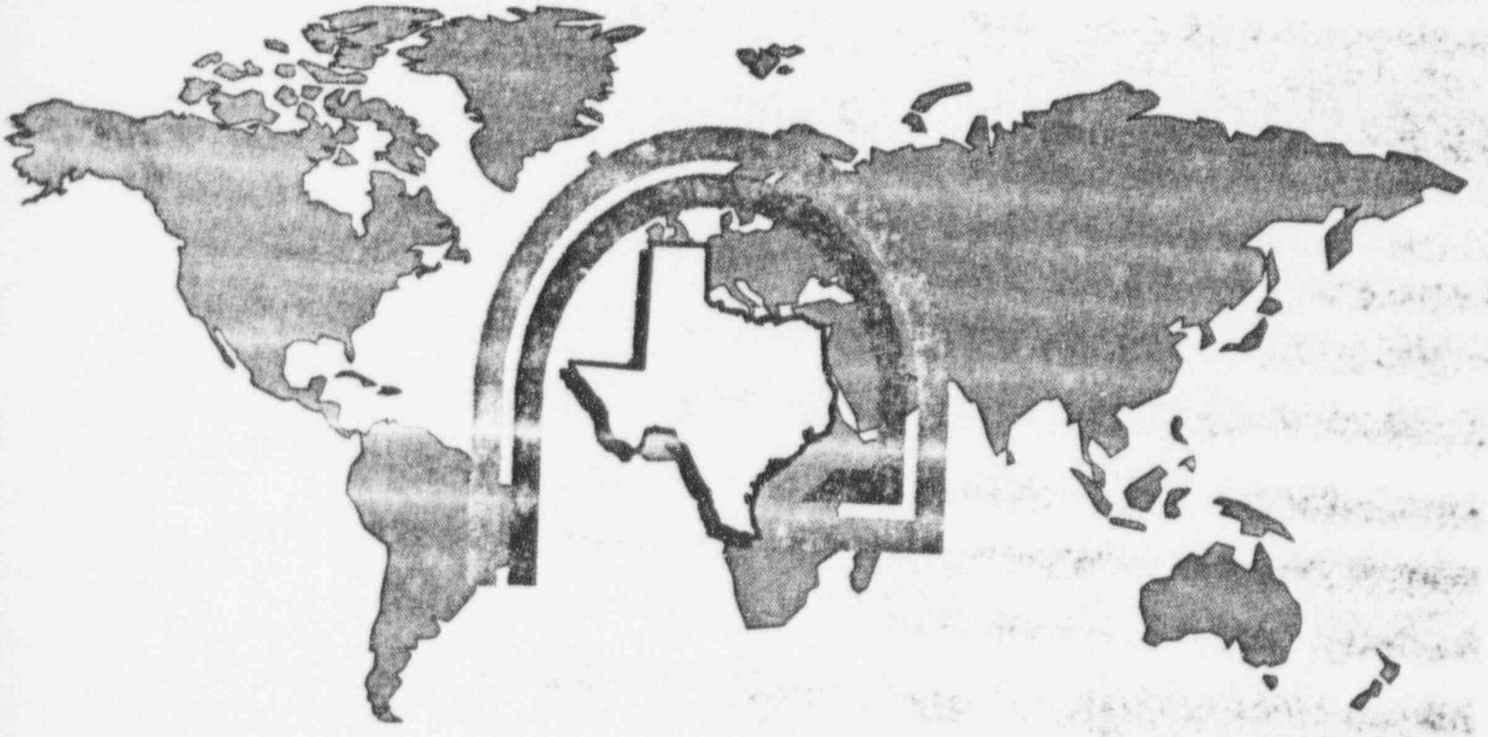
SOUTH TEXAS PROJECT

ASSESSMENT OF THE MOTOR OPERATED VALVE PROGRAM JANUARY 26, 1994

FINAL REPORT



VISION: STP--A WORLD-CLASS POWER PRODUCER

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March 30, 1994

ASSESSMENT

OF THE

MOTOR OPERATED VALVE (MOV)

PROGRAM

JANUARY 8 to JANUARY 26, 1994

FINAL REPORT

MOV PROGRAM ASSESSMENT
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I. EXECUTIVE SUMMARY

ASSESSMENT SUMMARY

The objective of this assessment was to evaluate the implementation and overall effectiveness of the Motor Operated Valve (MOV) Program in accordance with the requirements of NRC Generic Letter 89-10 "Safety-Related Motor Operated Valve Testing and Surveillance".

