



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report Nos.: 50-280/89-10 and 50-281/89-10

Licensee: Virginia Electric and Power Company
 Glen Allen, VA 23060

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection Conducted: March 27 - April 4, 1989

Inspectors: J. Lenahar 5/3/89
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Accompanying Personnel: E. Brown, Office of Nuclear Reactor Regulation

Approved by: G. Belisle 5-3-89
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 Test Programs Section
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SUMMARY

Scope: This special, announced inspection was in the areas of motor operated valve deficiency followup, IE Bulletin followup, and power operated valve inservice stroke time testing.

Results: Within the areas inspected, one violation was identified which involved failure to take prompt corrective action in response to motor operated valve deficiencies, paragraph 2.a. Weaknesses were identified in the licensee's motor operated valve recovery program, paragraph 2.b, in the licensee's motor operated valve overhaul procedures, paragraph 3, and in the licensee's corrective action for excessive valve stroke times, paragraph 4.

The licensee committed to provide, in writing, to the NRC details of the motor operated valve recovery program, and to review MOVATS test reports issued prior to 1988, paragraph 2.b.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

L. Adkins, Mechanical Maintenance Foreman
R. Bilyeu, Licensing Engineer
*R. Blount, Superintendent of Technical Services
*D. Christian, Assistant Station Manager
*P. Doody, Project Engineer, Motor Operated Value (MOV) Repair Project
*E. Greckeck, Assistant Station Manager
S. Hanson, Electrical Maintenance Foreman
*M. Kansler, Station Manager
*H. Miller, Director, Operations and Maintenance Support
K. Moore, Vice-President, Engineering
R. Saunders, Manager of Licensing

Other licensee employees contacted during this inspection included engineers, mechanics, technicians, and administrative personnel.

Other Organizations

D. Eshleman, Site Supervisor, Atlantic Nuclear Services
R. Bowen, MOV Supervisor, Atlantic Nuclear Services

NRC Resident Inspectors

*W. Holland, Senior Resident, Operations
J. York, Senior Resident, Construction
L. Nicholson, Resident Inspector

*Participated in telephone conference call on April 4, 1987

2. MOV Deficiency Followup (92701)

(Open) 280,281/88-45-01; MOV Deficiency Followup. During the present Units 1 and 2 outages, the licensee filed approximately 450 station deviations against MOVs. Examples of MOV deficiencies encompassed by the station deviations are provided in NRC Inspection Report Nos. 50-280,281/89-03. During this inspection, the inspectors performed an in depth review of the testing and maintenance associated with three valves required to be operational in order to mitigate the consequences of a loss-of-coolant accident (LOCA). The inspectors also reviewed the licensee's program to restore Units 1 and 2 safety-related MOVs.

a. Review of MOVs 2-CH-MOV-2289A, 2-CH-MOV-2289B and 1-CH-MOV-1286B Testing and/or Maintenance Histories.

- (1) Reviewing valve 2-CH-MOV-2289A Motor Operated Valve Actuator Test System (MOVATS) test reports from 1986 revealed that the following deficiencies were identified but not subsequently corrected:

MOVATS test report dated November 25, 1986, identified that the valve was not shutting off flow as crisply as a similar valve that had recently undergone disk and seat repair. The test report recommended checking the valve's disk and seating surfaces during the next outage.

MOVATS test report dated February 10, 1987, identified that the valve's stem to disk connection was damaged. This was detected by observing that the stem rotated approximately 45 degrees while the valve was seating. The test report concluding the following:

The stem to disk movement may be do to the over torquing of the valve into the seat.

Comparing the valve thrust signatures with similar valve thrust signatures that underwent disk and seating surfaces repair indicated that valve seat damage was evident.

Due to the high thrust on this valve, and the fact that the MOVATS test performed November 25, 1986, showed seat damage, it can only be concluded that more damage has been done including the stem to disk connection.

The inspectors review of the valve's work orders from 1986 revealed that the valve's disk and seating surfaces had not been inspected for damage, nor had the damaged stem to disk connection been repaired. After the MOVATS testing performed on February 10, 1987, the valve was again tested on May 25, 1988; June 12, 1988; and November 4, 1988. None of the 1988 MOVATS test reports identified disk to stem movement or seating surface damage. On April 1, 1989, the valve was scheduled to be tested following the actuator overhaul. The inspectors requested the licensee to observe if disk to stem movement occurred when performing this test. On April 3, 1989, the inspectors were informed by the licensee that valve disk to stem movement was observed when testing and that corrective action was being initiated. The inspectors were also informed that disk to stem movement was difficult to detect, which may explain why the movement was not detected during any of the three MOVATS tests accomplished in 1988.

