November 5, 2004

The Honorable Sue W. Kelly
United States House of Representatives
Washington, D.C. 20515

Dear Congresswoman Kelly:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of September 17, 2004, regarding the electrical cable and raceway system at Indian Point Unit 2 in Buchanan, New York. In your letter, you cited concerns from Mr. William Lemanski, a former Entergy employee who publicly raised concerns about cable separation issues at Indian Point, and from Mr. David Lochbaum of the Union of Concerned Scientists. Based on these concerns, you requested an immediate and thorough inspection of the cable and raceway system at Indian Point 2.

NRC values input from concerned individuals. Earlier this year, when Mr. Lemanski raised concerns to the NRC about a computer-generated report of errors that was created during Entergy's attempt to upgrade the electrical cable and raceway system database at Indian Point 2, we recognized that the anomalies identified in the database conversion report could be indicative of deficiencies in the plant. As I mentioned in my previous letters to you on this subject, shortly after the cable separation issues were brought to our attention, NRC inspectors interviewed Mr. Lemanski and conducted onsite reviews to confirm that there were no immediate safety issues. Subsequently, a five-person inspection team, including two electrical specialists from our headquarters office, performed a detailed review of the issues associated with Entergy's conversion from the legacy database (WARS) to the upgraded database (ECRIS), and looked more broadly at cable separation at Indian Point. This review included examination of the database conversion error report, analysis of how the WARS and ECRIS databases were used, in-plant walkdowns of a sampling of cables, as well as examination and sampling of records from cable walkdowns completed by Entergy in the 1989 to 1995 time frame. The team selected specific issues with a greater potential to impact safety equipment for its independent review. To date, more than 600 hours of inspection related effort has been committed to the NRC's independent review of the issues.

Several discrepancies that were determined to be of very low safety significance were identified by the NRC's independent review and substantiated several of Mr. Lemanski's concerns. The inspectors found that the routing for cables was defined by qualified engineers and neither WARS nor ECRIS was capable of defining the routes for cables. NRC reviews determined that the anomalies identified in the data conversion error report were primarily the result of differences between the unique cable separation logic used at Indian Point 2 and the generic cable separation logic used by ECRIS. None of the anomalies from the data

conversion report selected for review by the inspectors were found to represent actual cable separation problems in the plant. During the in-plant walkdowns, the inspectors independently identified a few cases in which installed cables did not meet design criteria for cable separation. However, subsequent evaluations demonstrated that these discrepancies would not have affected redundant safety systems.

We examined Entergy's corrective action plans and found the approach adequate to address the existing deficiencies and enhance controls associated with the cable separation process. Walk-downs of the safety-related cables at Indian Point 2 were completed in 1995, with the exception of portions of the cable spreading room. As part of the Design Basis Initiative for Electrical Separation, Entergy is currently performing design reviews of all cables that have been modified or added since 1995 and plans to conduct walkdowns of safety-related cable trays to look for cable separation discrepancies. Entergy plans to complete these activities by the end of 2004. The NRC will continue to evaluate issues identified during Entergy's reviews. We also plan to conduct a focused follow-up inspection in early 2005 to assess the effectiveness of the corrective actions.

In my July 16, 2004, letter to you, I informed you that Region I had remained in contact with Mr. Lemanski and had informed him that, while of low safety significance, several of his concerns were substantiated. As you are aware, on August 18, 2004, NRC issued Inspection Report 50-247/2004009, which documented the results of our inspection of the cable separation issues at Indian Point 2. We understand that Mr. Lemanski and Mr. Lochbaum have questions about NRC's assessment of the cable separation issues at Indian Point 2. Representatives from NRC Region I have contacted Mr. Lemanski and offered to meet with him to further discuss our inspection findings and future actions. We have responded to the specific questions raised in the September 17, 2004, letter from Mr. Lochbaum regarding NRC Inspection Report 50-247/2004009. A copy of NRC's response to Mr. Lochbaum is enclosed for your information.

Again, I want to assure you that NRC is taking the concerns about cable separation at Indian Point seriously. Although our findings to date have been of very low safety significance, we will continue to carefully assess any issues that arise from the ongoing reviews and will take additional regulatory action if warranted. If you have further questions, please feel free to contact me.

Sincerely,

/RA/

Nils J. Diaz

Enclosure: As stated

November 5, 2004

Mr. David Lochbaum
Nuclear Safety Engineer
Union of Concerned Scientists
1707 H Street NW Suite 600
Washington, D.C. 20006-3919

Dear Mr. Lochbaum:

I am writing in response to your letter regarding electrical cable separation at Indian Point Unit 2 (IP2), dated September 17, 2004. Specifically, you raised questions regarding the Nuclear Regulatory Commission (NRC) Inspection Report 50-247/2004009, which documented our review of cable separation issues associated with a computer generated report of errors that was created during Entergy's attempt to upgrade the electrical cable and raceway system database.

As you are aware, the NRC performed an inspection of the specific issues associated with data anomalies generated from conversion of electrical cable and raceway computer databases and examined more broadly electrical cable separation at IP2. NRC inspectors conducted on-site and in-office reviews of the issues associated with Entergy's conversion from the legacy database (WARS) to the upgraded database (ECRIS). These reviews included independent assessment of some of the specific issues in the database conversion error report, in-plant walkdowns of a sampling of cables, and assessment of Entergy's reviews of the database conversion issues.

NRC assessment of the database conversion issues determined that the anomalies in the database conversion report represented inaccurate data in the WARS database and inconsistencies between the unique cable separation logic used at Indian Point 2 and the generic cable separation logic used by ECRIS. The inspectors determined that these conditions did not impact system operability for installed cables because Entergy's processes for cable routing were manual and did not directly rely on the WARS or ECRIS databases. None of the anomalies reviewed by the inspectors impacted the capability of plant equipment to perform its intended function or involved installed cables that did not meet cable separation criteria. However, the inspectors identified three violations of very low safety significance related to cable separation program documentation, implementation of design controls, and the timeliness of corrective actions associated with the database anomalies and design activities.

