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July 31, 1985

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**APPEAL**

In the matter of

COMMONWEALTH EDISON COMPANY

ON THE EMERGENCY RELIEF DECISION

(Zion Station, LaSalle Station)

DD-85-10 of JULY 3, 1985

AND ALL LIGHT-WATER REACTORS

Docket No 50-295

**INTRODUCTION**

On January 9, 1985, the Petitioner filed an emergency relief petition with the Office of the Executive Director for Operations seeking an immediate postponement of all integral containment leak rate tests (ILRT) until the NRC approves a procedure for determining the weight coefficients, and a substantially improved procedure for verification thereof is implemented. Calculations supporting the petition prove that the present no-rule situation for determining the weight coefficients and the present faulty verification procedures may lead to underestimating abnormally high leak rates to the degree that such leak rates would appear to be within normal limits. The Petition cites the Zion, Unit 1 containment where the weight coefficients used in several tests were obviously incorrect which was confirmed by multiple verification test failures, as a containment where a conservative estimate of the true leak rate was in excess of legal limits.

On the same January 9, 1985, the Petitioner filed another emergency relief Petition with the same Office seeking an immediate withdrawal, debugging and revalidation of software used for LaSalle and Zion tests. The Petition was supported by calculations showing that the computer program either does not perform addition or it has a fraudulent option for doubling of weight coefficients.

My Petitions as stated in the NRC letter to me of February 20, 1985 have been considered by the NRC Staff. They were found to provide insufficient bases for emergency relief actions on the part of NRC. The NRC Decision has not been supported by any essential calculations, discussion or references. The FOIA search revealed that no calculations exist that would support the NRC allegations.

On March 6 and March 8, 1985, the Petitioner appealed the afore mentioned NRC Decisions on the ground that they contained no substance. In addition, the nullification of the NRR Director's Decision of March 15, 1984 on LaSalle tests was requested on the ground that this Decision was based on false statements.

On April 22, 1985 the NRR Director acknowledged the receipt of Petitioner's letters. The Director's letter combined both Appeals in one (original) Petition. The receipt of Petitioner's request to make null and void the Director's Decision of March 15, 1984 as based on false statements, has not

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been acknowledged. No immediate actions were taken.

In his letters of April 29 and 30, 1985, the Petitioner objected to (1) the Director's no-action policy, (2) combining two petitions in one, and (3) the refusal to acknowledge the receipt of Petitioner's request. No answer has been received by the Petitioner.

In the period from February through May 1985 several FOIA actions were taken by the Petitioner to obtain names, listings, validation acts of software used for leak rate test data processing that are subject to FOIA, and all the records related to the NRC Decision of February 20 denying the Petitioner's request. No such items exist, according to the NRC.

On May 21, 1985 the Petitioner referring to a letter from Mr. Carp, requested information on the authorship of the fraudulent LaSalle-Zion computer programs. No such information has been provided.

On July 3, 1985 the Director's Decision was made. This Decision is not based on any calculations or technical discussions. It ignores the Petitioner's arguments. It employs false arguments. It does not consider important matters. Finally, several statements known by the Director to be false are misrepresented as being correct.

We proceed now with the contents of the Director's Decision, the discussion thereof, and with the conclusions.

#### CONTENTS OF DIRECTOR'S DECISION.

1. In the "Introduction", a summary of the Petitioner's requests and a list of correspondence to be responded, is presented.

1.1 The Petitioner's request to void the Director's Decision of March 15, 1984 as based on false statements is not considered.

1.2. Letters of April 29-30 and of May 21 are not considered.

2. In the "Discussion" the Decision presents the NRR view on the history of the problem. Three issues of the Petition are outlined:

a) the wrong mass equation used by the industry;

b) the weight coefficients which may not be correct and which can be manipulated; and

c) "inadequacy in certain software".

A. The Decision presents no technical discussion (derivations, equations, calculations etc). It does not respond to the Petition. It repeats in abbreviated form the ridiculous statements of the contested previous Director's Decision of March 15, 1984 which was based on false statements. The only "improvement" is that the fraudulent LaSalle example (used as a "proof") has been abandoned in the present Decision.