The 1986 and 1987 valve MOVATS test reports identified that valve degradation and actuator over thrusting were occurring, and that actual stem to disk connection damage had occurred. The inspectors considered that these deficiencies could result

in valve failure, but were not promptly corrected by the licensee after being identified. Review of the licensee's program during the 1986/87/88 time period indicated that MOVATS test reports were not always adequately being reviewed by licensee personnel. MOVATS contractors performed the testing and submitted test reports, but the deficiencies were not being reviewed by licensee personnel to ensure that corrective action was being initiated.

- (2) Review of valve 2-CH-MOV-2289B inservice test stroke time results, station deviations, and MOVATS test results accomplished in 1987 indicated that valve degradation was occurring but was not subsequently corrected. Valve 2-CH-MOV-2289B is categorized as a cold shutdown valve; consequently, it is only stroke time tested during shutdown periods. Station records indicated that on March 15, 1987, December 19, 1987, and on December 21, 1987, the valve's stroke times exceeded its maximum stroke time limit of ten seconds. The corrective action for the March 15, 1987, valve failure involved stroking the valve two additional times. Since the two additional stroke time results did not exceed ten seconds, the valve was considered operable. During the December 19, 1987, stroke time test, the valve again failed since the stroke time was 10.85 seconds. Based on this failure the valve was MOVATS tested. The MOVATS test report revealed that an actuator high running load condition existed and that the valve stroke time was 10.4 seconds. The test report did not indicate that limit switches were out of adjustment. On December 21, 1987, the valve was tested and the stroke time was 10.37 seconds. On December 21, 1987, the valve's open limit switch was adjusted in accordance with Work Order 3800059847. The work order stated that the excessive stroke time was due to the open limit switch being out of adjustment. The work order did not specify how much the limit switch was out of adjustment or what the final open limit switch setting was left at. Contrary to the licensee's policy to MOVATS test this valve following limit switch adjustment, the valve was not MOVATS tested following the December 21, 1987, limit switch adjustment. After the open limit switch was adjusted, the valve was satisfactorily stroke time tested at 9.71 seconds. On December 23, 1987, Unit 2 was started up.

As previously discussed, valve 2-CH-MOV-2289B failed to stroke within the allowable ten second time period four times; three failures occurred during stroke time testing, and the fourth occurred during MOVATS testing when actuator high running load was also identified. Since MOVATS testing did not reveal limit switches out of adjustment it can be assumed that the open limit switch setting was adjusted to shorten the valve stroke distance, resulting in a decreased stroke time. This is not considered acceptable corrective action. The valve may have

been able to accomplish its intended function with a shortened stroking distance; however, the degraded condition causing the increased stroke time was not corrected.

- (3) In 1985 the licensee was aware that both lithium and calcium based greases had been added to Surry MOV actuators, and that Amolith Grease No. 2, which was utilized in some MOV actuators at Surry, was an inadequate lubricant. In a September 26, 1985, letter from Limitorque Corporation to Virginia Power, Limitorque actuator lubricants were discussed, and Limitorque Corporation recommended that Amolith Grease No. 2 not be used in Limitorque actuators. Additionally, the letter stated that under no circumstances should lubricants of dissimilar bases be mixed. In a Surry inter-office memorandum from W. E. Patterson to H. L. Miller dated September 4, 1985, corrective action involving initiation of an aggressive MOV actuator grease replacement program was recommended.

During the present 1988/1989 Units 1 and 2 outages, numerous station deviations were written that describe actuator grease deficiencies. Examples of such deficiencies included, bad grease in actuator housings and wrong grease types in actuator housings. On July 7, 1988, Station Deviation S1-88-1668 was written against valve 1-CH-MOV-1286B and identified that hardened grease was found in the actuator, that metal filings were found in the grease, that the worm gear would not turn and had several broken teeth. The inspectors reviewed the work order history for this valve from 1985. There was no record of grease replacement occurring until July 1988.

