as much as 50 percent of the time, the plume
will be invisible, and pilot response to the possibility of carbur-
etor ice cannot take place to avoid carburetor ice. Also under A-11
the Board states the humidity content at or near full power will be
saturated irrespective of ambient inlet air drawn into the tower.
This is contradictory to Smith at Tr-6639.

Re A-13 of 2nd PID, Smith at Tr 6408-10, says a plume rising in-
to air that is already saturated and therefore will
blend into and become part of the ambient cloud deck. AWPP contends
that cloud deck could be at the pattern altitude of the Limerick air-
port. Such low cloud deck in calm saturated air could move slowly
over the airport traffic pattern as close as 1 mile away--which is
more than $\frac{1}{4}$ mile vertically and/or horizontally.



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Smith, at Tr.6238,8334 & 6619, in stating plumes rise far above 1000 feet, admitted plumes beyond the $\frac{1}{4}$ mile principle, upon which the Applicant's entire case depends, is often the case.

At A-15 of the 2nd PID, the testimony related to tests at the Keystone plant re invisible plumes. However, it was not the purpose of the Thomson Penn State Keystone experiment to study invisible plumes, or distances from tower that the plume traveled. Further, none of the witnesses took part in the Thomson study of the Keystone cooling towers in Western Pennsylvania (App. Ex. 13). Further, nowhere in the Thomson study is the word invisible plume even used. Smith, at Tr 6259, 6279,6405, and 6418 as per A-15 of 2nd PID refers to Applicant's witness stating the Keystone study "was expressly to determine conditions inside and outside the visible and invisible plumes". It was not to study temperature and humidity at different distances from the tower upon which the Applicant claims its $\frac{1}{4}$ mile from tower basis for saying there will be no increased potential for carburetor ice at Limerick. Further at A-15, top of p 12, Smith says the technique used at the Keystone plant experiment enabled the researchers to intersect the so-called invisible portion of the plume with great regularity. Tr 6262,6279, 6419-20,6459 (Smith). But Smith contradicts such testimony (see Tr6260-15) where he stated "they [Keystone] had a very difficult time finding anything at all, no matter what altitude they flew at, or how many passes they made". This testimony contradicts statement in A-16 of the 2nd PID.

Under A-18 of the 2nd PID, the last sentence infers AWPP (Romano) did not contradict Tr.6424-25 by Smith and Tr.7033 by Markee. But at this time I protest to your Panel that I was not given my legal right to cross examine as my own witness as Judge Brenner had, before the hearings, told me I would have.



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AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

At A-19 of the PID, the Board agreed with the $\frac{1}{4}$ mile from tower principle which relied heavily on the Thomson Keystone study. However, no where was distance from tower---or dewpoint discussed as proof that the witnesses' testimony was based on valid facts rather than biased opinion.

Under A-20, the Board's statement, page 14, that "AWPP's representative showed an unfortunate apparent inability to understand the testimony" is a personal attack on a citizen effort. It demonstrates that factual evidence is not the only basis in this case. Further, the Board takes obviously biased license in stating (p 14) that "AWPP seems to believe that the testimony that plumes will not affect carburetor icing beyond a quarter mile from the tower means that Applicant and Staff believe that plumes longer than a quarter mile will not exist". AWPP does not believe that at all. How can the Board deal in personal feelings as to what an intervenor thinks? Because the Board so interprets AWPP's understanding, AWPP feels the Appeal Panel's duty is to insure I have an unbiased, non-personal judgement of AWPP's testimony as it re-examines the record. In the same A-20, the Board speaks of "uncontradicted" testimony by Applicant's witnesses. But AWPP showed contradictions by Smith (Tr. 6260 at 15 and at 6262 at 13-14-15) A further contradiction by Smith, as interpreted by the Board in A-13, and A-22, is shown when Smith at Tr. 6408-10 testified that a plume "will blend into and become part of the ambient cloud deck." Fig. 9 (Cooling Towers and The Environment (Smith, et al) shows plume rising over 3500 feet right through the cloud deck. Also, 3500 feet is far beyond $\frac{1}{4}$ mile .

At A-24 the Board incorrectly stated "AWPP's assertion that the Limerick cooling tower plumes will lead to increased aircraft carburetor icing ignores the fact that the conditions causing carburetor ice formation are well understood and that steps have been



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AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

taken to assure that it does not present a significant problem to pilots who are reasonably attentive. (Smith and Seymour, ff. Tr.6234, at 8; Geier, ff, Tr. 6883, at 2-4; Krug, ff. Tr.6883, at 2-3)".AWPP states while conditions causing carburetor ice are well understood, steps have not "been taken to assure that it does not present a significant problem to pilots who are reasonably attentive". See Attachment B of Mr. Krug's testimony, Light Aircraft Piston Engine, etc. p 10, table 6 showing even certified Flight Instructors involved with carburetor icing accidents.

At A-26, the Board reveals the Applicant relied on another indirect experiment in which their witnesses did not take part, namely, the use of an automobile engine on the ground. AWPP states that experiments not done with an airplane, where other air conditions enter into the experiment to more exactly normalize the effects in the air, invalidate the results.

The Board states, according to Seymour "such studies are done in a laboratory because it is difficult to find optimum conditions for carburetor ice accumulation occurring naturally".Tr.6507-08 (Seymour), AWPP states, these optimum conditions are easily found as per Smith and Seymour. ff Tr. 6234 at 8-9. At A-27 p 17; 68°F and 100% humidity is easily found as stated in Smith 6234. Also see weather records.

At A-27 it is repeated that without carburetor heat it would take eight minutes of flying time for enough carburetor ice to accumulate to cause a 25 rpm reduction in engine speed. AWPP repeats that Geier, admitted carburetor ice can form instantly but at ff Tr. 6883 at 2 his statements are opinion and not what happened with flyers. In fact his testimony at Tr. 6883 was an attempt to cancel his statement which undoes the Applicants position at A-27.

A-28 includes a further attempt to change the damaging testimony that carburetor ice can form instantaneously. This means carburetor



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ice can and does form without warning. Further evidence that witness Geier contradicts himself is seen in his subsequent testimony (Tr. 7001-03 (Geier)). By the time carburetor ice forms, in particular during a landing at Limerick when the pilot could use extra hands, engine failure could result in tragedy, especially a student pilot who is forced into a go-around.

The statement of Smith Tr. 6249 flies against statements of Smith re saturated air conditions in the plume as stated previously herein. For example, three degrees lower and twenty percent higher humidity could result in conditions conducive to what would be necessary in many cases to form carburetor ice, as any physicist would agree. While Smith and Seymour again attempt to resurrect the quarter mile--8 minute principle, the written testimony of Geier that carburetor ice can form instantly disproves their opinions.

Under A-31 and 32, it is the Board which is unrealistic regarding carburetor icing. The Board feels the solution, as biasedly presented by Applicant and Staff witnesses, to all problems that are, or appear to be due to carburetor icing, are solved by just depressing the crude carburetor heat lever. (See Krug, Attachment A, table 6 showing long experienced instructors crashing due to complexity of the carburetor ice problems).

The Board, because of ambiguous testimony, missed the point that carburetor ice, too many times, does not show up until too late. For the Board to convey in A-33 that "carburetor ice can be removed in seconds by the use of carburetor heat (as per 6364-67; 6376-78; 6383-84; 6668-71 (Seymour) and Tr. 7004-05; ff 6883 at 4-5) is to set a trap that might bring possible tragedy to 50% of pilots flying in the Limerick area. Such statements ignore many confusing factors, at times when split-sec-



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ond decisions must be made, including freezing of the carburetor heat cable, preventing its use.

Also in A-33 the Board says "AWPP agrees that if carburetor heat is used, ice will not form (Tr. 6825)", but AWPP's agreement was conditioned on ice not yet having formed unknowingly beyond correction, and if the very confusing indications of carburetor ice is not a false alarm due to other causes that give the same indication as carburetor ice. (Indications like vapor lock, dirty gas, the wrong gas, magneto problems, or other engine malfunctions).

Also at A-33, Seymour (Tr. 3676-81; 6628-29) says "carburetor ice would not cause instantaneous engine failure without significant noticable symptoms alerting the pilot to the problem". AWPP responds that if the problem reached "significant noticable symptoms", it would require split-second decisions, and the incorrect use of carburetor heat for a problem having the confusing symptoms of carburetor ice, but not due to carburetor ice, could result in power loss sufficient to cause engine damage, a stall and a probable crash. The AOPA Air Safety Foundation Operational Flyer, Volume 2, Number 1, last sentence of 2nd paragraph in 3rd column on first page (enclosed) states: "Leaving the [carburetor] heat on [as in the improper analysis of the symptom suggesting carburetor ice] could seriously reduce the amount of power available and could [further] damage the engine. Thus the significant noticable symptoms Seymour talks about with the application of carburetor heat could cause an accident rather than prevent it.

At ff Tr. 6883 at 4-5 Geier is quoted as saying "A trained pilot would not be likely to confuse the indications of other engine problems, with the accumulation of carburetor ice."



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AWPP Appeal Re Contentions Denied By Board in 2nd PID continued:

To show that statement is incorrect see Krug, Attachment B, Light Aircraft Piston Engine Carburetor Ice Detector/Warning Device Sensitivity/Effectiveness, June 1982, Federal Aviation Administration Introduction-page 1-enclosed.

At A-34, testimony the Board received led them to state that "a pilot should be able to remedy a carburetor ice problem after detection", but as in forgoing reference (Krug, Attachment B, p 1 at bottom) such testimony could not refute the fact that there is no instrument to detect carburetor ice.

On this point of detection, at A-35 the Board states "pilots are trained to apply heat at the first indication (detection) of an icing problem". But as referenced above by the FAA, there is no reliable instrument, let alone judgement of the pilot to know when there is, quoting the Board, "the first indication of icing". As quoted before in "Safety Corner by Thomas Horne, April 1980 AOPA Pilot (top of page 110) (enclosed) quote: "...ice can form and shut down an engine in less than half a minute under the right circumstances".--that's certainly in less than 8 minutes which Smith states in forgoing, and certainly shows engine failure would happen because the pilot has no reliable way of obtaining what the Board describes as the first indication of an icing problem. That first indication, as statistics of fatalities show, could and does come after it is too late.

At Tr.6673-75 Seymour; and Krug (Tr. 7042) state "the potential for carburetor ice is less when the throttle is fully open, as at take off. But this is contradicted by Krug's Attachment B, see Table 3, page 7, which shows carburetor ice accidents at take off which is always at full power, between 1976-1980 was 66, whereas it was 15 at cruise power, that



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AWPP Appeal Re Contentions Denied By Board in 2nd PID continued:

is when throttle is not fully open.

