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2130-05-20108
June 10, 2005

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Oyster Creek Nuclear generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Response to Request for Additional Information Concerning Technical Specification Change Request on Upgrade of 69kV Offsite Power Transmission Line

References:
1) Electronic mail from P. Tam – USNRC, to D. Robillard – AmerGen, dated April 26, 2005, regarding " Upgrade of 69kV Offsite Power Transmission Line" (ML051300100).

2) AmerGen letter 2130-05-20022, dated March 25, 2005, Technical Specification Change Request No. 332 – Upgrade of 69kV Offsite Power Transmission Line

This letter provides additional information as requested by the NRC staff in Reference 1. The request for information is in regards to AmerGen Energy Company's Technical Specification Change Request (TSCR) No. 332 (Reference 2) to modify Technical Specification 3.7, Auxiliary Electric Power to reflect an upgrade in the voltage from 69 Kilovolts to 230 Kilovolts for one of the plant's offsite power transmission lines. This supplemental letter provides information in response to NRC request for additional information (RAI) as discussed in a conference call on June 2, 2005. The additional information is provided in Enclosure 1.

There are no additional regulatory commitments contained in this letter.

We are notifying the State of New Jersey of this supplement to the application for changes to the Technical Specifications by transmitting a copy of this letter and its attachment to the designated State Official.

If any additional information is needed, please contact Dave Robillard at (610) 765-5952.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

06/10/05
Executed On

Pamela B. Cowan
Director, Licensing & Regulatory Affairs
AmerGen Energy Company, LLC

Enclosures

D074 cc: S. J. Collins, Administrator, USNRC Region 1
P.S. Tam, USNRC Senior Project Manager, Oyster Creek
R. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 05028

ENCLOSURE 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

OYSTER CREEK NUCLEAR GENERATING STATION

TECHNICAL SPECIFICATION CHANGE REQUEST 332

REGARDING UPGRADE OF 69KV OFFSITE POWER TRANSMISSION LINE

Response to NRC Request for Additional Information

1. NRC Request

Is the line capable of supplying power at the required voltage to all the plant systems required for normal shutdown and emergency core cooling equipments? Explain the analysis conducted.

Response

Analysis Procedure

The analysis addressed load flow/voltage impacts. Base cases were developed to represent the system without the project and then new cases were developed from those base cases with the project. Each of the cases with the project was tested. The cases without the project were used to quantify the impact, but the main emphasis was to show that the statements in the FSAR/Technical Specifications for the plant were not violated by the project.

Load Flow/Voltage Impact

The base cases used as the starting point for this analysis were the cases developed for the latest degraded grid analysis for Oyster Creek that represented the predicted summer conditions. The base reactive output of the plant, the base voltages, and the voltages for the various stages after the trip of the plant were determined.

Then in each of the cases, the Conectiv 230 kV project was added and the voltages and reactive output with the project were determined. This analysis shows that the 230 kV project increases the voltage supplied to the plant load when the plant trips offline and reduces the base reactive requirements of the Oyster Creek plant for the same PJM system conditions.

Local System Blackout Restoration

Another condition tested was the voltage at the plant load when the system is being restored from a localized blackout at Oyster Creek. The test involves the assumption that the Oyster Creek 230 kV and 34.5 kV transmission system has gone black, the plant is therefore off-line and then a single transmission path is restored to provide the plant load. The three tested cases are:

1) Serving this load from the upgraded 230kV line,
2) Serving this load from the Q121 line, and
3) Serving this load from the Z52 line.

The project results in a slight improvement in the voltage supply under the upgraded 230kV line condition.

Degraded Grid Impacts

A sampling of the degraded grid cases were tested, with and without the project, to identify the impact. These samples included the more severe cases that were seen in prior testing. The degraded grid analysis involves the outage of a single element on the grid, followed by system adjustments (those that could be made in less than 15-30 minutes), then followed by the outage of the Oyster Creek plant. The plant load switched onto the 34.5 kV in this test represents the highest load that would be expected for the plant during a Loss of Coolant Accident (LOCA) event.

