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 PLUNKETT, T.F.      Florida Power & Light Co.  
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SUBJECT: Responds to NRC 931118 ltr re concerns noted in Insp Repts  
 50-250/93-25 & 50-251/93-25 re util implementation of MOV  
 program in response to GL 89-10.

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 TITLE: Response to Generic Ltr 89-10, "Safety-Related MOV Testing & Surveillance"

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10 CFR 50.4

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

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Safety-Related Motor-Operated Valve  
Testing and Surveillance - Generic Letter 89-10

Nuclear Regulatory Commission (NRC) Inspection Report (NIR) 50-250/93-25 and 50-251/93-25 dated November 18, 1993, documented the results of the NRC inspection conducted to evaluate Florida Power and Light Co.'s implementation of the Turkey Point Units 3 and 4 Motor-Operated Valve Program in response to the recommendations of Generic Letter 89-10, "Safety Related Motor Operated Valve (MOV) Testing and Surveillance." During the inspection, the NRC identified an industry concern regarding the proper operation of MOVs equipped with electric brake assemblies at degraded voltage conditions. As requested by NIR 50-250/93-25 and 50-251/93-25, the attachment to this letter provides the response to the concern.

Should there be any questions please contact us.

Very truly yours,

T. F. Plunkett  
Vice President  
Turkey Point Plant

TFP/OIH

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC  
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point Plant

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ATTACHMENT

BACKGROUND

NRC Inspection Report (NIR) Nos. 50-250/93-25 and 50-251/93-25 documented the results of the NRC inspection conducted to evaluate Florida Power and Light Co.'s implementation of the Turkey Point Units 3 and 4 Motor-Operated Valve Program in response to the recommendations of Generic Letter 89-10, "Safety Related Motor Operated Valve (MOV) Testing and Surveillance." During the inspection, the NRC identified an industry concern regarding the lack of documentation to support the operation of valve actuator motor brake assemblies at less than 90 percent of rated voltage. The following discussion addresses this issue.

DISCUSSION

Motor brakes are installed on the following nuclear safety related motor-operated valves (MOV's):

Motor-Operated Valve	Function
MOV-3(4)-716A	Reactor Coolant Pump (RCP) Component Cooling Water (CCW) Supply Isolation
MOV-3(4)-716B	Reactor Coolant Pump (RCP) Component Cooling Water (CCW) Supply Isolation
MOV-3(4)-730	RCP Oil Cooler CCW Return Isolation
MOV-3(4)-872	Alternate Low Head Safety Injection (SI) to Cold Legs
MOV-3(4)-880A	Containment Spray Pump Discharge Isolation
MOV-3(4)-880B	Containment Spray Pump Discharge Isolation
MOV-3(4)-865A	SI Accumulator Discharge
MOV-3(4)-865B	SI Accumulator Discharge
MOV-3(4)-865C	SI Accumulator Discharge

The MOV's with brakes utilize spring engaged friction discs to decelerate the motors after motor de-energization. Upon energization, an electromagnet overcomes the spring force on the friction discs, disengaging the brake. The motor brakes were originally intended to minimize the inertial loads that may be seen during valve seating. However, Limitorque has stated that the motor brakes do not significantly reduce valve stem thrust during valve seating. Additionally, these MOV's have locking worm gear sets and do not require the motor brake to maintain the valves in a closed or throttled position.

It was determined that MOV-3(4)-865A, B, and C do not perform active safety related functions. MOV-3(4)-865A, B and C are normally open with their motor control center (MCC) breakers locked open during

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power operation. These MOV's are closed by remote manual action following a LOCA in order to block nitrogen entry into the Reactor Coolant System (RCS). However, this remote manual action is not a safety related function since it is not essential for accident mitigation or safe shutdown. Therefore, operation of the SI accumulator discharge valves' motor brakes is not required to fulfill a safety function.

The above listed MOV's are powered from 480 VAC MCC's. Rated MOV voltages were conservatively assumed to be 460 VAC. Verified nameplate information has shown that the valve actuator motors for the MOV's listed above are rated for 440 VAC operation. Because the motor brake is designed to operate at the rated voltage of the motor, proper operation of the brake is expected at a voltage of at least 90 percent of rated, or 396 VAC. The minimum calculated terminal voltages for the affected MOV's with active safety related functions have been determined to be 406V, which is greater 396 VAC (i.e., 90% of rated voltage). Therefore, operability of the MOV's equipped with brake assemblies under degraded voltage conditions has been verified.

#### CONCLUSION

As discussed above, MOV's equipped with motor brakes which perform an active safety related function have been verified to have greater than 90 percent of rated voltage available during starting. Therefore, sufficient voltage will be available to operate the motor brakes under degraded voltage conditions.

In addition, the motor brakes for all the above MOV's will be disabled during the next refueling outage for each unit. The next refueling outage for Turkey Point Unit 3 is scheduled for April 1994. The next refueling outage for Turkey Point Unit 4 is scheduled for October 1994.

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