At footnote 2, bottom of page 21 of the 2nd PID Geier (Tr. 7101-02) as it relates to the Limerick airport, and in his written testimony, he was wrong both in pattern direction and altitude, testifying that lowest heights at the airports would be above 1200 feet, again disproving the $\frac{1}{4}$ mile from tower principle. As it relates to Geier's testimony dealing specifically with the Limerick airport, Applicant and Staff attorneys agreed to cross out wrong facts about the Limerick airport before AWPP (Romano) had a chance to show, during cross examination, that Geier did not really know what the conditions at the Limerick airport area were, and therefore, resulted in having biased the Board because of his high position with the FAA.

While it is not too important, I give an example of testimony that could be misleading. The Board at A-36, on the basis of testimony by the Applicant and Staff witnesses, wrote that "the pilot normally applies carburetor heat on the down-wing leg "even if there is no indication of carburetor ice". The Board continues "an increase in engine rpm after the carburetor heat is applied is an indication that carburetor ice was present and the heat eliminated it".

First that is wrong because carburetor heat is applied not on the start of the downwind leg, but is at the end, just before the base leg. The Board then is unflinched to write that "an increase in engine rpm after the carburetor heat is applied is an indication that carburetor ice was present and that the heat eliminated it". If that statement were correct it would



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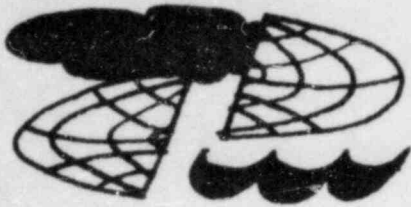
AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

mean that carburetor ice was present before the pilot put on the carburetor heat--that is, before he knew it was there. Thus the testimony that carburetor icing is easily detected is disproved. The fact that carburetor ice sneaks up on the pilot, with conditions suddenly encountered as in the localized, high moisture conditions caused by the tower exhaust (35 million gallons per day).

"As required" in a flight manual, as defined by Geier at Tr.6890; 7007-07 (see A-36) quote: "means that normal procedure is to leave the carburetor heat on throughout the approach". On its face that is incorrect. "As required" means, as it states, carburetor heat is to be used when and if a pilot knows he needs it, and not routinely throughout the approach.

Under A-38, the Board's statement that it is not their conclusion that aircraft can have tragic accidents unless due to pilot failure to use well established procedures and available equipment. AWPP again refers the Board to the references cited, and to the accidents cited, one reference being Krug's Attachment B--tables 6-7 etc and points (2) (3) (4) (5) (6) page 20 Krug attachment B.

Further under A-37 The Board states application of full power after carburetor heat is removed, ameliorates icing potential. That statement would suggest that the use of full power always lessens the icing potential. Table 6 of Krug, Attachment B, disputedly shows more carburetor ice accidents at takeoff (full power) than at cruise (less than full power). And carburetor heat is not always removed in order to depend on full power to protect against carburetor icing. Under cer-



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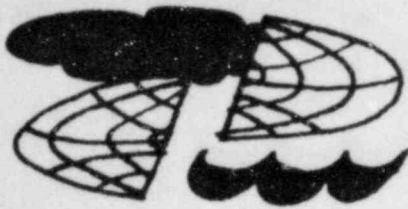
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icing conditions carburetor heat is applied purposely on take off with full power, demonstrating again, the complexity of the problem of carburetor ice and heat application .

AWPP agrees with the Board when the Board states, in A-38, that carburetor ice is a well recognized potential hazard... but it [the Board] fails to recognize that procedures and instruments are not available, but Introduction, p-1 Krug, attachment B, previously referenced in full, will aid the Board in recognition of the problems and its deadly effects.

Under A-39, the Board states "any variation between the cooling tower plumes and the ambient air is insignificant when compared to the much larger normal temperature and moisture variations over relatively small changes in location [meaning short distances] that pilots face in routine flights through ambient air". Unfortunately, no weather records were shown to prove such statement.

AWPP feels that conclusion resulted from biased, incomplete ambiguous testimony. The $\frac{1}{4}$ mile from tower at Limerick was not conclusively shown but was extrapolated from experiments mostly not done by Applicant's witnesses. The Board's conclusion is wrong because the effectiveness of carburetor heat preventing carburetor ice was not shown; the training of pilots to insure carburetor icing would not occur was not shown, and the presence of instruments to detect carburetor ice are not present in 99% of the planes flying in the Limerick area, nor does the FAA approve them or consider them reliable. With a large percentage of students flying low over the reactor area and with a radio guide one mile from the reactor area, thus concentrating student and low-time flyers. the unsuspected, localized conditions



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AWPP Appeal Re Contentions Denied By Board in 2nd PID continued:

for carburetor ice insures increased potential for carburetor ice...and accidents.

Based on all the above, AWPP's contention does have merit requiring special attention. Even if the quarter mile principle were correct, a plane is permitted by FAA rules to fly within 500 feet of the reactor tower (another hazard potential) which is well within one-quarter mile.

While the Applicant's witnesses mostly gave opinions on tests they did not themselves do, the opinions they gave were not fact, as shown by examples of contradictions and ambiguities in the witnesses own statements. Therefore, AWPP's contention that there was inadequate consideration for increased carburetor ice potential has merit, and pleads the Atomic Safety and Licensing Appeal Panel consider the consequences that can be avoided. The Board must require a study under "socked in" stagnant conditions that shut down many airports even when it occurs naturally. Such condition can result more often because of the Limerick plume. Further, with invisible moisture plume accumulations 50% of the time at Limerick a deadly invisible "socked in" condition can trap unsuspecting student or low-time pilots.

In Summary,

The Board was further impressed by the opinions of Applicant and Staff witnesses who stated carburetor ice was really not a problem first because it is easily detected if present. Secondly, carburetor ice cannot be confused with any other indication. Thirdly, carburetor ice is easily gotten rid of in just seconds by the pilot simply depressing the crude carburetor ice lever.

However, the references provided by AWPP, based on experience and fact (and not opinion) refute the opinions on which the Board made its decision to discard AWPP's carburetor ice conten-



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tion.

The references are facts including fatality figures that give tragic proof, the witnesses are wrong as detailed in Light Aircraft Piston Engine Carburetor Ice Detector/Warning Device, Sensitivity/Effectiveness June 1982 (DOT/FAA Ct. 8444). For example page 20, (2) (3) (4) (5) (6) where #4 stated "Performance degradation may not be caused by ice formation", thus refuting the Applicant and Staff witness testimony that every pilot knows the performance degradation means carburetor ice. (also see (2) & (6)).

The undeniable proof that the Applicant and Staff position lacked validity, as it relates to the simplicity of taking care of carburetor ice, must lead the Appeal Board to closely check AWPP's testimony that shows the "quarter mile from tower principle", upon which the Applicant and Staff will permit risk to pilots in the Limerick area, is similarly biased and not based on "beyond-a-reasonable-doubt" fact.



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AWPP Appeal Re Contentions Denied By Board In 2nd PID continued:
Relating to AWPP Contention VI-I:

Philadelphia Electric's Quality Assurance and Quality Control program apparently operated since beginning of construction in 1974 on the principle that if the NRC inspectors find bad concrete, cut reinforcing rods, bad welds, or hundreds of other violations actually described in the hundreds and hundreds of reports of violations, then Applicant will fix it.

Therefore, as it relates to AWPP Contention VI-I, AWPP appeals the decision of the Atomic Safety and Licensing Board as delineated starting page 99 of the Second Partial Initial Decision dated Aug. 29, 1984.

I appeal because my contention was changed by the Board and in so doing emasculated the force of the contention. That central contention as originally submitted by AWPP (Romano) without doubt would show an absolute "Pattern of Carelessness" (the original contention). This pattern was readily demonstrable on the basis of hundreds of official Nuclear Regulatory Commission Inspection and Engineering (IE) reports on inspections since 1974.

The reports AWPP studied, as an example give details on careless workmanship irrespective of where or what the activity was as it might ultimately affect safety of millions of people within thirty miles of Limerick. I refer to careless workmanship in concrete mixing and placement (see IE report 76-09 dated 10/13/76). The carelessness did not just border on contempt, it actually and blatantly was contemptuous of specified written procedure. The degree of contempt is obvious when following the finding of improperly mixed concrete, the Quality Control Inspection Reports (see 76-09-03 enclosed) tried to hide the incident. Those who were respon-



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sible for reviewing the situation did not do so; that the decision to let the improperly mixed concrete remain was not done on the basis of an engineering analysis; and that the bad concrete mistake was not reported as per specified reporting procedure when mistakes are made. The foregoing suggests a purposeful effort bordering on the criminal as it relates to public safety. Subsequent to the improperly mixed and placed concrete incident, indications are that the incident must have involved much more concrete than reported in the 76-09-03 report. On removing scaffolding, huge voids in the drywell wall surrounding the reactor core were found, some as much as 67 *inch* long in a 72 *inch* wall as described in IE Reports.

In the effort to determine what effect these voids would have on the integrity of the crucial drywell wall, it was necessary to fire-cut the steel shell of the reactor pressure vessel. Four 10" X 12" sections were cut out, and on the basis of those approximately four square feet out of possible thousands of square feet of the inside surface of the reactor pressure vessel, a decision not based on proper statistics was made that ruled the entire inside surface of the reactor dry well wall was free of voids. In that process, the four plates had to be re-welded back on to the steel shell, thereby creating another questionable weakened unit in the extremely crucial reactor core area.

To repeat, because the "Pattern of Carelessness" was improperly denied, I appeal the decision of the Board because that integrity of the steel pressure vessel wall and the surrounding seven foot thick drywell concrete wall may be the cause of some future accident if not re-evaluated.



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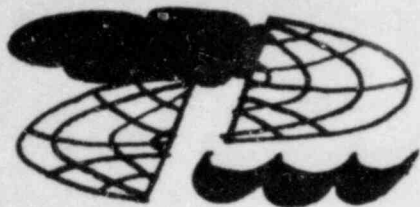
AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

But there were hundreds and hundreds of other careless infractions involving such contemptuous carelessness as throwing bundles of re-inforcing rods into concrete, careless of the effect on strength and the specified procedure requiring distances between rods (*Sec 2 (Appendix A -76-09)*). There were some instances of such contempt that some workers would anonymously report such things as bolts that were put in place even though they could not reach the threads into which they were supposed to attach. There were reports of drills that could only be given out (because of damage they could do) with special sign-out and logging. When records were inspected many drills were gone without any record...obviously stolen, again showing contempt of Quality Assurance and generally lax control that even manifested itself in incidents of careless sabotage of electrical conduits.

In spite of hundreds of these items the Board would not permit looking into the "Pattern of Carelessness" contention AWPP wanted litigated.

In fact as stated, page 99 at D-2 of 2nd PID, the Board admits rejecting AWPP's contention, although the Board did not say it had done so prematurely since it *ultimately* had to... but in its own arbitrary form which I protested at the Oct. 17-18, 1983 meeting on Phonexville, Pa.