The bounding or worst-case configuration is where either one of the 230/34.5kV transformers in the Oyster Creek substation is failed, along with either one of the vital 4kV plant busses. This configuration places maximum loading on the remaining 230/34.5kV transformers and maximum loading on the remaining vital 4kV bus. This plant configuration, combined with the single contingency grid scenario, allowing 15 minutes for system adjustments, followed by the trip of Oyster Creek, comprises the most severe case of voltage drop. This scenario includes the worst-case plant loading based on seasonal considerations and transferring both safety and auxiliary loads.

For the bounding case of the loss of one of the 230/34.5 kV banks, the impact of the Conectiv project is negligible. The voltages for the outages on the 500 kV system where the project would allow higher throughflow across Oyster Creek do result in lower degraded grid voltages at Oyster Creek. For these 500 kV outages, the voltages are still above those of the bounding case. Therefore, the Conectiv 230 kV project would not cause the degraded grid voltage to violate the plant requirements.

First Energy is the transmission system owner and operator for the Oyster Creek substation and provides connection services to the transmission grid. AmerGen and First Energy maintain an interconnection agreement that describes services and responsibilities of both parties. The agreement includes transmission system operation, plant offsite power supply requirements and voltage constraints. Also included in the agreement is an annual Voltage Evaluation for single contingency at the Oyster Creek 230kV and 34.5kV substations, performed by First Energy or by PJM on First Energy's behalf, and provided to Oyster Creek on an annual basis.

2. NRC Request

What is the expected reliability and availability of this line with respect to the reliability of the existing line?

Response

Conectiv has performed studies to evaluate the adequacy of the supply to the coastal area in Atlantic Electric. These studies evaluated the 230kV, 138kV, and 69kV systems through 2007. Numerous 138kV and 69kV voltage and thermal problems were identified through

2007. Conectiv developed two options to resolve the local problems through 2007. One option was to replace the Sands Point - Cedar and the #1 Lewis - Motts Farm - Cedar 69kV lines with a 230kV circuit. This plan was found to be superior in terms of how far into the future the plan will accommodate load growth.

PJM evaluated both Conectiv reinforcement options from the perspective of resolving the CETO/CETL (capacity emergency analysis) violations identified in the RTEP Baseline analysis (Regional Transmission Expansion Planning). PJM recommended the 230kV reinforcement option as it resolves all local and bulk system problems through 2007.

Due to area load growth and past contingencies on the 69kV lines, the new 230kV line is expected to be more reliable with respect to the existing line.

Availability of the upgraded line will continue to be controlled per the existing PJM processes. Scheduled line outages will be entered into the PJM OASIS system. Availability of the upgraded line is expected to be the same or better than the existing line.

3. NRC Request

What protocol has been established with the transmission system operator to communicate to the licensee the availability of the line to provide sufficient voltage following a plant trip or when voltages would not be adequate?

Response

The protocol for communications between the transmission system operator and Oyster Creek in the event of grid perturbations is described in Exelon procedure OP-AA-108-107-1001, Station Response to Grid Capacity Conditions. The Exelon Nuclear Duty Officer verifies that the nuclear generating stations are cognizant of grid status and have taken the appropriate compensatory actions for a Maximum Emergency Generation Alert or higher condition.

Oyster Creek specific actions and voltage requirements are described in procedure ABN-60, Grid Emergency. For the Oyster Creek 230kV buses, 227kV was determined to be the minimum required voltage to maintain the 4160 VAC buses above the degraded grid relay setpoints during DBA conditions. The minimum required voltage is based on a trip of Oyster Creek and all normal and emergency loads being transferred to the grid.

PJM procedures specify that PJM will operate the facilities that are under PJM's operational control such that no PJM monitored facility will violate normal voltage limits on a continuous basis and that no monitored facility will violate emergency voltage limits following any simulated facility malfunction or failure. PJM Energy Management System (EMS) models and operates to the most restrictive substation voltage limit for both actual and N-1 contingency bases. PJM will initiate notification to nuclear plants if the PJM EMS results indicate nuclear substation voltage violations and the PJM operator believes he is

unable to return system voltages above established limits. This notification should occur within 15 minutes for voltage contingency violations and immediately for actual voltage violations. (PJM Transmission Operations Manual).

FirstEnergy performs monitoring similar to PJM in that both actual bus voltage and contingency voltage (N-1) are monitored and alarmed to the operator.
