



**Florida  
Power**

CORPORATION  
Crystal River Unit 3  
Docket No. 50-302  
Operating License No. DPR-72

December 21, 2000  
3F1200-03

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

Subject: Joint Owners Group Program on Motor Operated Valve Periodic Verification  
Generic Letter 96-05

Reference: FPC to NRC letter, 3F1196-04, dated November 15, 1996

Dear Sir:

The purpose of this letter is to describe Florida Power Corporation (FPC) participation in the Joint Owners Group (JOG) Program on Motor Operated Valve (MOV) Periodic Verification for Crystal River Unit 3 (CR-3). The CR-3 MOV Program is described in Attachment 1. The revised MOV Periodic Verification program described in this letter supercedes the program submitted by the reference letter as the CR-3 180-day response to Generic Letter 96-05.

The commitments made in this letter are identified in Attachment 2.

If you have any questions regarding this submittal, please contact Mr. Sid Powell, Supervisor, Licensing & Regulatory Programs at (352) 563-4883.

Sincerely,

*J. H. Terry*

J. H. Terry  
Manager Engineering

JHT/rer

Attachments:

1. Joint Owners Group (JOG) Program on Motor Operated Valve (MOV) Periodic Verification
2. List of Commitments

xc: Regional Administrator, Region II  
Senior Resident Inspector  
NRR Project Manager

A073

**Joint Owners Group (JOG) Program on Motor Operated Valve (MOV)  
Periodic Verification  
Florida Power Corporation – Crystal River Unit 3**

- References:
1. FPC to NRC letter 3F1196-04 dated November 15, 1996.
  2. NRC to FPC letter 3N0795-10 dated July 24, 1995  
(Inspection Report No. 50-302/95-11)

Reference 1 submitted a description of the original MOV testing program designed to address Generic Letter (GL) 96-05. The following is a description of the Crystal River Unit 3 (CR-3) MOV Program implemented as part of Florida Power Corporation (FPC) participation in the JOG. The program described in this letter supercedes the program for the 180-day response described in Reference 1.

JOG Participation

FPC is formally indicating its participation in the JOG program on Motor Operated Valve (MOV) Periodic Verification as the means of addressing GL 96-05 at CR-3. FPC will update the CR-3 MOV Program documentation to reflect participation in the JOG program. The CR-3 Corrective Action Program will track this action.

Program Scope

The scope of the CR-3 MOV testing program includes all safety related MOVs required to perform an active safety function. The scope of valves in the GL 96-05 program is the same as the scope of valves in the NRC Generic Letter 89-10 program. Safety-related MOVs that would not be capable of performing their safety function during testing are declared inoperable in accordance with the CR-3 Improved Technical Specifications (ITS). As appropriate, the associated system or train would also be declared inoperable in accordance with the ITS.

MPR-1807 MOV Program Phases

The JOG MOV Periodic Verification Topical Report MPR-1807, identifies the three basic elements or phases of the JOG program as: (1) "interim" static testing; (2) dynamic testing; and (3) analysis, evaluation, and resolution of data obtained from dynamic testing. FPC will ensure that the CR-3 MOV Program satisfies the three phases described in Topical Report MPR-1807 without deviation and will update program documentation to reflect same. The CR-3 Corrective Action Program will track this action.

JOG-recommended Changes

FPC will revise the CR-3 MOV Program documentation to require evaluation of these recommendations and modification of the CR3 MOV Program, as appropriate. The CR-3 Corrective Action Program will track this action.

Limitorque Technical Update 98-01, Supplement 1

Limitorque Technical Update (TU) 98-01 provides guidance on determining the output torque capability of a Limitorque valve actuator at degraded voltage conditions. Supplement 1 provided clarifications of TU 98-01. FPC has incorporated Limitorque Technical Update 98-01, Supplement 1, into the CR-3 MOV Program by revising MOV thrust calculations contained in CR-3 calculation E92-0214, "MOV Operability Assessments", Revision 15.

### Static Diagnostic Testing

In Reference 1, FPC committed to perform static, as found, diagnostic testing on all MOVs in the CR-3 program on a frequency of once every three refueling outages. Performance of this testing has been scheduled through the CR-3 Preventive Maintenance Program. At this time, FPC proposes no changes to this frequency for performing static testing. Any changes made to this frequency in the future will be made using the process described below under "Risk Ranking of MOVs."

### Dynamic Testing

The program described in Reference 1 included plans to perform dynamic testing of seven valves by the end of the Cycle 12 Refueling Outage, currently projected for fall 2001. That plan was based on FPC implementing an MOV testing program independent of the JOG. Based on participation in the JOG Program, FPC will perform dynamic testing on two MOVs at CR-3 instead of the seven valves previously proposed. One MOV can be tested with CR-3 online (ASV-204), while CR-3 must be shutdown to test the other MOV (FWV-14). FPC will perform dynamic testing on ASV-204 during operation and will complete this testing by December 31, 2002. FPC will complete dynamic testing on FWV-14 during the Cycle 12 Refueling Outage scheduled for fall 2001.

The MOV test data that will be available to FPC through the JOG Program, in conjunction with data from the dynamic testing of the two MOVs, will be more extensive and more useful than the data that would have been obtained from testing the seven MOVs discussed in Reference 1.

### Risk Ranking of MOVs

The CR-3 Probabilistic Safety Analysis (PSA) has determined a specific value of risk for each MOV. However, FPC has not yet fully implemented an MOV risk ranking program. The static testing frequency of once every three refueling outages is based on remaining consistent with the commitment made in Reference 1, and not on MOV risk ranking. However, FPC affirms that, based on actual CR-3 test data, this frequency remains conservative relative to the JOG program.