B. No technical discussion is presented.

C. The NRC checked up the Volumetrics program output for Fermi, Unit 2 test and

"has not found it necessary to review the Volumetric software." The Decision admits that some data was thrown out (two out of nine readings) during the Zion test but alleges that the computer program in use (of a secret origin) was averaging correctly the good readings. Again, neither a software review nor calculations are exhibited.

The Decision discusses the verification tests on Zion. Basically, it tries to discredit the first verification test (which confirmed that the weight coefficients for Zion were wrong) in favor of the second verification test. No discussion of validity of Zion weight coefficients (which are obviously incorrect) has been presented, nor any conservative estimates of leak rate derived. No discussion of the significance of the verification test as performed by industry, is presented.

In the "Conclusion" the Director denies the Petitioner's request for relief.

#### DISCUSSION

##### 0. General comments.

0.1 The Decision has not discussed many very important issues raised by Petitioner: i) nullification of the Director's illegal Decision of March 15, 1985 which was based on false statements; ii) authorship of fraudulent Zion-LaSalle software; iii) verisimilitude of the wrong Zion weight coefficients; iv) conservative estimates of the true leak rate; v) significance of meaningless verification tests.

0.2 With the exception of a brief discussion on Zion verification test which has a resemblance of a technical discussion, the discussion is non-technical and is not supported by derivations, calculations etc.

0.3 The Decision does not address many pieces of evidence presented by the Petitioner: i) the correct gas equation used in conventional science and the wrong equation used by the industry; ii) the undeniable proof that any leak rate can be obtained from any data set using certain weight coefficients; iii) numerical examples proving that using the wrong equation or coefficients may lead to errors hundred times greater than allowable; iv) actual exceedance of the legal limit of 0.1 by some of the weight coefficients in LaSalle and Zion tests; v) the use of fraudulent examples; etc., etc.

0.4 The Decision knowingly uses false causal relationships for deception.

i) It is a general knowledge that a particular option in a computer program may or may not be executed in a particular run and, therefore, review of a listing is an integral part of validation process; the Decision falsely claims that because a computer program produced a correct result in a particular run, no review of the program is necessary to establish the presence or absence of fraudulent options (Volumetrix).

ii) Obviously, any equation (wrong or correct) always can be made correct by introducing appropriate changes. Thus, the wrong ANS equation can be converted into the correct conventional physics equation. The Decision falsely states that the original wrong ANS equation used in the industry is correct because "improvements may be made."

Illogical presentation is peculiar to the Decision.

0.5 Information relevant to the subject matter and in the possession of NRC

must be used in preparation of the Decision even if this would support the Petitioner's view. This constitutional principle is grossly violated by the NRC.

i) I have a positive proof that the NRC is in the possession of a listing of fraudulent Commonwealth Edison computer programs used in LaSalle-Zion tests. It should not take more than a few minutes to locate the fraudulent option subject of my Petition;

ii) The NRC is in the possession of many other computer programs which, according to the FOIA Office Director, are not available on FOIA requests.

#### 1. Comments on "Introduction"

The Decision does not acknowledge the receipt of the Petitioner's request for nullification of the Director's Decision of March 15, 1984 as based on false statement.

The Decision does not acknowledge the receipt of Petitioner's letter of April 29, 1985.

The Decision does not acknowledge the receipt of Petitioner's letter of May 21, 1985.

This is done deliberately to avoid discussion of these pieces of evidence.

#### 2. Comments on "Discussion."

2.0 The Decision presents the history of the problem as a smooth process of blending of various opinions to achieve "improvements to the regulations."

The reality is different. The NRC has been presented with the undeniable evidence that the present leak rate testing methodology is deficient to the degree that any leak rate value can be "legally" obtained from any set of the raw data. Accordingly, immediate actions have been requested to substantially improve the situation.

To the detriment of the American people, the NRR elected a policy of sabotage in this most important issue.

