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SUBJECT: Forwards "Design Analysis Adequacy of Station Electric Distribution Sys Voltages." Analysis determined that some operating conditions have potential to cause spurious separations of safety buses from offsite power source.

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 TITLE: Onsite Emergency Power Systems

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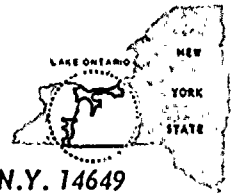
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LEON D. WHITE, JR.
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December 6, 1979

Director of Nuclear Regulation
Attention: Mr. Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Adequacy of Station Electric Distribution Systems
Voltages

Dear Mr. Ziemann:

In accordance with your letter, dated August 8, 1979 from William Gammill to All Power Reactor Licensees and with our letter dated October 8, 1979, RG&E has completed a load flow analysis which models the Ginna electrical distribution system. This analysis was performed in accordance with the guidelines set forth in your August 7, 1979 letter and a copy along with Attachment I is enclosed. The objective of this study was to determine the resulting voltage drops due to normal plant operating conditions and also to determine any potential inconsistencies with General Design Criteria (GDC) 17.

The analyses has determined that only a few operating conditions have the potential to cause spurious separations of safety buses from the offsite power source. These conditions can be corrected by raising the minimum offsite voltage levels. This will then maintain adequate inplant bus voltages.

The results of the analysis will be verified by a comprehensive testing program. The data generated by this program will be compared to the calculated values herewith and stored in the interactive load flow program.

In addition to the analysis, a detailed review of the electric power system was required to determine if there are any events or conditions which could result in the simultaneous loss of both required offsite sources. It has been determined that the following types of failure will result in a simultaneous failure of both offsite sources:

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DATE December 6, 1979

TO Mr. Dennis L. Ziemann, Chief

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1. The failure of the startup transformer (unit #12), or
2. A bus fault on the 34.5 kV open bus, or
3. A fault on either the nonsegregated phase bus ducts or the transformer 4 kV metal clad breakers, or
4. The failure of number 6 transformer in the switchyard, circuit 767 is the normal source and when it fails the safety buses are deenergized until either the diesel generators go into service or the operator manually places the 751 circuit into service, or
5. An event that causes both 115 kV bus sections at Station 13A to trip, if both bus sections remain out of service, station 204 is deenergized. This results in the loss of both offsite sources until line switching can be accomplished and station 204 is reenergized from the remaining portion of the 115 kV system.

The single events listed above will cause the loss of both offsite sources, however they have a relatively low probability of occurrence.

Finally, once the offsite voltage levels are maintained at the recommended values contained in the analysis, no offsite conditions have the potential to violate GDC-17.



L. D. White, Jr.

Enclosure