The arguemnt that AWPP's instances of infractions were taken from NRC inspection reports and, therefore, known, did not at all minimize the description of carelessness while such argument also indicates laxity of the NRC in premiting repeat infractions as occured with welding. It was also unfair for the Board to argue how AWPP found infractions since there was no other way for a citizen group to do it otherwise.



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AWPP Appeal Re Contention Denied by Board in 2nd PID continued:

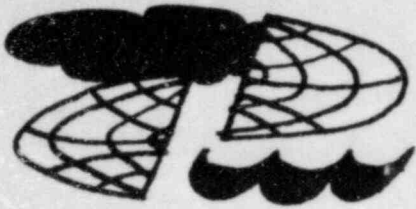
AWPP (Romano) does think, however, that even mention of the point of AWPP's use of IE inspection reports for its information rather than some other way indicated bias by the Board.

During the period previous to the Board's premature rejection, AWPP wrote persistantly that statements being made by the Applicant re the "Broomstick Affair" (IE 76-06-01), were incorrect, and that the Board was in error in seeking AWPP's dismissal.

AWPP regards the above as an example of unfairness since the Board should not have written my contention was being rejected while they looked into my allegations. They should have looked into the allegations (which were found to be true) BEFORE AWPP's contention was rejected. Further evidence of bias by the Board is evident in the fact that after AWPP (Romano) forced the Applicant to admit, after repeated statements that they inspected all welds, that they really did not do so, the Board improperly stated it was the Applicant who brought the lack of total inspection to the notice of the Board (see D-9 at page 104, where it states: "...incompleteness was discovered and corrected by Applicant...").

Further evidence of bias is seen under D-6, where the Board arbitrarily "held it was unnecessary for the Applicant to follow the normal course and file its proposed findings of fact first" because nothing AWPP said mattered, whereas everything the Applicant said had merit. In changing the normal course, it prejudged AWPP's case previous to the end of the hearing with adverse effect on continuance by its representative, Mr. Romano, as Mr. Romano protested to Mr. Brenner at the time.

Further, AWPP totally rejects the statements in D-13,



AIR and WATER
Pollution Patrol
BROAD AXE, PA.

(20)

AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

page 105 that the facts, such as in the 76-06-01 Broomstick Affair was truthfully stated. In fact Mr. Vincent Boyer, in excusing the improperly performed weld stated in the March 15, 1984 Deposition of David T. Clohessy and Vincent S. Boyer at Philadelphia electric's 2300 Market Street building, at page 54, line 6, that a welder, following a specified procedure could in his "view" decide the weld's appropriateness. Perhaps that's why there were so many improperly performed welds. Further showing that deviation from written specified procedure was condoned all the way up to Mr. Boyer, Vice President for Nuclear Power for Philadelphia Electric, Mr. Boyer, in the effort to erase the careless example of improper welding, followed by improper inspection said the inspector could use his own "judgement" (see Deposition page 92, from line 13 through page 93 line 22), (see 76-06-01 Chronology Packet).

Enclosed is the Deposition showing evasion by Mr. Clohessy who appeared in place of Mr. Corcoran, whom we requested since he was head of the Quality Assurance group. AWPP asks that the Appeal Board Panel read the ^{entire} deposition which gives a picture different than the hearing testimony.

There is no doubt that the inspector, under ⁷⁶⁻⁰⁶⁻⁰¹ Failure to Weld Structural Steel per AWS Code, in using a broomstick was not following the specified code...and that the improperly performed weld resulted. At Deposition page 46, lines 8 to 12 Mr. Boyer defends the practice by rationalizing the AWS procedure, while stating what should be used, did not state what should not be used. Also related to the Broomstick Affair and Mr. Boyer's rationalizing efforts, at page 98, lines 7 to 10, AWPP asks Mr. Boyer to prove ^{that} all inaccessible welds were inspected by chipping away the concrete.



AIR and WATER
Pollution Patrol
BROAD AXE, PA.

(21)

AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

In the 2nd PID, page 100 at D-3, last paragraph, the Board refused to admit Professor Iverson, statistician of Swarthmore College, because of a time technicality that should be made admissible, nevertheless, considering a citizen group without any attorney and without attorneys and resources of the Applicant. Further the Board states "in any event [Professor Iverson's testimony] did not relate to any of AWPP's specified instances", and "was not sufficiently probative towards any matter relating to quality assurance of welding to be admitted as late testimony" (Tr.10, 428-4 35, 11,931(Brenner)). AWPP appeals that statistics are very much involved with any quality assurance and quality control program.

Dr. Iverson's testimony and/or cross examination could have aided the record in determining whether auditing of welds were done on sufficiently valid statistical sampling methods. Dr. Iverson's statistical analysis would have shown the shortcoming evidenced in the "deposition" of Mr. Boyer and Mr. Clohecy who used structured "judgement" in weld sampling, rather than random sampling and scientific statistical procedures. (see page 98 starting with line 17 through page 103, line 16).

On the basis of the statements in the forgoing deposition, it is very questionable as to whether proper sampling and auditing was used as the basis for public safety involved in hundreds of welding infractions.

The Appeal Board, keeping in mind the history of construction at nuclear plants, keeping in mind that anonymous reports of bad welding have come to the attention of the NRC and that even harrassment of NRC inspectors had only come to light at the Zimmer plant, and not by NRC inspectors. Also



AIR and WATER
Pollution Patrol
BROAD AXE, PA.

(22)

AWPP Appeal Re Contentions Denied by Board in 2nd PID continued:

keep in mind Applicant has the option of converting to coal or oil...just as the owners of Zimmer, in the interest of public safety, decided ^{by themselves} when the NRC did not adequately see the danger to the public.

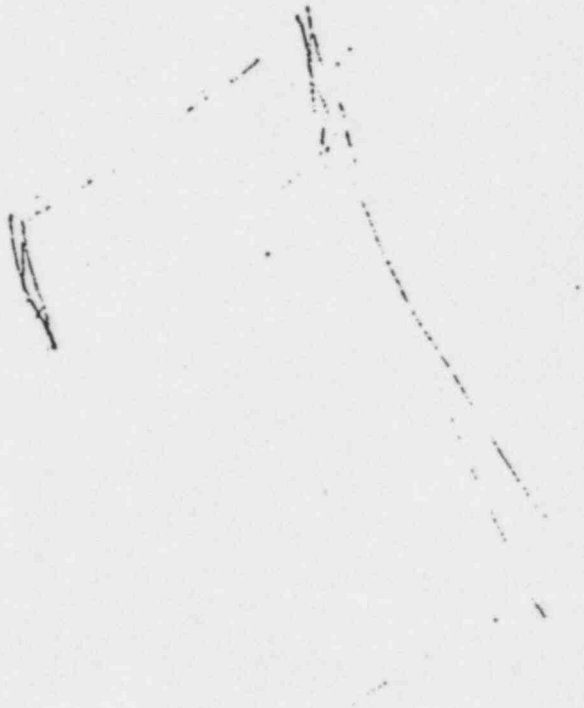
Respectfully submitted,
Air & Water Pollution Patrol
Frank R. Romano
Frank R. Romano, Chairman
61 Forest Ave.
Ambler, Pa. 19002

Submitted
with summary
of
interim
report

1 Item 1
2

ATTACHMENT 1

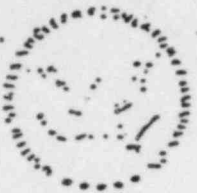
Letter from R. T. Carlson to V. S. Boyer, dated 11/10/76,
transmitting NRC IE Inspection Report No. 50-353/76-06



Item 1

Attachment I
Letter from Carlson
to Boyer dated

Inspection Report No. - 50-353
76-86
NRE IE



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
431 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19101

November 10, 1976

Philadelphia Electric Company
Attention: Mr. V. S. Boyer
Vice President
Engineering and Research
2301 Market Street
Philadelphia, Pennsylvania 19101

License No. CPR-107
Inspection No. 76-06
Docket No. 50-353

Gentlemen:

This refers to the inspection conducted by Mr. A. Toth of this office on October 16, 19-22, 1976 at the Liberick Generating Station of activities authorized by NRC License No. CPR-107 and to the discussions of our findings held by Mr. Toth with Mr. J. Corcoran of your staff at the conclusion of the inspection, and to a subsequent telephone discussion between Mr. Toth and Mr. Corcoran on November 2, 1976.

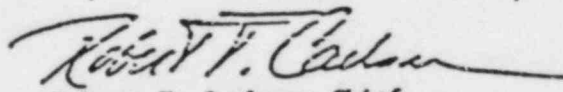
Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, measurements made by the inspector, and observations by the inspector.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These items of noncompliance have been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 10 days to this office to withhold such information from public disclosure. Any such application must be accompanied by an affidavit executed by the owner of the information, which identifies the document or part sought to be withheld, and which contains a statement of reasons which addresses with specificity the items which will be considered by the Commission as listed in subparagraph (5) (4) of Section 2.790. The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,



Robert T. Carlson, Chief
Reactor Construction and Engineering
Support Branch

Enclosures:

1. Appendix A, Notice of Violation
2. IE Inspection Report No. 50-353/76-06

21

Form 12
Jan 75 (Rev)

Items

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION I

IE Inspection Report No: 50-353/76-06
Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Docket No: 50-353
License No: CPPE-107
Priority: --
Category: A
Safeguards Group: --

Location: Limerick, Pennsylvania

Type of Licensee: SWR - 1065 302e (GE)

Type of Inspection: Routine, Unannounced

Dates of Inspection: October 16, 19-22, 1976

Dates of Previous Inspection: July 26-28, 1976

Reporting Inspector: *A. D. Toth*
A. D. Toth, Reactor Inspector

11-3-76
DATE

Accompanying Inspectors: None

DATE

DATE

DATE

Other Accompanying Personnel: None

DATE

Reviewed By: *B. Keinig*
B. S. Keinig, Acting Chief, Construction Projects Section
Reactor Construction and Engineering Support Branch

11/9/76
DATE

Item 3

License No. CPPR-197

APPENDIX A

NOTICE OF VIOLATION

Based on the results of the NRC inspection conducted on October 16, 19-22, 1976, it appears that certain of your activities were not conducted in full compliance with conditions of your NRC Facility License No. CPPR-107 as indicated below. These items are infractions.

- A. 10 CFR 50, Appendix B, Criterion IX requires in part, "Measures shall be established to assure that special processes, including welding, ...are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria and other special requirements."

Contrary to the above, the established measures were insufficient to assure that welding of structural steel on September 21, 1976 was accomplished in accordance with the applicable AWS-D.1.1. The fillet welds on structural steel beam connections at elevation 253, columns 23-C and 2, did not meet the quality requirements of the AWS Structural Welding Code.