On January 8, 1994, the assessment of the MOV Program was commissioned by G. Parkey and T. Cloninger due to recent concerns and problems. A multi-departmental Assessment Team was formed consisting of 17 initial team members. The first two days were focussed on developing a Purpose, Goals and Performance Assessment Criteria. The criteria included 34 MOV Program specific and 135 general criteria using INPO Report 90-015 "Performance Objectives and Criteria For Operating and Near-Term Operating License Plants" for guidance. A schedule was developed to report back to the Operational Readiness Review Team (ORRP) on January 17, 1994, with the assessment concluding on January 26, 1994.

The focus for the first week was to assess the status of the Program from the standpoint of MOV Operability and readiness for Power Ascension. The results of this review are documented in the Interim Report dated January 17, 1994 (ST-HS-HS-027896). These results were presented to the ORRP with 6 Mode 4 restraints and 9 ongoing activities having the potential of impacting MOV operability (Reference Attachment A). These issues were tracked and followup discussions occurred with the ORRP to resolve each of the issues identified.

The next phase of the assessment focused on the ability to comply with the NRC Generic Letter 89-10 requirements by June 28, 1994, and assess the effectiveness and efficiency of the overall MOV Program. The results of this phase of the assessment are included in this report. The scope of the assessment was limited to activities performed on MOVs since February 1993 at the start of Unit 1's forced outage. The report includes recommendations for World Class Status and a summation of the observations (Assessment Results).

A statistical sample of Work Packages was reviewed to assess previous field activities with the success criteria based on identification of issues affecting MOV operability. A total population of 907 Work Documents was identified for which a sample of 56 field work complete Work Documents were reviewed. The team was comprised of 5 persons with maintenance package review, quality control inspection and/or quality assurance experience. A second team was formed to review the sample for operability/return to service testing. Results of this review identified numerous areas for improvement as documented in this report but did not identify any issues that impacted MOV operability based on preliminary reviews.

ASSESSMENT RESULTS

During the assessment the following 10 SPRs were written:

- SPR 940067 LLRT incorrectly signed off as complete in work package.
- SPR 940098 Use of Fire Proof File Cabinets for Storage of QA Records
- SPR 940103 Use of Non Safety Grade Lubricants.
- SPR 940134 Record retention of Conditional Release Authorizations.
- SPR 940135 Vendor Procedures for performing On Site Maintenance Work are not Being Screened Under 10CFR50.59 Prior to Use
- SPR 940137 Configuration Management concern or Heater Wire Termination Points
- SPR 940210 Lack of programmatic requirements to verify ERFDADS input and ESF Status Lights.
- SPR 940201 Completion of Operability Testing Forms per 0PGP03-ZM-0025.

- SPR 940213 Tracking and trending of MOV data per 0PEP07-ZE-0007 and the identification of all MOVs to operations that have adverse trends which may require contingency actions and/or revised operating policy and practices.
- SPR 940219 Work packages were not effectively controlled, revised and implemented. Scope and schedule control was lost due to duplicate work documents. Planning of work packages and field implementation was not effectively monitored.

Significant key strengths include the MOV Program Plan, the expertise and commitment of the staff, the level of detail in the Testing Procedure, and the limit switch compartment inspections. Other significant improvements in process include a dedicated MOV Program Manager, supplementing staff with contractors with MOV-related plant experience and implementation tracking for the assessment results and day-to-day work tracking.

The key areas for improvement include resource planning and allocation, HL&P ownership and program oversight, training, scope control, and the overtorquing/overthrusting of MOVs. Section III of this report provides recommendations for achieving world class status. Recommendations are provided in the areas of ownership, program management, quality, work processes, long term program maintenance, meeting the NRC Generic Letter 89-10 requirements, engineering support, and general areas. Completion of the scope of work required to comply with the June 26, 1994, NRC Generic Letter 89-10 commitments will require extensive planning and management attention.

The support received from the STP Management Team in providing dedicated Assessment Team Members and overall cooperation shown by all individuals in support of the assessment was appreciated and considered indicative of the commitment to achieve World Class Status.

II. ASSESSMENT TEAM

TEAM LEADER	M. J. BERG
MOV PROGRAM MANAGER	M. D. MEIER
DED	C. W. ROWLAND B. LONEY
EPD	D. M. CHAMBERLAIN
MAINTENANCE	J. F. HARTLEY D. W. RENCURREL
NPMM	G. WALTER
CAG	R. A. CORNELL M. A. COVELL
QA	T. N. LUCAS S. J. ELDRIDGE
ITI MOVATS	W. LAVALLEE
TRAINING	J. W. PARISH
ESD	S. L. CORPORON
OUTAGE MANAGEMENT	R. A. THOMPSON
OPERATION SUPPORT	D. BURGESON

WORK PACKAGE REVIEW

Q.C.	M. HARRIS C. SIST
MAINTENANCE	J. SPRYS J. VAUGHN

III. RECOMMENDATIONS FOR WORLD CLASS PROGRAM

A. OWNERSHIP

1. MANAGEMENT STABILITY

   Stabilize the MOV Program Management to mitigate the lack of program continuity and ownership resulting from the high turnover rate of management and support staff.