FPC is assessing the CR-3 MOV testing program based on the JOG MOV Program. Based on that assessment, FPC will revise the CR-3 MOV Program documentation to specify that changes in test frequencies that may be made in the future will be based on MOV risk informed ranking, the available margin and actuator performance, and to require that proposed changes in test frequencies be evaluated by an expert panel. The CR-3 Corrective Action Program will track this action.

### Motor Control Center (MCC) Testing

FPC has evaluated the MCC test system offered by Crane Nuclear. Although not relied upon as the primary means of testing MOVs, FPC considers that this system has value for monitoring an actuator's performance during the period of time between successive "at the valve" tests. FPC will use this system as an additional means of monitoring actuator performance, as appropriate.

### Trending of MOV Performance

FPC will revise the CR-3 MOV Program documentation to reflect the following provisions related to trending of data. This action will be tracked by the CR-3 Corrective Action Program. The data to be trended in the CR-3 MOV Program will include actuator thrust, torque, spring pack displacement, motor current, and stem factor. This data will be recorded on an initial frequency of once every three refueling outages or prior to relubrication of the stem. When the stem lubricant is discovered to be unsatisfactory an "As-Found" diagnostic test is performed prior to replacing the lubricant and an "As-Left" test is performed after the lubricant is replaced. Stem factor data for the MOV is evaluated to ensure it remains bounded by the operability assessment calculation. For MOVs on which torque cannot be measured, stem thrust, spring pack displacement, and motor current are monitored during "As-Found" and "As-Left" diagnostic testing. This data is verified to be within the bounds of the MOV operability assessment and also compared to previous test data to identify any unfavorable trends. Adverse trends are evaluated and corrective actions taken, as necessary.

### DC-powered Actuators

The CR-3 MOV testing program includes MOVs with DC-powered actuators. The ability of these actuators to operate under design basis conditions is assured through implementation of the following two separate programs:

1. The ability of the equipment (operator, motor, cabling, etc.) to withstand a harsh environment is addressed through the CR-3 10CFR50.49 Environmental Qualification program; and
2. The terminal voltage at the motor is determined as part of the CR-3 Electrical Calculation process.

### **Status of JOG MOV Program Implementation**

The CR-3 MOV test program has been developed and is being implemented. The program documentation needs to be updated to reflect FPC participation with the JOG. Three of the seven valves identified in Reference 1 for dynamic testing by the Cycle 12 Refueling Outage have been tested in an "As-Found" condition with no significant change in valve performance. FPC has performed dynamic testing on the two MOVs included in the JOG dynamic testing program (ASV-204 and FWV-14) and has documented the results for future trending and analyses by the JOG.

### **Inspector Follow-up Items**

In NRC Inspection Report No. 50-302/95-11 dated July 24, 1995 (Reference 2), numerous Inspector Follow-up Items (IFIs) related to Generic Letter 89-10 were closed. The subject IFI numbers were 50-302/94-18-01, -08, -10, -11, -12, and -14. At the time of the inspection, the required actions for many of these IFIs had not been completed, and NRC closure of these IFIs was based on continued tracking of the required actions by various processes and mechanisms at CR-3. FPC now confirms that all actions described in the inspection report required to support closure of these IFIs have been completed.

**List of Commitments**

The following table identifies the statements of action made by Florida Power Corporation (FPC) in this document which may be credited as commitments. Any actions discussed in this document that are not identified in the table represent planned actions provided for NRC information only and are not commitments.

Statement of Commitment	Due Date
FPC will revise MOV Program documentation to reflect its participation as a member of the Joint Owners Group (JOG) on Motor Operated Valve (MOV) periodic verification.	Tracked by CR-3 Corrective Action Program
FPC will revise MOV Program documentation to reflect that the CR-3 MOV testing program satisfies the three phases described in Topical Report MPR-1807.	Tracked by CR-3 Corrective Action Program
FPC will revise MOV Program documentation to require that FPC evaluate program changes recommended by the JOG and, as appropriate, modify the MOV testing program.	Tracked by CR-3 Corrective Action Program
FPC will perform dynamic testing of ASV-204, the MOV that can be tested during operation, as part of obtaining MOV test data for the JOG.	December 31, 2002
FPC will perform dynamic testing of FWV-14, the MOV that must be tested with CR-3 shut down, as part of obtaining MOV test data for the JOG.	Cycle 12 Refueling Outage
FPC will revise the MOV Program documentation to require that an expert panel evaluate proposed changes in test frequencies and to specify that changes in test frequencies that may be made in the future will be based on MOV risk informed ranking, the available margin and actuator performance.	Tracked by CR-3 Corrective Action Program
<p>FPC will revise the MOV Program documentation to require the following trending provisions:</p> <ul style="list-style-type: none"> <li>a. Data to be trended will include actuator thrust, torque, spring pack displacement, motor current, and stem factor.</li> <li>b. Data will be recorded on an initial frequency of once every three refueling outages or prior to relubrication of the stem.</li> <li>c. When the stem lubricant is discovered to be unsatisfactory, an "As-Found" diagnostic test is performed prior to replacing the lubricant, and an "As-Left" test is performed after the lubricant is replaced.</li> <li>d. Stem factor data for the MOV is evaluated to ensure it remains bounded by the operability assessment calculation.</li> <li>e. On MOVs where torque cannot be measured, stem thrust, spring pack displacement, and motor current are monitored during As-Found and "As-Left" diagnostic testing. This data is verified to be within the bounds of the MOV operability assessment and also compared to previous test data to identify any unfavorable trends.</li> <li>f. Adverse trends are evaluated and corrective actions taken, as necessary.</li> </ul>	Tracked by CR-3 Corrective Action Program