Welding electrode holders were used attached to extension sticks which were not "designed or manufactured so as to enable qualified welders...to attain the results prescribed" in the AWS code, nor were procedures alternatively qualified to establish that acceptable weld quality could be attained with such sticks. Quality control surveillance inspections conducted and commented did not identify and effect correction of the condition.

- B. 10 CFR 50, Appendix B, Criterion X requires in part, "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions...shall be performed for each work operation where necessary to assure quality."

Contrary to the above, the inspection of activities during October 1976 did not verify conformance with Specification A-26 Revision 2 requirements for protection of machined surfaces during sandblasting and painting operations on the containment dome, and such protection was not maintained and the machined surfaces were inadvertently painted and possibly sandblasted.

Item 4,
5, + 6

ATTACHMENT 2

Letter from V. S. Boyer to J. P. O'Reilly, dated 12/15/76

Item 4

How was this done?

3. Items of Noncompliance

The following three items appeared to involve noncompliance with regulations of the Nuclear Regulatory Commission of conditions of the applicable NRC license. These items are infractions.

76-04-01:

Failure To Weld Structural Steel Per AWS Code

During observation of welding of structural steel at Area 13 elevation 253, the inspector observed that one steel floor beam passed close to column H at wall line 23. The clearance was such as to limit access to the required fillet welds of angle clips to the beam end and the end of wall No. 23. Interviews with craft and supervision personnel revealed the plan to perform the welding with the electrode holder fastened to the end of a broomstick; the personnel stated, and licensee and contractor CA and QC personnel later confirmed that this approach had been used on the similar limited access weld joints at elevation 253, columns F and H at wall 23.

The inspector determined that the weld procedure PI-A-L4 (Structural) Rev. C had not been qualified using electrode holder extensions, nor had the welder been qualified using such extensions. Although the applicable Code AWS D1-1-72 does not specifically address the use of electrode holder extensions with respect to procedure/welder qualifications, it does in Part 3.1.2 require that equipment be designed and manufactured so as to enable qualified welders to attain the results prescribed in the AWS Code. The inspector considered that an electrode holder attached to a stick did not meet this requirement unless proven satisfactory by qualification test for the six different weld configurations to be welded at the limited access joints. The licensee disagreed, and the inspector requested that provisions be made to permit his visual inspection of the limited access welds performed at elevation 253 on steel beam piece numbers 23237. An elevator hoist and an inspection mirror and light were made available to the inspector. The welds were found to not comply with the requirements of AWS-D-1-1 Section 3 "Workmanship," in that the welds were of unacceptable profile, contained excessive undercut, and were incomplete at the upper and lower edge of the angle clip (root pass complete, only). For the weld joints designated #3 in the record drawing of the in-process checklist, all inspection items had been checked-off by the Sechtel quality control inspector, including "Final Quality Verification." The QC inspection apparently did not comply with the requirements of AWS-D-1-1 Section 6 "Inspection." The inspector reviewed the following documentation relative to the above item:

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inspected
with
item 253
beam piece
no. 232 87

Q.

PHILADELPHIA ELECTRIC COMPANY

230: MARKET STREET
PHILADELPHIA, PA. 19101

215 441-4500

DEC 15 1976

V. S. BOYER
VICE-PRESIDENT

Mr. James P. O'Reilly, Director
United States Nuclear Regulatory Commission
Office of Inspection and Enforcement, Region I
631 Park Avenue
King of Prussia, Pa. 19106

Subject: USNRC ISI Letter dated November 10, 1976
Re: Site Inspection of October 16, 19-22, 1976
Inspection Report No. SO-353/76-06
Limerick Generating Station - Unit 2
File: QTA 1-2-2-1 (76-06)

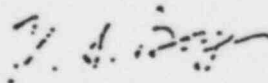
Dear Mr. O'Reilly:

We offer the following responses to the subject letter regarding items identified during the NRC visit to Limerick Generating Station - Unit 2 on October 16, 19-22, 1976 for inspection of construction activities authorized by NRC License No. CPPR-107.

- Attachment I - Response to Item A of Appendix A of subject letter.
- Attachment II - Response to Item B of Appendix A of subject letter.
- Attachment III - Response to Item C of Appendix A of subject letter.

The due date for this response was extended to December 15, 1976 in a telecon with your staff on December 2, 1976. Should you have any questions concerning these items, we would be pleased to discuss them with you.

Sincerely,



Attachments

Item 6

ATTACHMENT I

Response to Item A of Appendix A

"10 CFR 50, Appendix B, Criterion IX requires in part, "Measures shall be established to assure that special processes, including welding, ... are controlled and accomplished by qualified personnel using qualified procedure in accordance with applicable codes, standards, specifications, criteria and other special requirements."

Contrary to the above, the established measures were insufficient to assure that welding of structural steel on September 22, 1976 was accomplished in accordance with the applicable AWS-D.1.1. The fillet welds on structural steel beam connections at elevation 253, columns 23-G and H, did not meet the quality requirements of the AWS Structural Welding Code.

Welding electrode holders were used attached to extension sticks which were not "designed or manufactured so as to enable qualified welders ... to attain the results prescribed" in the AWS code, nor were procedures alternatively qualified to establish that acceptable weld quality could be attained with such sticks. Quality control surveillance inspections conducted and documented did not identify and effect correction of the condition."

"Although the applicable Code AWS D1-1-72 does not specifically address the use of electrode holder extensions with respect to procedure/welder qualifications, it does in Part 3.1.2 require that equipment be designed and manufactured so as to enable qualified welders to attain the results prescribed in the AWS Code."

Response

1. The following corrective measures have been taken:
 - a. The fillet welds on structural steel beam connections at elevation 253, columns 23-G and H, have been repaired.
 - b. The inspector, who originally accepted these two welds, is no longer employed by the contractor and a reinspection of all other work

353/76-06
2/1

performed by him has been accomplished, where accessible. Of approximately 100 welds re-inspected, two deficiencies were noted and corrective action has been taken.

2. Action taken to prevent recurrence:

- a. A training class was conducted October 25, 1976 for re-indoctrination and re-orientation in the various aspects of acceptance of completed work, reviewing of inspection criteria, and the responsibilities of welding inspectors. All QC and field welding personnel were required to attend this training class.
- b. A Project Control Memorandum, PCM-239, was issued prohibiting the use of unauthorized extensions.
- c. Effective December 16, 1976 all welds that require the use of weld extensions shall be identified and approved by the lead weld engineer.

357/ 76-06
LTI 7/2

- C. 10 CFR 50, Appendix E, Criterion V requires in part, "Activities affecting quality shall be prescribed by documented instructions... and shall be accomplished in accordance with these instructions..."

Contrary to the above, on October 20, 1976 the document control requirements of job rule JR-G-5 were not implemented for design decisions to place holes in the upper flange of structural steel beams at elevation 253 of Area 1B of the reactor building.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of
Philadelphia Electric Company
(Limerick Generating Station,
Units 1 and 2)

Docket Nos. 50-352
50-353

April 27, 1983

Item 7

APPLICANT'S ANSWER TO THE FURTHER PARTICULARIZATION
OF INTERVENORS' CONDITIONALLY ADMITTED CONTENTIONS

Introduction

In its "Memorandum and Order Continuing Informal Discovery, Providing for Further Specification of Conditionally Admitted Contentions and Noting Dismissal of ECNP" (February 10, 1983) ("Memorandum and Order"), the Atomic Safety and Licensing Board ("Licensing Board" or "Board") required, inter alia, that:

The intervenors shall particularize all conditionally admitted contentions, with the exception of emergency planning contentions, to the fullest extent practicable in light of the information supplied since the special prehearing conference. In judging the particularity of such contentions, and bases supplied in support of the particularized contentions, the Board will take into account the level of information presently available on Applicant's plans as they apply to a contention. Accordingly, intervenors should explain why they believe missing information prevents a contention from being particularized beyond what is set forth in the upcoming refiling of the

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See 46
10/11/83

the public." This contention is completely lacking in basis. Initially, the examples given fail to establish any pattern as alleged by intervenor Romano. There is no link among the deficiencies which were found by the Nuclear Regulatory Commission. A number of non-conformances are not unexpected for a project of this size. There is absolutely no showing that there is a pattern or link among these nonconformances nor that their number has been extraordinary. Nor has Mr. Romano demonstrated how these occurrences could "increase the risk of an accident during operation." Applicant submits that the Commission has not set up this Board to duplicate the Staff's role of providing oversight of construction of the facility. Applicant sees nothing which would in any way present a specific litigable issue regarding the overall quality assurance program at the Limerick Generating Station. In particular, with regard to subpart a, Applicant submits that this is based on a misunderstanding of the actions taken subsequent to the indicated Notice of Violation. As set forth in documents made available to Mr. Romano, all welds inspected by the particular inspector, not only accessible welds, were reexamined. Therefore, this subpart is lacking in foundation and is without basis.

Limerick
 Generating Station
 NRC
 File # 70-100-100
 10/1/70

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X

Intervenor Romano states that he is unable at this time to provide further specificity regarding his contention. Applicant submits that the enumerated reasons for not doing

so do not constitute good cause which would allow him to amend his contention in the future.

Intervenor alleges that the Applicant has failed to supply certain documents requested during informal discovery. He asserts that "certain inspection reports and related correspondence known to exist have not been provided (or not properly identified in the large volume of documents produced in Applicant's discovery room so that intervenor could locate them)." Applicant asserts that it has made every effort to respond fairly and completely to the discovery requests of Mr. Romano. The documents responsive to his requests were of a technical nature and it is possible that he, as a layman, does not understand their import. Mr. Romano has never specifically brought to Applicant's attention any particular documents he believes were not provided and should have been as responsive to his requests. To the extent possible, documents have been segregated in separate folders responsive to each specific request.

With regard to the second reason, Bechtel Power Corporation has stated that they would not make available the name and the employment records of an individual inspector "except in response to a subpoena or other lawful process." Applicant does not understand how the refusal to provide a single name and resume would prevent specification of these quality assurance contentions.

The third reason given is the loss in mail of one of intervenors two September 3, 1982 written discovery requests

to Applicant. While Mr. Romano states that other parties on the service list did receive the letter, Applicant has inquired of Staff counsel who stated that this letter was not received by the NRC Staff. In any event, a complete response to that letter was sent to Mr. Romano on April 6, 1983 and, on that date, documents responsive to that request were placed in the Applicant's document room.

Finally, Applicant sees no connection between any allegations of conditions at Three Mile Island or at the Midland site in relation to the construction of the Limerick Generating Station. Certainly, Mr. Romano does not demonstrate any such relationship.