We note your concern that although no safety significant cable separation problems have been identified to date, more significant problems could exist. The NRC has closely reviewed design and engineering issues at Indian Point for several years, in particular since an in-depth 95003 inspection in January 2002 noted weaknesses in design basis documentation and corrective actions. This is one reason why the NRC took such an in-depth look at the concerns about the database conversion report which raised serious questions about in-plant cable installations. Again, the NRC's review concluded that the WARS and ECRIS databases were not relied on to select cable routing as part of the modification process; therefore, the deficiencies in the

databases did not result in adverse effects to the plant. The findings that were identified were appropriately considered for significance in accordance with our Reactor Oversight Process.

The inspectors confirmed that Entergy took appropriate actions to address the noncompliances and reviewed the licensee's planned corrective actions, which are primarily being implemented through the Design Basis Initiative (DBI) for Electrical Separation. Entergy is currently performing design reviews of all cables that have been modified or added since 1995 and plans to conduct walkdowns of all safety-related cable trays to look for cable separation discrepancies. Entergy plans to complete these activities by the end of 2004. The licensee's plans were found to be reasonable and commensurate with the safety significance of the problems identified. The NRC will continue to assess issues identified during Entergy's reviews and will evaluate whether additional regulatory action is warranted. Additionally, we plan to conduct a focused follow-up inspection in early 2005 to assess the effectiveness of the licensee's corrective actions.

In your letter, you provided comments regarding specific statements in NRC Inspection Report 50-247/2004009. This inspection report provided a detailed discussion of the specific issues reviewed by the NRC, as well as an assessment of the inspection findings. The NRC's responses to these comments are provided in the enclosure to this letter.

Thank you for your continued interest in nuclear safety.

Sincerely,

/RA/ Original Signed by A. Randolph Blough for

Brian E. Holian, Deputy Director
Division of Reactor Projects

Enclosure: As stated

NRC Response to Comments
Regarding NRC Inspection Report 50-247/2004009

This document paraphrases the specific comments on the inspection report documenting the results of NRC reviews of cable separation issues at Indian Point 2.

1. Comment: Identification of cable separation violations demonstrates that Indian Point has never been in compliance with Federal safety regulations.

   NRC Response: This focused inspection identified violations related to: 1) cable separation program documentation; 2) implementation of design controls; and 3) the timeliness of corrective actions associated with the database anomalies, training, and documentation discrepancies. None of the identified problems impacted the capability of plant equipment to perform its intended function. In the few cases that involved configuration control of installed cables, subsequent evaluations demonstrated that these issues did not result in single failure vulnerabilities. With respect to the database conversion error report, the inspectors found that, historically, Design Engineering did not take ownership and commit resources to resolve the anomalies. As a result, timely corrective actions were not taken to address some issues.

   Our recent inspections confirmed that corrective actions were taken or are planned to address the electrical cable and raceway database anomalies, as well as the specific noncompliances. The inspectors determined that Entergy's planned corrective actions are appropriate and commensurate with the safety significance of the issues. NRC will continue to assess the results of Entergy's reviews and will evaluate whether additional regulatory action is warranted.

2. Comment: The findings in the inspection report strongly suggest that Entergy made a bad situation at Indian Point worse during the conversion from the WARS database to the ECRIS database.

   NRC Response: As discussed in NRC Inspection Report 50-247/2004002, Entergy was aware that conversion from WARS to ECRIS would result in data anomalies. The database conversion generated a large quantity of anomalies due to inaccurate data contained in WARS and inconsistencies between the unique cable separation logic used at Indian Point 2 and the generic logic used by ECRIS. However, because Entergy's processes for cable routing were manual and did not directly rely on the WARS or ECRIS databases, these problems did not result in adverse effects to the plant.

3. Comment: Cables routed using WARS, ECRIS, and/or the drawings developed from WARS/ECRIS may violate the cable separation criteria unless independently verified by field walkdowns.

   NRC Response: As discussed in the inspection report, neither WARS nor ECRIS could define cable routes. The cable routes were manually determined by engineers and designers using design specifications and drawings combined with plant walkdowns.

These routes were manually entered into WARS/ECRIS, and the computer program was used to print hard copies of the routing. The routing schedules became an approved design document following review, approval and sign off of the hard copy schedules. WARS and ECRIS were used as tools during the process to provide an additional check for separation violations based on the detailed routing information that was entered manually. The NRC inspectors recognized that use of a bad "tool" could lead to problems during the implementation of the manual cable routing by licensee engineers. Their reviews looked at how the WARS and ECRIS software was used in design and modification activities.

4.a. Comment: The statement on page 14 in the NRC inspection report indicating that WARS/ECRIS are not relied upon in the manual cable routing process appears to be false. If WARS and ECRIS are the only tools for generating cable schedules, then WARS and/or ECRIS would have to be relied on in the manual cable routing process.

NRC Response: When we used the term "generate" a cable schedule we were referring to the use of WARS/ECRIS to print a hard copy of the cable route which had been manually entered into the system. As stated above, WARS and ECRIS could not automatically generate a cable route and were only used to document the manually determined route and as a tool to provide an additional check for any separation violations for the route.

4.b. Comment: The statements in the inspection report regarding training on WARS appear to be an attempt to gloss over a safety problem.

NRC Response: As discussed above, WARS was not used to define cable routes. Although the inspectors' reviews identified issues with the training provided to engineers on WARS, the inspection did not reveal any training deficiencies that resulted in improper plant installations or any resultant safety problems.