The weapons used by the NRC included:

i) refusal to provide technical answers (my 2-3 years old technical submittals are not yet answered);

ii) refusal to engage in a technical discussion (there was not a single meeting where I would be allowed to ask questions and receive answers);

iii) deception (forged meeting summaries, false statements, knowingly alogical statements);

iv) cover-up of bad tests (Slurry, LaSalle, Zion);

v) withholding of information (LaSalle, Zion);

vi) resistance to introduction of any improvement to the testing methodology, postponements and delays in preparation of regulatory documents; deadlines for the Reg. Guide were broken in 1982, 1983, 1984; what was presented in 1985 does not even remotely resemble a guide.

It appears that there is a conspiracy to prevent a meaningful review of all the past tests of which many are similar to the fraudulent Zion tests officially recognized as deficient.

It appears that there is a conspiracy to maintain the present highly deficient



testing practices to the detriment of the public safety.

2.A. On the issue of the wrong gas mass equation, the NRC, in its fraudulent numerical example exhibited in the illegal Decision of March 15, 1984, recognizes that there are two methods for mass calculation - the ANS method and the conventional physics method (the latter incorrectly called "Reytblatt's method").

2.A.1 The conventional physics equation (ideal gas law) has been known for more than two hundreds years and is generally recognized as one of the cornerstones of physics. The ANS equation was derived about 25 years ago. However, the derivation was erroneous (an elementary mistake was made that  $\int (1/f(x)) dx = 1/\int f(x) dx$ ). This error was exposed 15 years ago, and, independently, by the Petitioner, 12 years ago. Three years ago the NRC was presented with the truth. A year ago this was officially confirmed by NUREG-3549 (which mistakingly calls the ideal gas equation as "EXTRAN formulation"). I quote from Page 49, line 15 from the bottom: "...the EXTRAN formulation... is correct while the ANSI/ANS equation is not...". A pseudo-scientific nonsense that is presented in the Decision on the subject is indicative of the scientific level and integrity of those who prepared the nonsensical discussion.

2.A.2 Regrettably, the Decision repeats another pseudo-scientific nonsense of the March 15, 1984 Decision (of course, without presenting any technical proof) that "stabilizing" as done by the industry reduces the error due to the wrong equation to acceptable levels. The NRC has been supplied with the examples when "stabilizing" was perfect but errors still were two orders of magnitude larger than allowed. The preparers of the Decision are known to have been familiar with these examples. "Equilizing-stabilizing" has long been known as worthless scientifically but as a very effective cheating tool. It was used during the fraudulent Zion, Spring 1982, test "to help" the verification.

2.A.3. The statement that "such an improvement (return to the correct equation - Z.R.) would be more correct but would produce no meaningful change" is totally baseless (you provide no numerical estimates). This statement is wrong as proven by theoretical estimates, worked examples and real life examples of which the preparers of the Decision are known to be aware of. In fact, some of past tests reviewed by the NRC Consultant in 1982 and covered-up, showed errors in excess of legal limits. If the correct methodology were used, these containment systems would have to be repaired to provide the citizens with the degree of safety they are entitled to by law.

2.B. In a trivial remark it is stated that "a properly conducted test would not contain... use of unjustified weighting coefficients... and would subject licensees to NRC enforcement actions..." The Decision continues: "to ensure compliance...., NRC inspectors regularly observe the tests..." That is all!

Let me elaborate on the situation. No guidance on determining the weight coefficients is presented in the current methodology except that the coefficients should not exceed 0.1. As recognized by scholars in the field and has been shown in my Petition, they are extremely important for the leak rate measurement. The current practices are unsatisfactory; a good example is provided by Zion where these coefficients are obviously wrong, and by LaSalle where they exceed 0.1. The NRC inspectors are not supplied with the criteria that would help them to detect the wrong weight coefficients. No wonder that even such experienced NRC inspectors as Mesrs. Reyes and Maura did not recognize as deficient weighting coefficients at LaSalle and Zion.

It is a great deception to state that in the absence of a guiding document, an NRC inspector would be able to detect the wrong weighting coefficients. After such guidance is provided, as requested in my Petition, the testing can be adequately performed. It is noteworthy that the so-called "verification test" has very little to do with verification of weight coefficients. Therefore, the only means to stop fraudulent and/or inadequate testing would be a development of guidance on determining the weight coefficients.