Valves 2-CH-MOV-2289A, 2-CH-MOV-2289B and 1-CH-1286B, are all included in the IE Bulletin 85-03, Motor Operated Valve Common Mode Failure During Plant Transients Due to Improper Switch Settings program. Inclusion into the IE Bulletin 85-03 program means that operation of these MOVs is essential in mitigating the consequences of a loss of coolant accident by repositioning as required to allow injection of high pressure water into the reactor core. Reviewing work orders, station deviations, and MOVATS test reports associated with these valves revealed that, in all cases, known deficiencies existed that were not promptly corrected. Failure to promptly correct MOV deficiencies is identified as violation 280,281/89-10-01.

b. Review of the Licensee's Actions to Restore MOV's for Units 1 and 2

The responsibilities for accomplishing actions required to restore MOVs were divided between several organizational groups. Surry Maintenance Department personnel were performing MOV electrical activities and directing Atlantic Nuclear Services (ANS) contractors, who were performing the MOV mechanical activities. Surry Maintenance Department personnel were also directing the MOVATS contractors, who

were performing MOV diagnostic testing activities. Corporate, Operations and Maintenance Support Branch, personnel were developing a comprehensive program to ensure that MOVs would be properly maintained in the future. Surry Operations Department personnel were involved in determining which safety related MOVs were required to be operational in order to mitigate the consequences of an accident and safely shutdown the plant to hot standby. As a result of the Operations Department review, some MOVs in safety-related systems were not included in the licensee's effort to restore MOVs because they were not required to be operated in order to mitigate the consequences of an accident or safety shutdown Units 1 and 2. One hundred Unit 1 MOVs and 103 Unit 2 MOVs were being evaluated to ensure operability. An MOV Task Group composed of Surry, North Anna, and Corporate personnel knowledgeable of MOVs was formed to direct, coordinate, and provide the required engineering support to restore the 203 Units 1 and 2 MOVs. The activities of the Task Group involved the following:

Review MOVATS test reports dating back to 1988.

Evaluate deficiencies encountered during MOVATS testing and actuator disassembly.

Review and revise as necessary MOV switch settings.

Review adequacy of IE Bulletin 85-03 response.

Review and revise as necessary engineer sketches that provide MOV limit switch settings.

Establish what actions are required to restore MOVs and track the required action status.

Perform MOV walkdowns to verify that MOV nameplate data corresponds to data being used to determine MOV thrust values.

Ensure all Surry MOV commitments are met.

Review MOV work orders dating back to 1988.

Review MOV station deviations dating back to 1986.

Assign root cause and corrective action to MOV station deviations generated in 1988 and 1989.

Valve thrust requirement calculations, using the latest industry standards were being requested from applicable valve vendors. Until these thrust values can be obtained, the MOV task group provided thrust values using standard equations. Two train limit switches are being replaced with four train limit switches which allows the torque switch bypass settings to be increased. MOV task group reviews of

engineering sketches that provided MOV limit switch setpoints revealed that because of the numerous revisions, it was difficult to obtain the required information from the sketches. Consequently, the task group is being required to rewrite the sketches. Another finding of the task group was that MOVATS test reports have not been adequately reviewed. One of the first task group actions was to stop MOVATS testing and prepare written guidelines to ensure that MOVATS test reports would be adequately reviewed. The MOV task group identified that the Unit 1 and 2 power operated relief valves (PORVS) were marginally sized. The licensee is planning to replace the actuators with larger actuators prior to the respective unit startup. The MOV task group also identified five valves in Units 1 and 2 that have undersized actuators. The undersized actuators are 1-CH-MOV-1287A and B, 2-CH-MOV-2287A and B, and 2-SI-2869. All five valves and actuators were involved in plant modification packages previously accomplished. Valve 2-SI-2869 actuator will be replaced with a larger actuator prior to startup and the charging valves' actuators will be deenergized and locked in position until the actuators are replaced with larger actuators.

During the MOV recovery program review, the inspector noted the following MOV issues that have not yet been fully resolved:

As discussed in paragraphs 2.a(3) and 2.c, actuator grease was identified as a problem. The corrective action to resolve this issue has not been determined.

All Surry safety-related MOVs contain either 460 volt or 440 volt alternating current motors. The voltage specifications for these motors is plus or minus 10 percent of the motor name plate voltage. Bus voltage to these motors is approximately 525 volts AC which exceeds the manufacturer's recommended voltage. The 440 volt motors are being replaced with 460 volt motors. The effect of high bus voltage on the 460 volt motors is being evaluated.

The MOV recovery program review also indicated that the following areas required clarification:

The inspector was informed that to verify operation, MOVs will be differential pressure tested prior to startup. What MOVs to be tested, and at what pressure has not been determined.

Although there have been station deviations written against actuators involving missing parts, modified parts, and incorrect assembly, the licensee does not intend to disassemble and inspect all actuators. The criteria for determining when disassembly would be performed was not clear.

Station deviations have been written for modified and homemade tripper fingers, yet not all tripper fingers have been inspected. The criteria for not inspecting all tripper fingers was not clear.

One finding contributing to the cause of present MOV problems is the lack of a good MOV program. As a result, Corporate is developing a comprehensive program that was scheduled to be issued prior to startup. The program will involve training qualification for station and contract personnel and a department reorganization to ensure that all MOV related maintenance and testing go through a central person. Implementation of this program will take time and will likely not be accomplished prior to startup. In addition, after determining root cause and corrective action in response to station deviations, it is probable that procedural and personnel training will be identified which may or may not be accomplished prior to startup. During the inspection it was not clear what would be accomplished relative to procedural changes, training, or other changes to the MOV program prior to startup.

The MOV recovery program indicated that the following action items need to be accomplished, in addition to the action items presently being accomplished:

The MOV stroke time review indicated that some MOVs were not stroking within specified times. Examples of valve stroke times exceeding allowed limits are 1-RC-MOV-1536, 2-CH-MOV-2289A, and 2-CH-MOV-2289B. In addition, the inspector reviewed a licensee memorandum issued by J. Laflam to A. McNeill, dated February 26, 1988, that discussed MOV excessive stroke times. As discussed in paragraphs 2.a(2) and 4, the licensee's corrective action for excessive stroke times did not always identify and correct the root cause; therefore, MOV stroke times need to be reviewed and valves with excessive stroke times need to be evaluated in order to ensure that root cause and corrective action are performed.

As discussed in paragraph 2.a(1), MOVATS testing accomplished in 1987 on valve 2-CH-MOV-2289B identified valve damages that could have gone undetected during the present recovery program. As a result, the inspectors consider it necessary for the licensee to review all MOVATS test reports dating back to 1985. Previous plans were to review MOVATS test reports dating back to 1988. During the exit interview the licensee indicated that MOVATS test reports issued prior to 1988 would also be reviewed.

In order to determine if MOV repeated problems are occurring the licensee is reviewing work orders dating back to 1988 for applicable MOVs. The inspectors reviewed work orders for various MOVs from 1985, and considered that in order to

determine if repeat problems were occurring, like frequent replacement of motors for example, then the licensee needs to review work orders as far back as practicable.

Valves 1-RH-MOV-100 and 2-RH-MOV-200 are pressure boundary, lock closed, isolation valves backed by manual isolation valves. In the case of a control room fire which results in control room evacuation, the licensee emergency procedures require these valves to be opened in order to provide a letdown path. Since automatic actuation for the valves is located in the control room which had been evacuated, the valves would be required to be opened manually. The valves have been excluded from the MOVs that are currently being evaluated. Since there are station deviations written for valves that do not manually cycle properly, the inspectors consider it necessary to take the appropriate action to ensure that valves 1-RH-MOV-100 and 2-RH-MOV-200 are able to be manually cycled when required.

During the inspection, areas in the MOV recovery program were identified that needed clarification, were not fully resolved, or in some cases not sufficient. As a result, the inspectors noted that personnel in different groups were diligently working toward restoring MOVs; but how all this work would come together to ensure that MOVs were operable prior to restart was not clear. This was discussed during the exit interview where the licensee committed to provide a letter to the NRC detailing how the MOV recovery program would be accomplished.

c. MOV Lubrication

On August 18, 1985, Station Deviation SI-85-430 was written to document the failure of MOV-SW-104B to cycle on command from the main control room. Investigation of this problem by the licensee disclosed that the cause of the MOV failure was presence of grease in the electrical side of the housing which affected the contacts. A detailed investigation of this problem by the licensee's Human Performance Evaluation System (NPES) staff disclosed weaknesses in MOV maintenance procedures and training of maintenance personnel in repairing MOVs. One problem identified during the investigation involved the type of grease used to lubricate the valves. The MOV manufacturer, Limitorque, stated that the only grease which they have certified for their MOVs was Exxon Nebula EP-0 or EP-1, a calcium soap based grease. However, licensee maintenance personnel had used Amoco Ryken No. 1EP or Amolith Grease No. 2, which are lithium based, when lubricating the MOVs. Maintenance personnel were not aware of the differences in the greases, and did not properly document which type of grease was used to lubricate various MOVs. The maintenance procedure did not specify the type grease to be used. As a result, the various types of greases, lithium based and calcium based greases, were mixed. The problems identified by the licensee regarding MOV grease problems were documented in a Virginia Power

