UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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| In the Matter of | ) | |
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| ENTERGY NUCLEAR OPERATIONS, INC. | ) | Docket Nos. 50-247-LR/286-LR |
| | ) | |
| (Indian Point Nuclear Generating Units 2 and 3) | ) | |

AFFIDAVIT OF S. TINA GHOSH IN SUPPORT OF THE NRC STAFF'S OPPOSITION TO STATE OF NEW YORK MOTION TO REOPEN THE RECORD AND FOR RECONSIDERATION ON CONTENTION NYS-12C

I, S. Tina Ghosh, do hereby state as follows:

1. My name is S. Tina Ghosh. I am a senior reactor systems engineer employed by the U.S. Nuclear Regulatory Commission ("NRC"). I have been employed by the NRC for over nine years. My statement of qualifications has been previously submitted and is available as Exhibit ("Ex.") NRC000043.

2. Currently, my primary responsibility is to serve as the NRC's lead for the State of the Art Reactor Consequence Analyses's ("SOARCA") uncertainty analyses. Previously, as a reactor engineer in the Office of Nuclear Reactor Regulation's ("NRR") Division of Risk Assessment, one of my primary responsibilities was to review Severe Accident Mitigation Alternatives ("SAMA") analyses submitted in support of nuclear power plant license renewal applications, and to write the corresponding portions of the NRC's supplemental environmental impact statements. I also reviewed risk-informed licensing applications that used level 2 and level 3 PRA results (i.e., analyses of accidents that involve potential radioactive releases outside the reactor containment). My current branch in the Office of Research, the Accident Analysis Branch, was responsible for the MACCS2 analysis in the Spent Fuel Pool Study.

3. The Spent Fuel Pool Study focused on a single challenging accident scenario: a severe accident from an example spent-fuel pool initiated by an extreme seismic event, with an estimated frequency of occurrence of $10^{-7}$ per reactor year. The study calculated source terms (the amount of radioactive materials released) and total areas of contaminated land (where contamination exceeds protective action levels) for this challenging low-frequency scenario. Given the occurrence of the postulated accident, the calculated source terms and contaminated land areas were significantly larger than those calculated in typical reactor accident probabilistic risk assessments (PRAs). Because of the large magnitude of contaminated land areas, the team chose a TIMDEC of one year, which is longer than what has been chosen historically in most reactor accident PRAs. It is reasonable to choose a longer time (one year) than has been used historically for reactor PRAs, given the significantly larger source term and contaminated land areas calculated, compared to the spectrum projected from reactor PRAs.

4. A level 3 PRA for reactors considers a spectrum of initiating events and accident progressions. The projected consequences are typically binned according to salient features of the accident, such as whether or not the containment failed, and the timing and magnitude of releases if it did fail. Often the most probable reactor accidents are those which do not result in large areas of contaminated land, for example, in the bin of “no containment failure.” In contrast, the spent fuel pool study focused on a single low-probability scenario initiated by a very challenging initiating event. This single highly unlikely scenario was projected to cause comparatively large areas of land contamination due to the large releases outside of containment.

**Executed in Accord with 10 C.F.R. § 2.304(d)**
S. Tina Ghosh