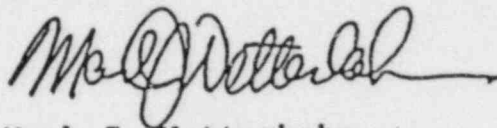
In response to the note contained in the section stating that Mr. Lewis "intends to discontinue his participation in the QA/QC contention. . .", Applicant intends to respond to any argument Mr. Lewis might present at the prehearing conference.

Conclusion

For the reasons discussed above, the conditionally admitted contentions should be denied and no further consideration need be given to them at this time by the Licensing Board.

Respectfully submitted,

CONNER & WETTERHAHN, P.C.

A handwritten signature in cursive script, appearing to read "Mark J. Wetterhahn", written in dark ink.

Mark J. Wetterhahn
Counsel for Applicant

April 27, 1983

LAW OFFICES
GONNER & WETTERHAHN, P.C.
1747 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20006

TROY D. GONNER, JR.
MARK J. WETTERHAHN
ROBERT N. RADZIK
INGRID M. JILSON
ARON A. MOORE, JR.
ROBERT M. PURL
OF COUNSEL
NOT ADMITTED IN D.C.

May 20, 1983

(202) 833-3600

CABLE ADDRESS: ATOKLAW

(1/18/83)

Judge Lawrence Brenner
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Judge Richard F. Cole
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Judge Peter A. Morris
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

In the Matter of
Philadelphia Electric Company
(Limerick Generating Station, Units 1 and 2)
Docket Nos. 50-352 and 50-353

Gentlemen:

This letter is being submitted in response to the Atomic Safety and Licensing Board's "Order Regarding Quality Assurance Documents" (May 13, 1983). Attachment 1 is a copy of NRC I&E Inspection Report No. 50-353/76-06, including the related Notice of Violation. Attachment 2 is Applicant's response thereto which is a letter from V. S. Boyer to J. P. O'Reilly dated December 15, 1976 with three attachments of which only the first is relevant to the matter raised by Mr. Romano. Attachment 3 is a December 29, 1976 letter from R. T. Carlson to V. S. Boyer acknowledging receipt of Mr. Boyer's December 15, 1976 letter. Counsel for the Staff has reviewed these three documents and agrees that they are accurate copies of the inspection report and letter sent by it and Mr. Boyer's letter received by it.

1 The remainder of the attachments hereto (Nos. 4 - 9)
2 are those documents which were made available to Mr. Romano
3 in response to his informal discovery request. In accor-
4 dance with my conversation with Mr. Romano yesterday, I am
5 sending to him by Federal Express a copy of this letter and
6 attachments such that he may make any presentation to the
7 Board that he desires regarding these documents. The
8 remainder of this letter discusses how the documents made
9 available to Mr. Romano demonstrate that all suspect welds,
10 rather than those which were merely accessible, were rein-
11 spected.

Attachment 4 is a Philadelphia Electric Company Quality Assurance Finding Report No. N-093 which was issued to the Bechtel Power Corporation (October 27, 1976). This Finding Report is the method by which, inter alia, NRC items of noncompliance are entered into the quality assurance system of the Philadelphia Electric Company for followup and disposition. Page 2 of the finding report notes the issuance of Nonconformance Report No. ("NCR") 1980 which was utilized by Bechtel to disposition the specific welds which were found to be deficient by the NRC inspector. Bechtel NCR No. 1980 is provided as Attachment 5.

PECO Quality Assurance Finding Report N-093 also requires a reinspection of all other accessible welds inspected by the particular Bechtel Quality Control Inspector who accepted the deficient welds described in the subject NRC Inspection Report and NCR No. 1980. Bechtel Field Inspection Reports (sometimes referred to as "QCG1-1 Reports" after the form utilized) which have control Nos. C-63-7 through C-63-19, issued from October 26, 1976 through November 8, 1976, (Attachment 6) document the reinspection and disposition of welds examined in 1976 in response to PECO finding report N-093 and which form the basis for Mr. Boyer's letter.

Bechtel Field Inspection Reports Control Nos. C-63-20 and C-63-21, both dated January 17, 1977, (Attachment 7) document additional reinspection of welds which were subsequently determined to have been possibly inspected by the particular Bechtel Quality Control Inspector involved. No unsatisfactory welds were found.

Bechtel Field Inspection Report Control No. C-63-22 dated April 4, 1977 (Attachment 8), documents the comprehensive review conducted to determine which of the welds inspected by the particular Bechtel Quality Control Inspector were not accessible as a result of being embedded in

Judge Lawrence Brenner
Judge Richard F. Cole
Judge Peter A. Morris
May 20, 1983
Page 3

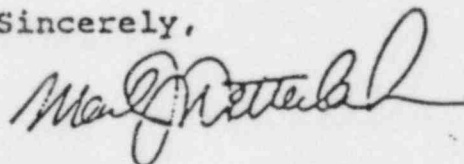
concrete and which of the welds not previously accessible, e.g., due to construction scaffolding, were then sufficiently accessible for inspection.

The results of this review are documented in Bechtel Field Inspection Report No. C-63-22. Page 8 of 8 is a summary correlation between the original Welding Inspection Plans in which the particular Quality Control Inspector participated and the Field Inspection Reports which document the reinspection of the affected welds. Bechtel Field Inspection Reports Control Nos. C-63-24 through C-63-32 and C-41A-493 dated July 1, 1977 through July 6, 1977 (Attachment 9) document reinspections not previously performed because of accessibility problems in 1976.

Field Inspection Reports Control Nos. C-63-30, C-63-31, C-63-32 and C-41A-493 describe reinspections of certain welds which were partially embedded in concrete. NCR-2710 which was generated as a result (not provided) demonstrates the acceptability of these welds. That nonconformance report documents that, for purposes of analysis, it was assumed that only the reinspected portions were sound and that the remaining embedded portion of the weld was nonexistent or failure of the entire weld was assumed. In all cases, the function of the structural member was not impaired.

I would note that Field Inspection Report Control No. C-41A-493 which is similar to the other nine in this category was inadvertently not provided to Mr. Romano during discovery. If the Board has any questions concerning this matter, please let me know.

Sincerely,



Mark J. Wetterhahn
Counsel for the Applicant

MJW:sdd
Enclosures

cc: Service List

Item 9

ATTACHMENT 4

Philadelphia Electric Company Quality Assurance
Finding Report No. N-093, dated 10/27/76

FINDING REPORT

RECEIVED
Limerick Units 1 & 2
DEC 10 1976 (14) PROJECT

10. CORRECTIVE ACTION TAKEN TO RESOLVE FINDING (USE AND REFERENCE, ADDITIONAL SHEETS IF REQUIRED)

1. Issuance of NCR 1980 to acknowledge the nonconforming condition and to acquire dispositioning to correct same.
2. A Reinspection of all other work performed by the particular inspector who accepted the welds in question was accomplished wherever accessible.

1. Disposition in NCR 1980 - 11/17/76.
 2. Various CC-GI Reports (C-65-7, C-65-7)
 3. Various training releases.

ACTION TAKEN BY W.B. O'P NAME DATE 11-22-76 ACTION VERIFIED BY [Signature] NAME DATE 11-27-76

11. CORRECTIVE ACTION TAKEN TO PREVENT RECURRENCE (USE AND REFERENCE, ADDITIONAL SHEETS AS REQUIRED)

A training class was held 10-25-76 for re-indoctrination and re-orientation in the various aspects of acceptance of completed work, reviewing or inspection criteria and ultimate responsibilities for weld inspections with all personnel in attendance from both the QC and field welding groups.

PCM DIRECTIVE - PCM 239 - PROHIBITS USE OF
 BLOWN STICK EXTENSIONS

ACTION TAKEN BY W.B. O'P NAME DATE 11-27-76 ACTION VERIFIED BY [Signature] NAME DATE NOV-30-1976

12. P.E. ACCEPTANCE OF CORRECTIVE ACTION

- RESOLVES FINDING
- UNACCEPTABLE (SEE SHEET 3 OF 3)
- USE "AS IS"
- TEMPORARY USE UNTIL RESOLUTION

Robert P. [Signature] S. [Signature] 12-15-76
 NAME DATE

FINDING REPORT

2. TYPE: AUDIT SURVEILLANCE ~~QA~~ NRC
 NCR CORRECTIVE ACTION REQ'D.
 Item of Noncompliance

1. NUMBER N-095
 2. Limerick Units 1 & 2
PROJECT
Bechtel Power Corp.
PRIME CONTRACTOR
 4. REFERENCES
 a) AWS D1.1-72 and 72 & 74 editions
DEC 10 1976
R. A. WOLFORD

3. ISSUED TO C.K. Soppet - Project Manager
 4. ORGANIZATION Bechtel Power Corporation
 5. THOSE CONTACTED T. Alton - K. Bishop
 6. 10 CFR 50, APPENDIX B CRITERIA IX

10. FINDING (USE AND REFERENCE ADDITIONAL SHEETS AS REQUIRED)

Two welds from the beam to the clip on beams 252B7 and 252B9 in unit 2 on Elev. 257 were both incomplete and unacceptable and were made with the aid of a broom stick handle attached to the stinger to reach the joint to be welded; which is contrary to AWS section 3:1.2.

Further, inspection surveillance records indicated that these beam connections were inspected.

11. DISCUSSION (USE AND REFERENCE ADDITIONAL SHEETS AS REQUIRED)

Bechtel issued NCR No. 1980 identifying the non-conforming condition.

12. RECOMMENDATION (USE AND REFERENCE ADDITIONAL SHEETS AS REQUIRED)

IDENTIFIED	<u>A. Both</u>	<u>Inspector</u>	<u>10/27/76</u>	<small>PE QA REFERENCE ONLY</small>
	<small>NAME</small>	<small>TITLE</small>	<small>DATE</small>	<small>N</small> <u>055</u> <small>SCR NO.</small> <u>206</u>
IDENTIFIED				<small>DISTRIBUTION</small>
ISSUED BY	<u>[Signature]</u>	<u>Site QA</u>	<u>10/29/76</u>	<u>A. Telier - TLC</u> <u>P.L. Saak</u> <u>PLS-6254</u>
	<small>NAME</small>	<small>TITLE</small>	<small>DATE</small>	

Item 10

P-2 to 35
As cascaded
LEA
1-33-35
Contentions

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD
BEFORE ADMINISTRATIVE JUDGES:
Lawrence Brenner, Chairman
Dr. Richard F. Cole
Dr. Peter A. Morris

In the Matter of
PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station,
Units 1 and 2)

Docket Nos. 50-352-OL
50-353-OL
LBP-83-39
July 26, 1983

SECOND SPECIAL PREHEARING CONFERENCE ORDER

The Board held a special prehearing conference in Philadelphia on May 9-11, 1983, to discuss proposed contentions and further scheduling of these proceedings. On May 16, 1983, we issued a "Memorandum and Order Confirming Schedules Established During Prehearing Conference". Our order today provides further rulings on the basis of that special prehearing conference, including rulings on the admissibility of contentions and the provision of specific dates for schedules which were previously described only in terms of triggering events.

