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ACCESSION NBR:8203020210 DOC.DATE: 82/02/24 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
UHRIG,R.E. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Forwards response to NRC 811022 request for addl info re adequacy of station electrical distribution sys voltage. Min pick-up,max drop-out & nominal rating of motor starter contacts provided.Voltage analysis by 820501.

DISTRIBUTION CODE: A015S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: Onsite Emergency Power Systems

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[illegible]: Forwards response to [illegible] request for [illegible] info re adequacy of station electrical distribution [illegible] voltage. [illegible] drop [illegible] contacts provided, volts [illegible]

[illegible]

TITLE: Onsite Emergency Power Systems

[illegible]

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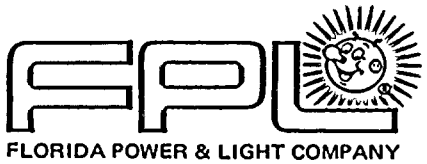
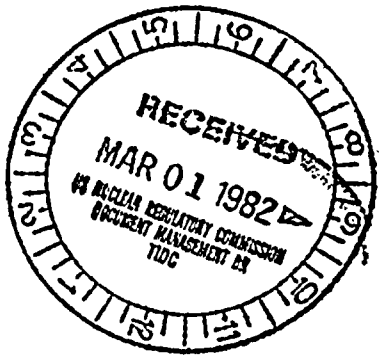


FLORIDA POWER & LIGHT COMPANY

February 24, 1982
L-82-65



Office of Nuclear Reactor Regulation
Attention: Mr. S. A. Varga, Chief
Operating Reactors Branch #1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Varga:

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250 and 50-251
Adequacy of Station Electrical Distribution Voltages

Florida Power & Light has reviewed the NRC letter dated October 22, 1981 which requested additional information on the adequacy of station electrical distribution system voltage for Turkey Point Units 3 & 4.

Our response is attached.

As noted in Item 5 of the response, the requested voltage analysis of the 120 volt electrical system is expected to be completed by May 1, 1982.

Very truly yours,

R. E. Uhrig for

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/PLP/mbd

cc: Mr. J.P. O'Reilly, Region II
Harold F. Reis, Esquire

A015
S1/1

In response to NRC letter dated October 22, 1981
RE: Request for Additional Information (Round 3)
Turkey Point Units 3 & 4 (TAC Nos. 12964 and 12965)
Adequacy of Station Electric Distribution System Voltages

Question 1: Does the start-up transformer of the adjacent unit serve as the second required offsite source to the onsite distribution system as required by GDC 17?

Answer: Turkey Point Units 3 & 4 were designed and constructed to comply with draft GDC's as stated in the FSAR. The Operating Licenses of these units were issued prior to adoption of GDC 17. The Turkey Point Units 3 & 4 onsite electric distribution system has adequate independence, redundancy and capacity to permit functioning of the required engineered safety features.

The start-up transformer of the adjacent unit serves as one source of redundant emergency offsite power to the onsite distribution system. The normal source of power is via the unit auxiliary transformers connected to the generator isolated phase bus. The start-up transformer powers the onsite distribution system during start-up, shutdown, and automatically after a unit trip. The onsite distribution system can be powered via the unit auxiliary and main transformers by removing links in the isolated phase bus in the connection to the main generator. One train of the onsite distribution system of either unit can be powered via the start-up transformer of the adjacent unit by manually closing a 4.16kV breaker. Thus, there are three possible connections of the onsite distribution system to offsite power.

Question 2: Is the start-up transformer of one unit adequate to simultaneously supply minimim engineered safety features of one unit and safely shut down the other unit, without assistance from on-site generation?

Answer: Yes.

Question 3: If the start-up transformers are not sized as described in Question #2, then under what conditions are the cross-unit ties used?

Answer: They are adequately sized.

Question 4: It appears that the removable iso-phase bus generator links are part of the station features which would allow compliance with Regulatory Guide 1.93. Can the links be removed and a unit backfed through the main and auxiliary transformers within 72 hours or within the time required to prevent fuel damage?

Answer: Florida Power & Light has no commitment to comply with Regulatory Guide 1.93 for Turkey Point Units 3 & 4. As stated in answer to Question #1, the Turkey Point onsite distribution system has adequate independence, redundancy, and capacity to permit functioning of the required engineered safety features. Removal of the links provides one path for redundant emergency offsite power to the onsite distribution system.

Question 5: Submit the minimum pick-up, maximum drop-out, and nominal rating of the motor starter contacts. If the starters are energized by the plant's 120 volt electrical system, then the voltage analysis must by extended to that voltage level.

Answer: The manufacturer supplied nominal voltage ratings, minimum pick-up, and maximum drop-out voltage for the starter size used on the safety related equipment are provided below:

Starter Size	Nominal Rating	Mimimum Pick-up	Maximum Drop-out
1	120VAC	88.8V	66V
2	120VAC	85.2V	66V
3	120VAC	85.2V	66V
4	120VAC	91.2V	66V

Since each starter is individually powered from control power transformers connected at the Motor Control Center breaker, numerous combination of starters, CPT's, and MCC's result.

The requested extension of the voltage analysis is expected to be completed by May 1, 1982.

Question 6: What is the minimum starting voltage required for the 4kV and 460 volt 1E motors?

Answer: The minimum voltage required to start and run the 4000V motors is 3200V. The minimum voltage required to start and run the 460V motors is 368V.

Question 7: What is the duration of the starting transient experienced when starting the largest 1E motor as described in your December 18, 1980 letter?

The largest Class 1E motors are the 450HP component cooling water pump motors. These motors accelerate to running speed in less than 2 seconds.