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AmerGen SM
An Exelon/British Energy Company

10 CFR 50.90

October 11, 2001
2130-01-20196

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

Subject: Oyster Creek Generating Station
Docket No. 50-219
Facility Operating License No. DPR-16
Technical Specification Change Request No. 285
Response to Request for Additional Information

References: 1) AmerGen Letter No. 2130-00-20314 dated December 29, 2000, "Technical Specification Change Request No. 285 - Offsite Power Sources"

2) NRC Letter dated August 15, 2001, "Oyster Creek Nuclear Generating Station – Request for Additional Information on Technical Specification Change Request No. 285 – Offsite Power Sources (TAC No. MB0976)

In Reference 1 AmerGen Energy Company, LLC (AmerGen) requested a change to the Technical Specifications contained in Appendix A to the Facility Operating License regarding requirements for offsite power sources. Reference 2 contains a request for additional information to AmerGen from the NRC staff. The enclosure to this letter provides a response to the request in Reference 2.

Should you have questions or require additional information please contact Mr. Paul F. Czaya at 609-971-4139.

A001

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

Very truly yours,

10/11/01
Executed On

Ron J. DeGregorio
Vice President
Oyster Creek

Enclosure

c: H. J. Miller, Administrator, USNRC Region I
L. A. Dudes, USNRC Senior Resident Inspector, Oyster Creek
H. N. Pastis, USNRC Senior Project Manager, Oyster Creek
File No. 00088

Enclosure

Oyster Creek Technical Specification Change Request No. 285

Response to Request for Additional Information

NRC Question A

Confirm that the 69 kV S2045 line is physically independent from the 230 kV lines.

AmerGen Response

The 69 kV S2045 (Sands Point) line is physically independent from the 230 kV lines (N1028 and O1029). The 69 kV line enters the Oyster Creek substation via a separate right-of-way from the 230 kV lines.

NRC Question B

The existing OCNGS design basis requires two independent offsite power sources. Show how the proposed configuration provides an acceptable level of reliability and redundancy of offsite power sources. Risk arguments are acceptable to include with supporting justification.

AmerGen Response

The design basis of the Oyster Creek offsite power system is to provide two physically independent circuits from the transmission network, that have sufficient capacity to permit functioning of structures, systems, and components important to nuclear safety. This design requirement was met by having a 230 kV line and a 34.5 kV line in service.

The original connections to the transmission network and those identified as active sources for the purposes of compliance with Technical Specifications 3.7.A.2 and 3.7.A.3 are as follows:

1) 230 kV line to Manitou/Larrabee (N1028)
2) 230 kV line to Manitou/Larrabee (O1029)
3) 34.5 kV line to Whiting (Q121)
4) 34.5 kV line to Mott's Corner (Z52)

The 230 kV lines share the same towers, therefore, one 230 kV line or the other or both together are considered as one active source.

A 69 kV line to a neighboring utility (Sands Point - S2045) was added in 1981. This line can provide offsite power to the Oyster Creek Generating Station, and serve as an express feeder during emergency restoration conditions. The 69 kV line has been addressed in the Updated

Final Safety Analysis Report, but, as of yet, has not been included in the Technical Specifications or their Bases. A recent revision to the plant voltage regulation study included this line in the analysis and found it to be a fully capable source.

As presently operated, 34.5 kV system alignments require that a load break switch (No. Z52-2) on the Z52 line, be left in a normally open position, at the Pinewald Substation. With this switch in the open position, the Z52 line does not feed power to the Oyster Creek substation. As such, the Z52 line can no longer be considered as active, as it does not meet the intent of the design bases for providing power to Oyster Creek.

A license amendment request (reference below) was submitted to address this issue by adding the 69 kV Sands Point line to the Technical Specifications as an alternate source of offsite power. While the Z52 line is normally operated with the load break switch in the open position, under pre-established conditions, it will be closed and the line can once again be considered active. As an example, the switch would be closed should the Q121 (34.5 kV) line require service.

All offsite power lines enter the Oyster Creek switchyard. The Sands Point (69 kV) line enters the switchyard from the South. The Z52 (34.5 kV) line enters from the East. The Q121 (34.5 kV) line enters from the West and the two 230 kV lines (N1028 and O1029) initially come from the North, then travel along the same right-of-way as Q121 on separate towers for approximately 1 mile before entering the substation. There is one crossover point where the 230 kV lines pass over Q121 as it heads West and the 230 kV lines head North. Spacing and construction of the lines, along the common right-of-way is such that, to the extent practical, common mode failure is minimized. The transmission line design included consideration of the interaction of electrical fields, possible high winds in the area and transmission line sag.

The risk associated with the potential interaction of the 34.5 kV (Q121) line and the two 230 kV lines where they cross is similar to the risk associated with the potential for a common mode failure at the switchyard, where all offsite power sources enter the station electrical distribution system. First, the likelihood of a failure of the offsite power lines (grid-centered) is much less likely than a failure of the components within the switchyard (plant-centered, as discussed in NUREG/CR-5496). Second, the probability of an external event is at least partially dependent on the area of potential interaction. A phenomenon that would not be a function of the area could only be one that encompasses an area of greater size than the area of concern for a potential interaction. Since the area of potential interaction associated with the interaction of the offsite power lines is less than the area of the switchyard itself, the risk associated with externally induced failures of the switchyard is greater than the risk of the power line interaction due to external events.

Since both the probability of failure and externally induced interactions of the power lines are less than the probability of similar events in the switchyard, the risk associated with the potential line interaction is less than similarly accepted risk associated with a common switchyard.

Reference: AmerGen Letter No. 2130-00-20314 dated December 29, 2000, "Technical Specification Change Request No. 285 - Offsite Power Sources"