In its filings prior to the special prehearing conference and at the conference itself, LEA indicated that a number of contentions were being dropped. These are Contentions I-1; I-2; I-5; I-6; I-13; I-16(c) - (j); I-17; I-18; I-19; I-20; I-21; I-22; I-24; I-25; I-27; I-28; I-29; I-32; I-33A, C, F, G, H, I & L; I-34; I-35; I-36; I-37; I-39; I-43;

welds were reinspected. Given Applicant's asserted follow-up, however, it may be that Applicant's letter of December 15, 1976, only intended to report on reinspections performed by that time. If so, it would certainly have been useful for Applicant to have indicated in that response that further inspections and analyses would be performed.

~~1/1~~ ~~2/2~~ ~~3/3~~ ~~4/4~~

The Bechtel inspection reports do not by themselves make clear that the welds listed are those which had been inspected by the same inspector cited in NRC Staff inspection report 76-06, or that the other statements in counsel's letter are accurate descriptions of the reports (attachments 4-9). In addition, we have no sworn affidavit attesting to the fact that the structural analyses, showing the assumed absence of the embedded welds as acceptable, were performed. (The details of these structural analyses are beyond the scope of the contention that QA/QC follow-up action to this Staff inspection report was improperly limited to reinspection of accessible welds.) However, it presently appears from counsel's representations of facts that there is no basis to admit even this part of AWPP's contention. We will not do so, subject to Applicant providing, as soon as practicable, appropriate affidavits of knowledgeable persons verifying the accuracy of the statements in its counsel's letter of May 20, 1983.

absence of proof

affidavit requested

Nothing in AWPP's letter to the Board of May 25, 1983, responding to Applicant's counsel's letter of May 20, 1983, remedies the fatal absence of bases for believing that Applicant limited its follow-up action to accessible welds.

AWPP seeks to conduct further discovery to better specify the contention. We have already permitted AWPP about a year to examine QA/QC documents and it has been unable to frame an admissible contention. Further discovery is unwarranted given AWPP's failure to specify with any reasonable particularity what it would seek to litigate within the broad area of QA/QC. The fact that AWPP has not received details of everything it might need to actually litigate a case at an evidentiary hearing does not excuse its failure now to state an admissible contention with reasonable specificity and basis.

For the reasons stated, this contention which had been conditionally admitted in an earlier form, subject to AWPP providing better specificity and basis, is rejected, subject to our acceptance of the affidavits to be filed by Applicant.

*contention
: 7/10/83
←*

DISCOVERY

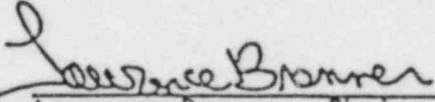
Discovery may begin immediately on contentions admitted by the Board in this order. All discovery requests must be served by October 14, 1983. Discovery is subject to the directions and time limits set forth in our Order of May 16, 1983.

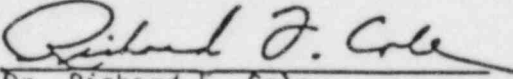
ORDER

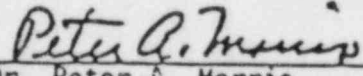
- 1) Contentions I-2, I-15 and I-33M are admitted for litigation. The litigation is to be within the scope described in this memorandum and order.
- 2) Contentions I-4, I-7, I-10, I-11, I-12, I-14, I-16a, I-16b, I-23, I-26, I-30, I-31, I-38, I-60, VI-1 (provided appropriate confirmatory affidavits are filed by Applicant), and the five new probabilistic risk assessment contentions are denied.
- 3) Discovery on the admitted contentions may start immediately and will follow our instructions set forth in this memorandum and order and our "Memorandum and Order Confirming Schedules Established During Prehearing Conference" (May 16, 1983).
- 4) Pursuant to 10 C.F.R. § 2.751a(d), parties normally may file objections (requests for reconsideration) to this Order with the Licensing Board within five days after service (ten days in the case of the Staff) of the Order. Parties may not file replies to the objections unless the Board so directs.

IT IS SO ORDERED.

ATOMIC SAFETY AND
LICENSING BOARD


Lawrence Brenner, Chairman
ADMINISTRATIVE JUDGE


Dr. Richard F. Cole
ADMINISTRATIVE JUDGE


Dr. Peter A. Morris
ADMINISTRATIVE JUDGE

Bethesda, Maryland
July 26, 1983

LAW OFFICES

GONNER & WETTERHAHN, P.C.

1747 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20066

ROY S. GONNER, JR.
ARK J. WETTERHAHN
ROBERT M. RADER
ROBERT M. GLENN
ROBERT A. MOORE, JR.
ROBERT W. PURL
OF COUNSEL
NOT ADMITTED IN D.C.

(202) 693-2800

CABLE ADDRESS: ATOMLAW

August 10, 1983

Item 11

Judge Lawrence Brenner
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Judge Richard F. Cole
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Judge Peter A. Morris
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

In the Matter of
Philadelphia Electric Company
(Limerick Generating Station, Units 1 and 2)
Docket Nos. 50-352 and 50-353

Gentlemen:

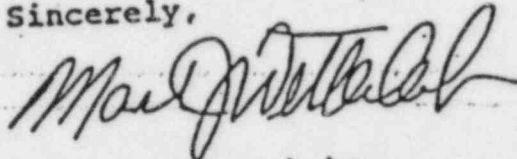
In the course of preparing to respond to the Atomic Safety and Licensing Board's request contained in its Second Special Prehearing Conference Order (LBP-83-39) dated July 26, 1983 at 38-39 for an affidavit to verify the statements contained in counsel's May 20, 1983 letter to the Licensing Board, it was learned that all inspections performed by the subject quality control inspector had not been identified and therefore not reinspected as previously believed.

The Applicant is reviewing the entire matter thoroughly, and will report to the Licensing Board as soon as possible. The affidavit of John S. Kemper, Vice President, Engineering and Research, setting forth the present status of the review is attached. We presently

Judge Lawrence Brenner
Judge Peter A. Morris
Judge Richard F. Cole
August 10, 1983
Page 2

expect to complete the review and report to the Board within
one month.

Sincerely,



Mark J. Wetterhahn
Counsel for the Applicant

MJW:sdd

cc: Service List

Enclosure

Item 12

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES:

Lawrence Brenner, Chairman
Dr. Richard F. Cole
Dr. Peter A. Morris

Contentions
welding
in order of
item 12

In the Matter of
PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station,
Units 1 and 2)

Docket Nos. 50-352-OL
50-353-OL

October 28, 1983

MEMORANDUM AND ORDER
CONFIRMING RULINGS MADE AT PREHEARING CONFERENCE

The Board hereby confirms the rulings made on the record of the prehearing conference held on October 17 and 18, 1983, at Phoenixville, Pennsylvania.

Admissibility of Contentions

LEA I-41 (U.S.I. A-17 - systems interactions)

LEA Contention I-41(a) was admitted as respecified in LEA's filing of September 28, 1983. The contention is set forth with reasonable bases and specificity and is not otherwise legally barred. Tr. 4809-13. Subsection (b) was withdrawn. Tr. 4807-08.

AWPP VI-1 (quality assurance)

AWPP Contention VI-1 was partially admitted on reconsideration by the Board. It was reworded by the Board as follows:

Applicant has failed to control performance of welding and inspection thereof in accordance with quality control and quality assurance procedures and requirements, and has failed to take proper and effective corrective and preventive actions when improper welding has been discovered.

Tr. 4912-14.

The Applicant and NRC Staff shall promptly make available, in the greater Philadelphia/King of Prussia area for inspection and copying by AWPP, all documents regarding welding pertinent to the Limerick facility. This includes documents in the possession of consultants, contractors or other agents utilized by the Applicant and Staff. The term "documents" includes, but is not limited to, reports of inspections and audits, whether internal or external, and related correspondence. Within thirty days of completion of discovery (including responses relevant to Contention VI-1), AWPP shall file a list of all instances of improprieties with regard to welding and/or inspection and correction thereof, which will form part of its case on the merits of the contention. For each instance listed, AWPP shall identify the particular portions of inspection reports or other documents which relate to such instance. AWPP shall also briefly state what it is about

17/12/76
1-23

"Findings" attached to
Inspection Report 50-352-76-01
dated 10/13/76.

Item 13

Contrary to the above, on September 15, 1976, concrete repair work above the personnel hatch of the containment drywell wall uncovered #9 and #14 parallel reinforcing steel tied together in direct contact at two places.

Following identification of this noncompliance by the inspector, the licensee site quality assurance organization immediately issued finding reports No. C-88 and C-89, which require evaluation and corrective action by the contractor. The licensee's response to a previous noncompliance regarding reinforcing steel clearances is documented in his August 27, 1975 letter to NRC.

c. 76-09-03:Infraction: Failure To Implement Nonconformance Control System For Loss of Concrete Mix Proportion Control

Criterion XV of Appendix B of 10 CFR 50 requires that "Non-conforming items shall be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures."

Criterion XVII requires that inspection and test records shall as a minimum identify the inspector or data recorder, the type of observation, the results, the acceptability and the action taken in connection with any deficiencies noted.

Bechtel Field Inspection Manual Procedure G-3 Rev. 6 requires that nonconformances shall be identified and reported in a controlled manner. It provides that use-as-is determinations require Project Engineer approval prior to implementation, and concurrence by the Project Field Quality Control Engineer. It requires documentation of engineering rationale where a use-as-is determination is made. It provides a standard Non-conformance Report for the mechanics of obtaining and documenting the above actions.

Contrary to the above, on September 16, 1976, the quality control inspection reports for June 23-24, 1976 concrete placement of the containment drywell walls did not reflect: (a) that concrete ingredient proportions were suspect for six truck loads of concrete, and may not have been within specifications; (b) that this situation had been reviewed by appropriate personnel; (c) that the concrete use-as-is decision was supported by engineering rationale; (d) that this matter was identified and reported in the controlled manner provided by the nonconformance report system.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Item-14

Before the Atomic Safety and Licensing Board

In the Matter of)
)
Philadelphia Electric Company) Docket Nos. 50-352
) 50-353
(Limerick Generating Station,)
Units 1 and 2))

AFFIDAVIT OF VINCENT S. BOYER
SENIOR VICE PRESIDENT, NUCLEAR POWER
PHILADELPHIA ELECTRIC COMPANY

Vincent S. Boyer being first duly sworn according to law
deposes and states:

1. My name is Vincent S. Boyer. I am Senior Vice President,
Nuclear Power, of the Philadelphia Electric Company (Company).
In this position, I have overall responsibility for the nuclear
power activities of the Company, including the Limerick Generating
Station.

