

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:

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COMMONWEALTH EDISON COMPANY

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Docket No. 50-249

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(Dresden Station, Unit 3)

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AFFIDAVIT OF IRENE M. JOHNSON

I, Irene M. Johnson, being first duly sworn, depose and state as follows:

I received my degree in Engineering Science/Environmental Engineering from the Illinois Institute of Technology in May of 1979. I began my employment with Commonwealth Edison in July of 1979. My first assignment was in the Dresden and Quad Cities Project Engineering Group in the Station Nuclear Engineering Department where I worked until August of 1983. At that time, I was assigned to the Communication Services Department where I worked until July of 1986. In July of 1986, I began my assignment in the Nuclear Licensing Department. I am responsible for the licensing activities of Quad Cities Station and at the time that the AMP splices were being tested, I was also responsible for activities on Dresden Station.

As a Nuclear Licensing Administrator, I communicate routinely with the Nuclear Regulatory Commission (both NRR and the Region) on a regular basis. I am also responsible for follow-up and resolution of items uncovered in the course of an NRC inspection.

This affidavit is based upon my personal knowledge, conversations with individuals involved in the Dresden NRC Environmental Qualification (EQ) Inspection, as well as a review of the notes taken by Mr. J. Wojnarowski (former Dresden/Quad Cities Nuclear Licensing Administrator for Commonwealth Edison) during the normal course of business. Mr. Wojnarowski, now deceased, was initially involved in the NRC EQ inspection at Dresden and the notes he had kept reflect communications that he had with the NRC (both NRC Region III and NRR) over the time period of May 13, 1986 through November 3, 1986.

The purpose of this affidavit is to describe the basis for my belief that the failure of the December, 1986 test results to confirm the EQ of the AMP splices came as a surprise, not only to Commonwealth Edison Company, but also to knowledgeable and qualified personnel at NRC Region III. Although the NRC now asserts that Commonwealth Edison "clearly should have known" that the splices were not qualified, neither we nor, to my knowledge, the NRC believed that to be the case prior to December, 1986.

A second purpose of this affidavit is to explain that from the time the AMP splice issue was identified by the NRC Inspection Team during May 19 through 23, 1986, until the Dresden Unit 3 shutdown on December 6, 1986, the NRC, to my knowledge, never criticized or questioned the operation of Dresden Unit 3. Although the Notice of Violation indicated that Commonwealth Edison had operated Dresden Unit 3 for a period of time from May to December 1986 with unqualified equipment, it should be noted that Dresden Unit 3 was shutdown from October 28, 1985 until August 23, 1986 for the Recirculation Piping Replacement (RPR) Program.

It has been my experience and the experience of Commonwealth Edison's Nuclear Licensing Department, that NRC Region III is very aggressive in challenging continued operation of Commonwealth Edison's nuclear units when they have reason to believe that a safety issue exists. This is true in the environmental qualification area as in other cases. Furthermore, I have also found it to be the case that when there have been outstanding safety issues, the NRC has asked for justification from Commonwealth Edison prior to allowing the restart of a unit. Such justification was not sought prior to the return of Dresden Unit 3 to service after the NRC raised concerns regarding the splice

qualification in the EQ audit. I have a great deal of respect for the NRC personnel with whom I have dealt with in the course of this inspection. By the NRC's own treatment of this item, I infer that, at the time, the NRC also believed that this problem was one of documentation and not of serious safety significance. Mr. Wojnarowski's notes substantiate this conclusion.

In 1978, the NRC issued Inspection Report Nos. 50-254/78-24 and 50-265/78-25 for Commonwealth Edison's Quad Cities Station. This inspection included, among other things, an examination of the qualification of AMP butt splices in General Electric penetrations. Commonwealth Edison's basis for qualification of these items then was the same as later during the May, 1986 Dresden inspection. In 1978, the NRC Inspector concluded;

Electrical cable splices located in the drywell. The RIII Inspector determined that the "Butt Splices" were constructed using AMP preinsulated butt connectors (nylon window splices). Qualification of these butt splices was accomplished during the electrical penetration test and is documented in GE letter dated April 28, 1978 (Chron 8878). The Inspector determined that the results were satisfactory.

To my knowledge, the next time the NRC examined the qualification of AMP splices was in May, 1986, when Mr. J. Grossman, a contractor on the NRC Inspection Team, raised an issue regarding their use in electrical penetrations in Dresden Unit 3. The NRC inspectors concluded that Commonwealth Edison's files did not adequately establish qualification because of an alleged failure to demonstrate similarity between the tested and installed components (Inspection Report 50-237/86013 and 50-249/86015). The inspection report states:

The concern of the inspection team was that there is not documentation linking the splice tests by GE with those supplied with the F01 penetrations. CECO has indicated that information was obtained from GE indicating that nylon insulated butt splices were used in the test but his information was not included in the EQF. The documentation reviewed did not support qualification of the AMP splices in that similarity could not be established.

In response to this potential enforcement/unresolved item, Commonwealth Edison committed to enhance the GE penetration qualification package to include documentation which would demonstrate that the GE F01 test envelopes the AMP butt splices installed in the Dresden Unit 3 penetrations.

This commitment was documented in a June 12, 1986 letter from D.L. Farrar (then Director of Nuclear Licensing, Commonwealth Edison) to U. Potapovs (Office of Inspection and Enforcement, NRC). This letter also committed us to include information regarding periodic inspection recommendations to maintain the AMP splice qualifications.

A review of Mr. J. Wojnarowski's notes indicated that there were numerous telephone conversations with NRC Region III (A. Gautam, J. Muffet) and NRR personnel (U. Potapovs and A. Johnson), and NRC contractors involved in the audit (J. Grossman, Sandia National Laboratories) regarding Commonwealth Edison's commitment to pursue documentation and address and close out NRC concerns.