2.C. As stated before, the Petitioner obtained the proof that the listing of the fraudulent computer program used in LaSalle-Zion tests is in the possession of the NRC. It appears, as stated in the Petitioner's letter to the NRR Director of May 21, 1985, that the developer of these programs was not Volumetrics as the NRC previously alleged and as it was assumed by the Petitioner. Since Commonwealth Edison, a company of Illinois, used these and similar programs, we will use an abbreviation "CE type program" for these programs.

2.C.1. As noted before, the "proof" that the Volumetrics program is not of the CE type, is fallacious. The Petitioner, however, does not claim at the present moment that the Volumetrics program is of the CE type, that is, fraudulent. The Petitioner insists that the listing of Volumetrics program be made public in frame of the general check-up of all the software used in the U.S.A. for the leak rate testing.

2.C.2 The Decision confirms the manipulation of the Zion test data which included "declaring 'out-of-service' of two out of nine sensors" and "averaging, 'correctly', the readings of the seven 'in-service' channels." This is a blatant lie. It is no wonder that neither calculations nor computer listing are exhibited to support the Decision claim.

What the program actually did, was throwing out two readings that would have affected the value of leak rate in a "bad" way, and doubling of two weighting coefficients. It should be noted that no legal basis for such actions exists. It is fraud in its purest form. The word "averaging" used in the Decision is deceptive. Immediate ban on all the CE type programs must be imposed regardless whether a doubling (or a similar) option has ever been executed.

2.C.3. The Decision does not dispute my Petition statement that Zion weighting coefficients are obviously incorrect. No attempt is made to estimate the error in weighting coefficients.

2.C.4. The Decision does not dispute my Petition discussion that the verification tests such as those performed at Zion are meaningless.

2.C.5. Instead, the Decision tries to discredit the first (failing) verification test in favor of the second ("passing") verification test. The declared goal of a verification test is to confirm the test assumptions, basically, the weight coefficients. This was not done. Instead, "the licensee did speculate on the cause.... It was thought that the verification test equipment may have been leaking.... A second verification test was then conducted using a larger imposed leak rate ( $1.1 L_t$  versus  $0.82 L_t$ )..." If the second verification test were performed at the same  $L_t$  as the first then the "licensee's speculation" at least would have some ground. With the second verification performed at 40% larger  $L_t$  the only conclusion that can be drawn out of these "verification" tests is that they fail at  $L_t = 0.82 L_t$  and pass at  $L_t$

=1.1 L<sub>4</sub>. Therefore, conservatively, the test assumptions should have been declared inadequate (which, certainly, could have been detected by observation).

Interestingly, several "verification" tests on Zion failed in the past and the test assumptions have never been questioned!

Importantly, the conservative estimates of the Zion leak rate have been obtained using conservative estimates of the weighting coefficients. These estimates are in excess of the legal limits.

The Zion weighting coefficients are obviously incorrect. Even the phony "verification" tests do not save the situation. Therefore, we must rely on the conservative estimates of leak rate. These clearly indicate that the necessary repairs must be done on the containment system with a subsequent adequate testing thereof.

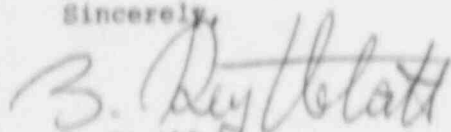
#### CONCLUSIONS

1. The Decision did not address all the requests of the Petition.
2. The Decision did not consider and respond to the substantial evidence presented in the Petition.
3. The Decision did not demonstrate any flaws in the Petition with the exception that the fraudulent LaSalle-Zion software turned out to have been developed not by Volumetrics but by an unidentified organization.
4. The Decision did not support its reasoning by such technical means as derivations, calculations, proofs etc.
5. In many instances the reasoning was intentionally deceptive.
6. Some essential evidence has been withheld by the NRC.

#### REQUESTS

1. For the reasons stated above I insist that your Decision be nullified in full.
2. I insist that my Petition be satisfied with the following change: instead of "Volumetrics software" use "CE type software."
3. I propose that a meeting be called (in Washington, D.C. or in Chicago, Il) where the preparers of the Decision would have an opportunity to present the proofs of their statements or any other materials supporting their views.

Sincerely,

  
Z. Reytblatt