2. On August 10, 1983, John S. Kemper, Vice President,
Engineering and Research, executed an affidavit dealing with
the Company's continuing investigation to assure that welds
which in 1976 were the responsibility of a certain Quality
Control inspector had been reinspected or otherwise dispositioned.
The affidavit reflected the fact that the Company had discovered,
contrary to its previous belief, that not all such welds had been
identified. This affidavit provides a progress report on the
ongoing investigation and discusses the findings to date.

3. The Board's Special Prehearing Conference Order, LBP-82-43A, 15 NRC 1423, 1520-21 (June 1, 1982), provided for informal discovery. Pursuant to that Order, on September 3, 1982 the Air and Water Pollution Patrol (AWPP) requested certain documents relating to NRC Inspection Report 76-06. This request was designated "Discovery 2 (Enclosure 2)." As it relates to this matter, the following documents were requested:

"(7) Provide record of all welds accepted by inspector who accepted welds at elevation 253, columns 23G and H, and provide record showing percentage of welds inspected by inspector in (6) above that were reinspected."

4. By letter dated January 11, 1983, the documents which had been identified as responsive to this request were made available to AWPP. These documents were later provided to the Board by counsel for the Company on May 20, 1983 pursuant to its Order Regarding Quality Assurance Documents (May 13, 1983). In order to understand the status of the Company's continuing investigation, it is necessary to discuss certain of the documents provided to AWPP and the Board. The same designation of attachments is used as was utilized in the May 20, 1983 letter.

5. A letter from V. S. Boyer to J. P. O'Reilly dated December 15, 1976, designated Attachment 2 stated that, with respect to the structural welds which were cited in NRC Inspection Report 76-06 the corrective action therein was as follows:

- "1. The following corrective measures have been taken:
 - a. The fillet welds on structural steel beam connections at elevation 253, columns 23-G and H, have been repaired.

b. The inspector, who originally accepted these two welds, is no longer employed by the contractor and a reinspection of all other work performed by him has been accomplished, where accessible. Of approximately 350 welds reinspected, two deficiencies were noted and corrective action has been taken."

6. The above-quoted statement was based upon a Bechtel response included as part of Attachment 4, Philadelphia Electric Company Quality Assurance Finding Report No. N-093 dated October 27, 1976. That response at Sheet 2 of 3 states that the following corrective action was taken to resolve the finding:

"A reinspection of all other work performed by the particular inspector who accepted the welds in question was accomplished wherever accessible."

That same page carries the handwritten notation that Bechtel Field Inspection Reports C-63-7 through C-63-19 (identified collectively as Attachment 6) provide the basis for the above quoted statement.

7. Additional welds which were the responsibility of the subject inspector were identified in early 1977. See Bechtel Field Inspection Reports Nos. C-63-20 and C-63-21, collectively identified as Attachment 7.

8. On April 5, 1977, Bechtel Field Inspection Report C-63-22 was initiated in order to redetermine the accessibility for inspection of the installed structural steel beams and columns previously identified in Attachments 6 and 7 to allow further reinspection and assure that all accessible welds were inspected. This Field Inspection Report is identified as Attachment 8.

9. Attachment 9 contains additional Bechtel Field Inspection Reports which were initiated to document further inspections which resulted from the preparation of Bechtel Field Inspection Report C-63-22 (Attachment 8).

10. Page 8 of 8 of Bechtel Field Inspection Report C-63-22 is a reconciliation of all Weld Inspection Plans that had been identified as the responsibility of the subject inspector against the Bechtel Field Inspection reports which indicated that such welds had been reinspected. It was thus concluded by Company personnel on the basis of the Bechtel reports that all welds which had been the responsibility of the subject inspector had been reinspected or analyzed, and a non-conformance report (NCR-2710 referenced in Attachment 9) dispositioned the inaccessible or deficient welds. *how?*

11. In preparing its response to the Licensing Board's Second Special Prehearing Conference Order, LBP-83-39, July 26, 1983, and to review independently the validity of the information contained in reports previously submitted to the Board and AWPP, the Company conducted a review of the original quality assurance welding records prepared during the term of employment of subject inspector at the facility. This review took approximately four weeks and 2500 manhours.

12. As a result of this extensive review, it was determined that the subject inspector had responsibility for a total of 709 safety related welds at the facility, of which 662 were structural welds and 47 were on components other than structural

steel, such as hangers (43), pipes (2), and electrical conduit supports (2). It was also determined that the review program which was initiated as a result of NRC Inspection Report 76-06 and completed by the end of July, 1977, resulted in 403 accessible welds having been reinspected with four minor deficiencies noted. Thirty-one welds remained inaccessible but were dispositioned. ?

13. The remaining 228 structural welds include 16 which are totally accessible and 212 which are partially or totally inaccessible. The 16 totally accessible welds have now been reinspected with one minor deficiency found. An engineering analysis is continuing to disposition the 212 partially or totally inaccessible welds and the one deficient accessible weld. This analysis is expected to be completed in approximately one month. The 47 non-structural welds are all totally accessible and have now been reinspected with 19 minor deficiencies found, all of which are hanger welds. Although these hanger weld deficiencies would be dispositioned normally as part of the final hanger completion and inspection program, they will instead be specially dispositioned within one month.

14. The Company's review of this matter is continuing. The program includes a further physical reinspection of a representative number of the welds for which the subject

*what is representative number?
How do you do it?
Who determines what is representative?*

inspector was responsible. There are initial indications, not yet confirmed, that some additional deficiencies may be present.

Vincent S. Boyer
Vincent S. Boyer

Sworn to me this 16th date of September, 1983

James A. Rouch
Notary Public
Notary Public, Philadelphia, Philadelphia Co.
My Commission Expires January 29, 1987

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Item 15

Before the Atomic Safety and Licensing Board

In the Matter of)
)
Philadelphia Electric Company)
)
(Limerick Generating Station,)
Units 1 and 2))

Oct 4/83
Docket Nos. 50-352-
50-353

APPLICANT'S SECOND INTERIM REPORT TO
LICENSING BOARD RELATING TO CONTENTION VI-1

Applicant is hereby forwarding to the Licensing Board and parties the attached Affidavit of Vincent S. Boyer, Senior Vice President, Nuclear Power, Philadelphia Electric Company dated September 29, 1983. This report updates Mr. Boyer's affidavit dated September 16, 1983 which was transmitted to the Board and parties by Applicant's Interim Report to the Licensing Board Relating to Contention VI-1 of the same date.

Respectfully submitted,

CONNER & WETTERHAHN, P.C.



Mark J. Wetterhahn
Counsel for Philadelphia
Electric Company

October 4, 1983

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)

Philadelphia Electric Company)

(Limerick Generating Station,)
Units 1 and 2))

Docket Nos. 50-352
50-353

AFFIDAVIT OF VINCENT S. BOYER
SENIOR VICE PRESIDENT, NUCLEAR POWER
PHILADELPHIA ELECTRIC COMPANY

Vincent S. Boyer being first duly sworn according to law
deposes and states:

1. On September 16, 1983, I executed an affidavit which was submitted to the Atomic Safety and Licensing Board dealing with the Company's review of welds which in 1976 were the responsibility of a certain Quality Control inspector. That affidavit indicated that the review was continuing. The purpose of this affidavit is to update and correct information previously reported.
2. To reflect the current status of the review, paragraphs 12 and 13 of the September 16, 1983 affidavit would be modified as set forth below with the reasons for these changes being discussed here-with and in subsequent paragraphs.

12' As a result of this extensive review, it was determined that the subject inspector had responsibility for a total of 1235 safety-related weld inspections at the facility, of which 654 were structural welds and 581 were on components other than

structural steel, such as hangers (577), pipes (2), and electrical conduit supports (2).

13' It was also determined that the review program which was initiated as a result of NRC Inspection Report 76-06 and completed by the end of July, 1977 had identified 426 structural welds, 423 being accessible and 3 inaccessible. The 423 accessible welds were reinspected with 6 minor deficiencies noted. Four of these were reworked, and 2 were found acceptable by engineering analysis. The 3 inaccessible welds were found by engineering analysis to be acceptable.

The extensive August, 1983 review identified 228 additional structural welds, 16 being totally accessible and 212 partially or totally inaccessible. The 16 totally accessible welds have now been reinspected with one minor deficiency found. This weld, together with the 212 partially or totally inaccessible welds, have been found by engineering analysis to be acceptable.

unacceptable explanation!

The non-structural welds, totalling 581, are all totally accessible. Of these, 577 represent hanger welds with 534 of the 577 being welds of hangers which were completely reinspected prior to August, 1983 as part of a separate hanger inspection program. The remaining 43 hanger welds for which final inspections had not yet been made, together with the 4 non-hanger welds, have now been reinspected. These hangers contained 19 minor deficiencies which would have normally been dispositioned as part of the final hanger completion and inspection program. They, instead, will be specially dispositioned within one week.

3. The number of structural welds previously reported was reduced from 662 to 654 due to the elimination of 8 welds which, in 1976, were classified as safety-related welds but due to their location and function, were subsequently reclassified as non-safety related welds.

4. In the interest of reporting all possible safety-related welds which could be considered to be the responsibility of the subject inspector, a number of welds which were initially examined by him, but which were subsequently reinspected for programmatic reasons beginning in late 1980, are being included. This explains the increase, noted above, in the number of safety-related non-structural welds from 47 to 581. In December, 1980 a general hanger reinspection program was initiated due to job conditions which resulted in additional hanger work being required after partial inspections had been performed. This reinspection program required a final QC inspection of all welds of all safety-related hangers regardless of their previous inspection status. The subject inspector had made inspections of 534 welds on partially completed hangers which had subsequently been subject to modification and completely reinspected prior to August, 1983. A current reinspection by Philadelphia Electric Company of 60 of these 534 completed hanger welds was performed with one minor deficiency being detected which has been found by engineering analysis to be acceptable.

5. The reported numbers relating to the review program of safety-related structural welds completed by the end of July, 1977 are changed due to the initial inclusion of non-safety grade welds in the inaccessible count and a corresponding error in the breakdown

of the number of accessible and inaccessible welds. The corrected count is that by the end of July, 1977, 423 accessible welds were reinspected (corrected from 403) and 3 inaccessible welds (corrected from 31) were identified and dispositioned satisfactorily where required.

6. The Company's physical reinspection program, as reported in paragraph 14 of the September 16, 1983 affidavit, involved further physical reinspection of 67 safety-related structural welds. Fifteen of these were from the 1983 reinspection group of 16 accessible welds discussed in paragraph 13 of the September 16, 1983 affidavit and 52 were from the 1976/77 reinspection group of 423 accessible welds. Six deficiencies were identified from the latter group, and these have been found by engineering analysis to be acceptable.

Of course!