The NRC stated in its September 8, 1986 cover letter for Inspection Report 86-013/86-015:

We also acknowledge your corrective action commitments concerning the qualification of AMP nylon insulated butt splices. These will be reviewed during a future inspection.

In order to conclusively address concerns raised by the NRC during the course of the Dresden EQ inspection, Commonwealth Edison's Engineering Department elected to test the AMP F01 penetration splices, in addition to enhancing the splice similarity analyses. A total of three sets of tests were run during the time period of October 2 through December 5, 1986. The decision to test the splices was based on two factors -- first, Commonwealth Edison felt confident that the splices would pass a qualification test and secondly, testing was a convenient mechanism by which we could resolve the NRC concerns since there was other unrelated splice testing in progress. The NRC was notified of the results each of these tests following the review and acceptance of their results by the Engineering Department. I was personally involved in two of three notification calls to the Region.

A call was made to the Region following the completion of the first set of tests which ran from October 2 through October 7, 1986. I, along with Mr. R. Grams of the Commonwealth Edison Engineering Department, contacted Mr. A. Gautam, NRC Region III (EQ lead for Dresden Inspection). We indicated to Mr. Gautam that the tests showed some failures. It was also indicated that we believed the splices had failed as a result of mishandling by the contractor. Additionally, the Region was informed of our plans to proceed with the second batch of tests which would be run in the November timeframe.

At no time during the phone call was Commonwealth Edison asked to provide a Justification for Continued Operation (JCO) for the splices while the second series of tests were being run. Additionally, there were no concerns raised by NRC personnel regarding length of time it would take for completing the second set of tests, or the approach that Commonwealth Edison was taking in order to confirm qualification of the AMP splices.

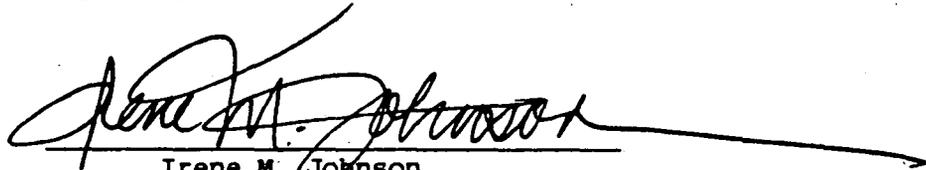
The second test was run during November 21 through 26, 1986. These tests provided results which were inconclusive. A decision was made on December 1, 1986 to enter into a third set of tests as questions were raised by Engineering regarding the appropriateness of the test profile used. Previous tests had been run using the LaSalle County Station LOCA profile. It was believed that the LaSalle profile was too conservative. As a result, a decision to run the third test using a Dresden/Quad Cities specific profile and the tested configuration. The results of the second test and decision to run a third test was communicated to the NRC by Messrs. M. Turbak, Assistant Director Nuclear Licensing (who at that time was the Operating Plant Licensing Director), and R. Grams.

On December 5, 1986, I participated in a phone call with Messrs. J. Harrison and A. Gautam of NRC Region III regarding the third set of AMP splice tests. These tests were performed on December 4 and 5, 1986. Following the evaluation of the results of the third test, Commonwealth Edison concluded that we were unable to confirm the original DOR AMP Splice test results. It was indicated that as a result of the latest tests that were performed on the AMP splices, Commonwealth Edison declared the splices inoperable and would shutdown Dresden Unit 3 and Quad Cities Unit 1 for splice repairs.

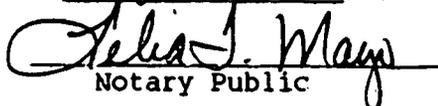
Dresden Unit 2 and Quad Cities Unit 1 were in refueling outages at that time. Shutdown was initiated on December 5, 1986 of Dresden Unit 3 and Quad Cities Unit 2 and was completed on December 6, 1986. Repairs were made to the splices over the period of time from December 6 through 9, 1986, inclusively. Dresden Unit 3 and Quad Cities Unit 1 were returned to service on December 10, 1988. Repairs were made to Quad Cities Unit 1 during its on-going refueling outage, while no additional repairs were deemed necessary on Dresden Unit 2.

On Saturday, December 6, 1986, I along with Messrs. D. Farrar and R. Grams came into our offices. The reason for this activity was ~~so Commonwealth Edison made on the AMP splices, shows how vigorously we attempted~~ to assist NRR in informing the rest of the industry of this potential EQ problem. During that time we responded to inquiries from other utilities regarding the applicability of our AMP splice test to their given situation. It is my understanding that , as a result of these communications, one other utility shutdown for splice repairs.

Commonwealth Edison regularly informed the NRC of the actions it was taking to address the EQ of AMP butt splices. The decision to test the splices was taken at Commonwealth Edison's discretion. The results of each series of tests were communicated to the NRC on a prompt basis. Once a decision was made that we no longer had confidence in the results of the original DOR tests, upon which qualification had been based, we promptly shutdown the units that were affected, where necessary, and made appropriate repairs to the affected units. As a result of our experiences in testing the AMP splices, the NRC became aware of a potential environmental qualification concern. Prior to this time, neither Commonwealth Edison nor the NRC had reason to believe that the splices could not pass a new qualification test. Because of our notification to the NRC, the agency was able to issue I.E. Notice 86-104 on December 16, 1986 to other Licensees. It is my belief that the corrective actions taken in regards to the NRC findings were prompt, thorough and extensive and merit consideration in assessing the appropriateness of mitigation of the proposed civil penalty in this instance.

  
 Irene M. Johnson  
 Nuclear Licensing Administrator

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SUBSCRIBED AND SWORN to  
 before me this 28<sup>th</sup> day  
 of June, 1988  
  
 Notary Public