2. MULTI-DEPARTMENTAL SUPPORT

   Develop and maintain the expertise in the cognizant departments to perform MOV testing, motor actuator refurbishment, signature analysis, package planning, and qualification training to support MOV maintenance during operation and during unplanned outages.

3. ESTABLISHMENT OF RESPONSIBILITIES AND ACCOUNTABILITY

   Define responsibilities and establish ownership among and within involved departments for each element of the MOV Program. Need to reduce reliance on contractors. Individual job descriptions should be developed for each MOV staff position.

4. HL&P ORGANIZATION

   Assign one manager with the full-time responsibility for planning and implementing all facets of the HL&P MOV Program including Generic Letter 89-10 commitments and subsequent long-term requirements.

B. PROGRAM MANAGEMENT

1. UPDATE AND MAINTAIN PROGRAM PLAN

   Update and maintain the Motor Operated Valve Program Procedure (0PGP03-ZE-0037) to reflect current program requirements and organizational responsibilities. MOV long-term program in the STP Business Plan should be elaborated to include major milestones/activities. Program Implementation Plan should be updated and maintained current.

2. DEVELOP WEEKLY PERFORMANCE INDICATORS

   Reports (weekly) should be submitted to management to increase sensitivity to the MOV program and communicate status. Performance indicators and milestones outlined in the program plan should be the focus of the report.

3. IMPLEMENT ENGINEERING WORK MANAGEMENT SYSTEM

   The Engineering Work Management System should be used to track all engineering activities and periodically reviewed for completeness, schedule compliance and resource utilization.

4. LICENSING COMPLIANCE

   Develop and maintain a Program Document which contains a list of program commitments and how those are accomplished to meet compliance with Generic Letter 89-10 and associated MOV guidance.

C. QUALITY INDICATORS

1. IMPROVE USE OF ASSESSMENT/SURVEILLANCE RESULTS

It is recommended that the MOV management address independent assessment/surveillance results by program improvements and follow up self assessments. Quality Assurance assessments conducted in 1991 and 1993 identified program weaknesses that have continued through this assessment. Had corrective actions for these weaknesses been effective, many of the current problems would not exist.

2. DEVELOP WORKMANSHIP PERFORMANCE MONITORING TOOLS

Work monitoring/performance indicator feedback mechanisms should be developed. The attributes should include at least the subjects of industrial safety, schedule adherence, quality of work and budget compliance. Weekly reports should be forwarded to both Maintenance and MOV Program Management.

3. ESTABLISH TRENDING MECHANISMS FOR DRs/SPRs

During the course of this assessment, the need to determine the extent and variety of problems associated with the operation and maintenance of motor operated valves was identified. The primary source of identified problems was the issued Station Problem Reports, with reviews of the ITI MOVATS DISCREPANCY REPORTS (DR) as a supplementary source.

During the review, the number of problems that were of like nature and MOV related appeared to be excessive when considering that they were all within one program. This same issue was also apparent based on the review of the ITI MOVATS DRs. The apparent cause for this oversight may be due to the inability of the Corrective Action Database to identify a significant number of similar problems occurring within the scope of one program, as in the MOV Program.

The same problem was identified in Station Problem Report 933260 after reviewing the Plant Change Form process. A possible solution to this problem could be to program the Corrective Action Database to sort on codes assigned to programs/procedure as well as the existing sorts.

D. WORK PROCESSES

1. PROCEDURES/WORK PROCESSES

a. Process improvements should be implemented to reduce the number of overthrusted/overtorqued actuators. A significant number of actuators are being refurbished unnecessarily because of this concern.

b. Need to establish an HL&P line of communication with ITI MOVATS for Maintenance Bulletins, Lessons Learned, etc.

c. ITI MOVATS Supervisors and Foreman should walkdown jobs before the schedule start date. Their expectations should be that all facets required for a successful work start are in place.

d. Establish clear ownership of the MOV Program Procedures.

e. 0PMP05-ZE-0309 should be divided into logical subgroups. The procedures should then be classified as "IN HAND" (reference SPR 931171).

f. Establish consistent and clear housekeeping expectations for the ITI MOVATS group.

g. Calculation of instrument error analysis per addendum 2 of 0PMP05-ZE-0309 by testing technicians is inappropriate. Process improvements in this area should be implemented.

h. After actuator thrust margin is upgraded either by Kalsi report or by actuator refurbishment, long range plans (next outage) are to set up a banding instrument error window in 0PMP05-ZE-0309 in lieu of addendum 2 "detailed evaluation". This should be tracked to completion.

2. SCHEDULING

a. