UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of FLORIDA POWER AND LIGHT COMPANY (Turkey Point Nuclear Generating Units 3 & 4)	Docket Nos. 50-250 OLA-1 50-251 OLA-1 ASLBP No. 84-496-03 LA

AFFIDAVIT OF MARK J. PARVIN

I, Mark J. Parvin, being duly sworn, say as follows:

1. I am a Senior Engineer in the Reload Safeguards Analysis Group of the Nuclear Safety Department of the Nuclear Technology Division of the Westinghouse Electric Corporation. I am the Lead Engineer of my group. My business address is P.O. Box 355, Pittsburgh, Pennsylvania 15230. A summary of my professional qualifications and experience is attached hereto as Exhibit A, which is incorporated herein by reference. I have personal knowledge of the matters stated herein, and believe them to be true and correct. This Affidavit is offered in support of "Licensee's Motion For Summary Disposition of Intervenors' Contention (b)."

2. Intervenors' Contention (b) questions whether or not "a 2.2 percent reduction in re-flood rate" has been properly accounted for in analysis utilizing the Westinghouse Emergency Core Cooling System (ECCS) evaluation model with "BART-A1: Computer Code for the Best Estimate Analysis of Reflood transients" (BART computer code).

3. Nuclear Regulatory Commission (NRC) regulations require, in 10CFR 50.46, that ECCS analysis be performed with an acceptable evaluation model. Under this same section of the regulations, calculated fuel rod peak clad temperature (PCT) must not exceed 2200°F.

4. A conservative large break LOCA analysis for a break size which results in the highest calculated PCT has been performed for Turkey Point Unit Nos. 3 and 4 with an NRC approved modified version of the 1981 ECCS evaluation model. This model utilizes the NRC approved BART code rather than the NRC-approved Westinghouse Full Length Emergency Cooling Heat Transfer (FLECHT) correlation for calculating heat transfer parameters during the reflood portion of a LOCA when ECCS water is reflooding the core.

5. Analysis applicable to either a full core of low-parasitic (LOPAR) fuel or a full core of optimized fuel assembly (OFA) fuel results in a calculated PCT of 1972°F for a large break LOCA. However, in the current period of transition, when mixed cores of OFA and LOPAR fuel are employed at Turkey Point, the analysis results are slightly affected by the fact that the hydraulic resistance in OFA fuel is 4.5% higher than in LOPAR fuel. This causes steam flow velocity past the core midplane of the OFA fuel during reflood to be reduced by about 2.2% for the mixed core transition period, and only for that period. This results in approximately a 10°F increase in PCT over the calculated 1972°F for a homogeneous core, which is well within the 2200°F criterion imposed by 10CFR 50.46.

6. It is relevant to note that the BART computer code utilized in the evaluation model to perform calculations for Turkey Point did not include the BART grid spacer rewet model, thus, introducing an additional conservatism. Due to increased flow turbulence, the presence of fuel rod grid spacers in fuel bundles generally increases the local heat transfer in the vicinity of the spacers. The BART grid rewet model, which is now undergoing NRC review, is an improved version of the BART code and accounts for increased heat transfer due to the spacer grids.

7. It is also important that the "2.2% reduction in reflood rate" referred to in Contention (b), and discussed in documentation pertaining to Amendments 99 and 93 to Turkey Point operating licenses DPR-31 and DPR-41, respectively, not be confused with core flooding rates during reflood. The 2.2% reduction refers only to reflood hot assembly steam flow velocity. Thus, the Intervenors concern for the apparent sensitivity of fuel rod temperature to reflood core water flooding rates below one inch per second, due to NRC requirements established in Section I.D.5 of Appendix K to 10CFR Part 50, is not relevant.

8. At the request of the NRC Staff, an analysis has also been performed using the previously approved, unmodified version of the 1981 Westinghouse ECCS evaluation model, utilizing the FLECHT heat transfer correlation and not BART. This analysis indicated a PCT of 2130°F for a homogeneous core and worst case LOCA. Adding 10°F for the transition mixed core also results in a PCT of less than the 2200°F limit imposed by 10CFR 50.46.

9. In sum, required LOCA analyses, utilizing approved NRC evaluation models and properly taking into account reduced reflood steam flow rates in the OFA regions of the core, have been performed for Turkey Point yielding results consistent with applicable NRC criteria.

Further deponent sayeth not.

Mark D. Parvin

STATE OF PENNSYLVANIA)
) ss.
COUNTY OF ALLEGHENY)

Subscribed and sworn to before me this 3rd day of August, 1984.

My commission expires: 12-14-87

Lorraine M. Pjelica
NOTARY PUBLIC

LORRAINE M. NOTARY PUBLIC
MONROEVILLE ALLEGHENY COUNTY
MY COMMISS. EXPIRES DEC 14, 1987
Member, Pennsyl... Association of Notaries

EXHIBIT A

Professional Qualifications and Experience of

Mark J. Parvin

My name is Mark J. Parvin. My business address is P.O. Box 355, Pittsburgh, Pennsylvania 15230. I am employed by Westinghouse Electric Corporation ("Westinghouse").

I graduated from Michigan State University with a B.S. degree in Mechanical Engineering in June of 1977. While employed by Westinghouse, I graduated from Carnegie-Mellon University with a M.S. degree in Mechanical Engineering in May of 1981.

In July 1977, I joined Westinghouse in the Nuclear Safety Department of the Water Reactors Division as an Associate Engineer. My duties included the preparation of computer code input to perform analyses which evaluated the hydraulic loadings on Westinghouse reactor systems during a postulated loss-of-coolant accident.

In July 1979, I was promoted to Engineer. My additional responsibilities included analyzing emergency core cooling system performance for both large break and small break loss-of-coolant accidents, and preparing safety analysis reports for regulatory agencies and responding to related inquiries.

I was promoted to Senior Engineer B in August of 1981 and was assigned as Lead Engineer in April of 1982. I continued to perform hydraulic forces and emergency core cooling system loss-of-coolant accident analyses with lead engineer responsibility for planning, coordination and interfacing with other groups on assigned projects. I was promoted to Senior Engineer A in January 1984.

My present position in Reload Safeguards Analysis included the responsibility to perform the large break emergency core cooling system loss-of-coolant accident analysis for Turkey Point Units 3 and 4. This included preparation of computer code input data, evaluation of the results of the accident analysis, and preparation of the safety analysis reports for the Nuclear Regulatory Commission and responses to related inquiries.