memorandum dated September 13, 1985, Subject: Lubrication of Limatorque Operators, Surry Power Station, NP 1175. Investigations performed by other licensees and the NRC have shown that the effects of mixing lithium base and calcium base grease is that the grease hardens resulting in unacceptable wear to MOV components, leading to eventual failure of the MOV. The mixing of small quantities of lithium base grease, as little as three to five percent by weight, with a calcium base grease, has been found to result in hardening of the grease. This data is documented in a Safety Evaluation Report, dated April 28, 1988, prepared by the NRC Office of Nuclear Reactor Regulation for the Braidwood Nuclear Plant (Docket Numbers 50-456 and 50-457, TAC Nos. 67627 and 67626). As stated in paragraph 2.a(3), the licensee failed to take adequate corrective action to resolve problems noted from August - September 1985 regarding improper types of grease used to lubricate MOVs, and the effect of mixing the various types of greases in MOVs. This resulted in numerous MOV grease problems being identified during the current outage.

The inspectors questioned licensee Maintenance Supervisors regarding planned corrective actions to address grease problems. These discussions disclosed that the licensee was evaluating a method which cleans the MOV with a solvent (varsol) to remove the old grease. The inspectors examined an MOV which was cleaned using this method and noted that all the grease had been removed with the exception of some old grease under and around the bearings. As a result of the discussions with licensee personnel, the inspectors had the following questions pertaining to identifying and removing grease from safety-related MOVs.

Which valves have mixed grease or grease other than Exxon EP-0 or EP-1?

How was the appropriate grease identified during valve inspection?

What limits are used to determine if grease is contaminated.? What is maximum percentage of lithium based grease permitted to be present in the qualified calcium based grease?

What method will be used to remove contaminated grease from MOVs?

How will valves be inspected to verify that all grease is removed.

d. MOV Technician Qualifications

The inspectors reviewed the qualifications of the ANS mechanics, titled MOV techs, who perform mechanical inspections and repairs to MOVs. The inspectors also observed two MOV techs disassemble, clean and inspect MOV-SI-2862B. This work was performed in accordance with procedure MMP-C-MOV-178. The inspectors interviewed the MOV techs and determined that they were knowledgeable and cognizant of MOV

corrective maintenance requirements. Based on review of the MOV tech qualifications and observations of work activities, the inspectors concluded that the MOV techs were qualified and had proper training and experience to perform MOV maintenance.

Within the areas inspected, one violation was identified.

3. IE Bulletin 85-03 Follow-up (25573)

(Open) 50-280, 281/85-BU-03, T2515/73, Motor Operated Valve Common Mode Failure During Plant Transients Due to Improper Switch Settings.

The bulletin required licensees to develop and implement a program to ensure that switch settings for High Pressure Coolant Injection and Emergency Feedwater System MOVs, subject to testing for operational readiness in accordance with 10 CFR 50.55a(g), are properly set, selected, and maintained.

The information in this Inspection Report supplements the IE Bulletin 85-03 follow-up contained in Inspection Report Nos. 50-280/89-03 and 50-281/89-03.

In order to evaluate the Surry IE Bulletin 85-03 program, the inspector held discussions with the appropriate licensee personnel and reviewed the following:

Procedure MMP-C-MOV-178.1, Removal and Overhaul of Limitorque Model SMB-0 Through SMB-4 and SB-0 Through SB-4, dated March 23, 1989.

Procedure MMP-C-MOV-178, Removal and Overhaul of Limitorque Model SMB-000 Through SMB-00 and SB-00, dated October 21, 1988.

Procedure EMP-C-MOV-18, Safety Related MOVs - Repair, Replacement, Checkout and Adjustments, dated October 11, 1988.

Procedure EMP-L-MOV-11, Disconnect and Reconnect Safety Related MOVs, dated October 10, 1988.

Procedure EMP-C-MOV-151, Testing MOVs Using MOVATS System, dated March 10, 1989.

