



## NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

July 23, 2003

Mr. Farouk Eltawila, Director  
Division of Systems Analysis and Regulatory Effectiveness  
Office of Nuclear Regulatory Research  
U.S. Nuclear Regulatory Commission  
Two White Flint North  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Dear Mr. Eltawila:

Thank you for giving the North American Electric Reliability Council (NERC) the opportunity to review and provide comments on your report, "Operating Experience Assessment – Effects of Grid Events on Nuclear Power Plant Performance," April 29, 2003.

To answer directly the questions posed in your May 16, 2003 letter, NERC believes that the approach taken in the report is reasonable and that the conclusions reached are appropriate. As far as additional sources of "data" are concerned, we think the best source of useful information on grid performance relative to NPPs continues to be face-to-face discussions with and among grid operators, NPP licensees, and industry groups such as NERC.

NERC is pleased to see that the Commission recognizes in its report the important interdependencies between the operation of the grid and the safe and reliable operation of NPPs. It is essential that the Commission continue to work with licensees, grid operators, and industry organizations, including NERC, to improve this understanding and to facilitate more joint analyses of actual and potential grid operating conditions on NPPs and vice versa. This is especially true in the area of grid voltage support and the impact of voltage degradations on NPPs. In some cases, grid operators may not be fully aware of the more restrictive bus voltage limits at NPPs, the condition of the grid before the NPP takes its EDGs out of service for maintenance, or the pre-trip voltages necessary for safe shutdown of the NPPs. These were evident from the discussion in the report. In addition, the 1999 events in PJM, which are described on page 26 of your report indicate that the Commission is well aware of the Transmission Control Agreements in place between the California Independent System Operator and nuclear licensees in that area. A key area for the Commission to explore is whether comparable agreements are in place in other parts of the country between grid operators and NPPs, and if grid operators are aware of the more restrictive grid voltage limits that NPPs require.

Mr. Farouk Eltawila  
U.S. Nuclear Regulatory Commission  
July 23, 2003

Another point in your report that deserves mention is the identified loss of 4,340 Mvar of generator reactive capability that accompanied the 1,200 MW increase in electric output. In some cases, this loss of reactive capability could have a significant effect on the ability of the grid operator to maintain adequate voltages on the grid. An increase in real power output at NPPs is certainly desirable, but not if it comes at the expense of increased risk of inadequate grid voltages. Some further investigation of this issue seems warranted by licensees and their respective grid operators.

There is no doubt that the interconnected grids, and the generators connected to them, which serve North America are being operated and used somewhat differently today than when the electricity industry was vertically integrated. However, there is no reason this change in industry structure should adversely affect either the reliability of the grid or the safe and reliable operation of NPPs. The events that were cited and analyzed in your report provide a wealth of information and "lessons learned" that should be taken seriously and acted upon by the Commission, licensees, and grid operators, both individually and collectively.

Please let me know if you have any questions about these comments, or if NERC can assist the Commission in any way in pursuing the "lessons learned" identified in your report. I have already spoken with Bill Raughley of your staff regarding several minor technical comments on the report, which I have not repeated here.

Sincerely,

A handwritten signature in black ink, appearing to read "D. R. Nevius", with a stylized flourish at the end.

David R. Nevius  
Senior Vice President

cc: William S. Raughley