Vincent S. Boyer
Vincent S. Boyer

Sworn to me this 29th date of SEPTEMBER, 1983

Patricia D. Scholl
Notary Public

PATRICIA D. SCHOLL
Notary Public, Philadelphia, Philadelphia Co.
My Commission Expires February 10, 1986

OCT 15 1976

Philadelphia Electric Company
Attention: Mr. V. S. Boyer
Vice President
Engineering and Research
2301 Market Street
Philadelphia, Pennsylvania 19101

License No. CPPR-106
Inspection No. 76-09
Docket No. 50-352

Gentlemen:

This refers to the inspection conducted by Mr. A. Toth of this office on September 11, 14-17, 27, 1976 at the Limerick Generating Station of activities authorized by NRC License No. CPPR-106 and to the discussions of our findings held by Mr. Toth with Mr. Corcoran of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These items of noncompliance have been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within thirty (30) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved.

With respect to Appendix A, we note that you have corrected Item No. 3, and therefore you need not address yourself to this matter in your response.

Item No. 2, shown in the Notice of Violation enclosed with this letter is a recurrent or uncorrected item. In your response to this letter please give this matter your particular attention.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must be accompanied by an affidavit executed by the owner of the information, which identifies the document or part sought to be withheld, and which contains a statement of reasons which addresses with specificity the items which will be considered by the Commission as listed in subparagraph (b)(4) of Section 2.790. The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Robert T. Carlson, Chief
Reactor Construction and Engineering
Support Branch

Enclosures:

1. Appendix A, Notice of Violation
2. IE Inspection Report No. 50-352/76-09

APPENDIX A

NOTICE OF VIOLATION

Based on the results of the NRC inspection conducted on September 11, 14-17, and 27, 1976, it appears that certain of your activities were not conducted in full compliance with the conditions of NRC Facility License CPPR-106 as indicated below. These items are infractions.

1. Criterion V of Appendix B of 10 CFR 50 requires that "activities affecting quality . . . shall be accomplished in accordance with these instructions, procedures, or drawings." Job specification P-303 requires "protective closures and seals shall be applied to component openings to maintain cleanliness prior to, during, and subsequent to erection, and . . . openings and pipe ends shall be sealed at all times except when they must be unsealed to carry out necessary fabrication operations."

Contrary to the above, the CRD penetrations were on September 27, 1976 observed to be uncovered and dust, particulates, and paint overspray were observed in the open socket weld ends.

2. Criterion V of Appendix B of 10 CFR 50 requires that "activities affecting quality . . . shall be accomplished in accordance with these instructions, procedures, or drawings." Job specification C-36 part 6.1.4 requires spacing of reinforcement in accordance with ACI-318 which specifies clear distance between bars not less than the nominal bar diameter nor 1 inch.

Contrary to the above, on September 15, 1976, parallel bars were in contact in the containment drywell wall above the airlock. The licensee initiated corrective action steps immediately.

3. Criterion XV of Appendix B of 10 CFR 50 requires that "Non-conforming items shall be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures." Bechtel Field Inspection Manual Procedure G-3 provides the mechanics of obtaining and documenting the above actions.

Contrary to the above, the quality control inspection reports for June 23-24, 1976 concrete placement of the containment drywell walls did not reflect that concrete ingredient proportions were suspect for six truckloads of concrete, nor was this matter identified and reported in the controlled manner provided by the nonconformance report system. The licensee promptly corrected this item by issuance of the required nonconformance report for action per the G-3 procedure.



AIR and WATER Pollution Patrol BROAD AXE, PA.

76-06-01 CHRONOLOGY PACKET

Here are facts backed by official documentation to prove there has been an apparant fraud by Philadelphia Electric (P.E.) involving crucial, safety related welding infractions at the Limerick nuclear reactor.

On November 10, 1976, reacting to an unannounced Nuclear Regulatory Commission (NRC) inspection report, Mr. Robert Carlson, of the NRC, wrote a letter (item 1) to P.E. Vice-President for Engineering and Research, Mr. Vincent Boyer. In that letter, Mr. Carlson notified Mr. Boyer of serious violations in mandatory construction procedures involving welding infractions in the on-going construction at the Limerick reactor. (See Inspection Report No. 50-353/76-06 (item 2); and in partucular "Notice of Violation", Appendix A, Part A (item 3) of Mr. Carlson's letter.

As discussed under Part A, the most glaring example of repeated welding violations had to do with the welding of safety-related items by non-qualified welders, using unapproved methods in contempt of specified procedures.

In this most glaring example, detailed on Page 5 of "Summary of Findings" under 76-06-01 (item 4), inspectors were recording as O.K. improperly performed welds. On learning of these repeated violations from workmen, the NRC inspector, over the objection of Philadelphia Electric, demanded an immediate inspection of questioned welds, and found them to be grossly deficient...but recorded as O.K. (described in item ~~4~~ above).

On December 15, 1976, Vincent Boyer responded to Mr. Carlson's November 19 notice of violations, by writing to Mr. James P.O. O'R-eilley, Director, NRC Office of Inspection and Enforcement, at Region 1, King of Prussia, Pa. (item 5). Mr. Boyer wrote, "the inspector involved is no longer employed by the contractor and a reinspection of all other work performed by him has been accomplished where accessible". (see p 1 & 2 of attachment 1 of Mr. Boyer's Dec. 15, 1976 letter (item 6) (underlining mine).

The Air & Water Pollution Patrol, a Pennsylvania incorporated environmental group is intervening before the NRC Atomic Safety and Licensing Board contending a high potential for accident exists at Limerick. This situation exists because P.E.'s Vice-President Boyer should have required inspection of all welds, both accessible and inaccessible, which now, at great risk, are embedded in concrete, and are no longer accessible for inspection.



AIR and WATER

Pollution Patrol

BROAD AXE, PA.

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50-353--Welding--76-06-01 (cont.)

And now, seven years later, in order to counter our contention, P.E. has suddenly changed its story. Mark Wetterhahn, P.E.'s counsel, in correspondence of April 27, 1983 (item 7), responding to questioning by the Licensing Board relating to the possible impact of safety at Limerick, emphatically stated, "all welds inspected by the particular inspector, not only accessible welds were re-examined" (underlining by P.E.). (See p. 43 & 46)

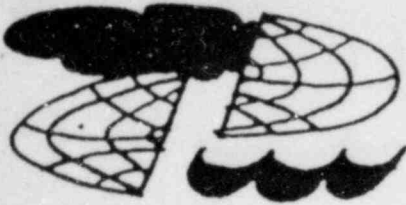
Apparantly to further remove any doubts caused by our insistent contention, a follow-up letter of May 20 (item 8) from P.E.'s Counsel to the licensing Board, contained various work records, in particular Finding Report No. N 093 (item 9), that was stated to be sent as absolute proof that all welds...accessible as well as inaccessible welds were inspected (see p.2 of May 20 letter, lines 7,8,9,10, 11). (Report No. N093 does not even discuss inaccessible welds.)

In an order dated July 26, 1983^{*}, the Atomic Safety and Licensing Board, in spite of ordering that Air & Water Pollution Patrol's welding contention be thrown out, requested affidavits from Philadelphia Electric to affirm their emphatic statements contined in their April 27 letter that "all welds...not only where accessible were re-examined" (*item 10)

Unable to substantiate, via affidavit, information which had previously and repeatedly been submitted as fact, Philadelphia Electric, through its Counsel Mark Wetterhahn's letter to the Atomic Safety and Licensing Board, dated August 19, 1983 (item 11) wrote:

In the course of preparing to respond to the Atomic Safety and Licensing Board's request contained in its Second Special Prehearing Order (LPB-83-39) dated July 26, 1983, at 38-39 for an affidavit to verify the statements contained in Counsel's May 20, 1983 letter to the Licensing Board, it was learned that all inspections performed by the subject quality control inspector had not been identified and, therefore, not re-inspected as previously believed. (underlining AWPP's)

As a result of Philadelphia Electric Counsel's August 10, 1983 letter above, and the Air & Water Pollution Patrol's request for re-consideration of its Quality Assurance Contention, identified as AWPP VI-1, the Atomic Safety and Licensing Board reversed its position through its October 28, 1983 "Memorandum and Order Confirming Rulings Made At Prehearing Conference". (item 12)



AIR and WATER

Pollution Patrol

BROAD AXE, PA.

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50-353--Welding--76-06-01 (cont.)

As can be seen on p5 of that Order, our Quality Assurance Contention was only "partially admitted" thus eliminating an extremely serious known concrete defect (item 13) in the drywell wall surrounding the primary containment enclosing the reactor core.

The partial contention, after eliminating concrete and other related infractions, however, was more than just a contention. It was a proven fact, as we made known to the Atomic Safety and Licensing Board, that (as the contention reads) "Applicant has failed to control performance of welding and performance there-of in accordance with Quality Control and Quality Assurance procedures and requirements, and has failed to take proper and corrective and preventive actions when improper welding has been discovered". Items 14 & 15 is a confused attempt, via "engineering analysis" to cover one such failure.

Just as at Zimmer, Air & Water Pollution Patrol has hundreds of documented infractions of specified procedures in concrete work and safety related welding.

Just as at Zimmer, it is already known there have been slipshod inspections of safety related work.

Just as at Zimmer, it is already known there have been falsification of records.

Just as at Zimmer, workmen have anonymously reported completed and inspected as O.K work which was later shown to be improperly done.

Just as at Zimmer, there was deliberate sabotage.

Just as at Zimmer, so-called qualified workers were found to be performing improper welds and performing welding procedures for which they were not qualified.

And just as at Zimmer, the Contractor, the Applicant, and inspectors by-passed safety codes and standards, ignored their own quality assurance program, and then covered up flagrant violations, through false statements.

And just as the Nuclear Regulatory Commission was part of the whole sordid Zimmer indictment of the nuclear establishment, that same Nuclear Regulatory Commission, during much the same time was meting out gentle responses to infractions at Limerick.

And this same federal agency, while watching Zimmer and Phila-



AIR and WATER
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BROAD AXE, PA.

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50-353--Welding--76-06-01 (cont.)

Philadelphia Electric (as stated in the Inquirer, Jan. 24, 1984) repeatedly refused to insist, on safe nuclear standards even when workers and others submitted evidence of contempt for specified procedures in safety related construction work. (We may have a Limerick work-we who might testify to this).

Philadelphia Electric, as ordered by the Atomic Safety and Licensing Board placed all discovery documents at 2300 Market St., in Philadelphia, but the time allotted to Air and Water Pollution Patrol to ferret out all the details was totally insufficient, so that we could not fully search out the welding affair.

We also requested meeting with the Applicant's attorney (Mark J. Wetterhahn) who said he would show AWPP how to do through the thousands and thousands of records to show the method of finding various peices of information. However, when we brought up certain needs, he told us to write him about it and he would get the information. He, thereby, did not show us how to go through the thousands and thousands of records and lost us precious time.