Procedure SUADM-M-08, Repair/Replacement Program, dated January 26, 1989.

Procedure EMP-L-MOV-198, Testing Butterfly MOVs using MOVAT BART System, dated March 4, 1989.

The following comments are based on the inspector review of the licensee's MOV procedures:

Procedure MMP-C-MOV-178 contains actuator illustrations with reassembly instructions. Several of the illustrations were not clear and; therefore, would not aid the mechanics during actuator reassembly.

Procedure MMP-C-MOV-178.1, provides instructions for removal and overhaul of Limatorque SMB-0,1,2,3,4 and SB-0,1,2,3,4 rising stem and butterfly actuators. These various types and sizes of actuators contain significant differences. In lieu of providing detailed illustrations, the procedure references the Limatorque SMB Instruction and Maintenance Manual. For SB actuators; however, the Limatorque maintenance manual is not referenced by the procedure.

Procedure SUADM-M-08 provides MOV retest requirements following IE Bulletin 85-03 valve maintenance. The retest requirements appear to be adequate if adhered to. Step 3.8.1.3c in this procedure allows the Superintendent of Engineering, with the coordination with the Superintendent of Operations or their designees, to modify these retests requirements when plant conditions make retest performance impractical. As previously discussed in paragraph 2.a(2), MOVATS testing of valve 2-CH-MOV-2289B was not performed following limit switch adjustment which is contrary to Procedure SUADM-M-08 guidelines.

Within the areas inspected, violations or deviations were not identified.

4. Power Operated Valves Inservice Stroke Time Testing (73756)

The criteria for stroke time testing power operated valves is contained in Section XI of the American Society of Mechanical Engineer (ASME) code. The licensee is committed to the 1980 edition of Section XI. The stroke times for the following MOVs from 1986 were reviewed by the inspectors:

2-CH-MOV-2289A	2-FW-MOV-251A
2-CH-MOV-2289B	1-FW-MOV-151D
1-FW-MOV-160B	1-SW-MOV-105A
2-CH-MOV-2115B	2-SW-MOV-204B
1-RC-MOV-1535	1-SI-MOV-1842
1-RC-MOV-1536	
2-RC-MOV-2535	
2-RC-MOV-2536	

Review of these MOV stroke time results indicated that the stroke frequency requirements required by Section XI of the ASME Code were met. The only deficiencies noted were the licensee's corrective action involving an MOV initially failing to stroke fully open or closed, initial stroke time exceeded the maximum allowed, and adjusting the of limit switches to shorten valve stroke to obtain the desired stroke time results. When a MOV fails to stroke initially fully open or closed or if the stroke time is excessive, it had been previous licensee practice to stroke the valve two more times. If these two stroke times were acceptable, then the valve was returned to service. In early 1988 the resident inspector informed

the licensee that this practice was not in accordance with ASME Section XI requirements. As result, the licensee now requires that a station deviation be generated if a valve initially fails the first attempt, but subsequently passes two additional stroke time tests. The station deviation must be evaluated with 24 hours of the initial failure. If the reason for the first failed attempt cannot be corrected, then the valve will be declared inoperable. The valves that failed initial stroke testing were 2-CH-MOV-2289A, 2-CH-MOV-2289B, and 1-RC-MOV-1536. These valves were subsequently stroke time tested satisfactory on second and third attempts and returned to service. These initial stroke failures occurred prior to licensee's corrective action in response to the resident inspector's findings. The inspectors also noted instances where corrective action for excessive stroke times involved adjusting of valves 2-CH-MOV-2289A and B open and/or closed limit switches. Station records that accomplished limit switch adjustments for these valves did not provide enough information to confirm that limit switches were actually out of adjustment or if limit switches were adjusted to shorten valve stroke; however, the valves did have a history of exceeding stroke time limits or just barely passing stroke time testing specifications.

In paragraph 2.a, a violation was issued when valves 2-CH-2289A and B were identified as examples of valve deficiencies where sufficient corrective action was not taken.

Within the areas inspected, no violations or deviations were identified.

5. Exit Interview

The inspection scope and results were summarized during a telephone conference call on April 4, 1989, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

Violation 280,281/89-10-01, was identified for failure to take corrective action in response to MOV deficiencies, paragraph 2.a.

The licensee committed to the NRC to provide in writing details of the MOV recovery program, and to review MOVATS test reports issued prior to 1988, paragraph 2.b.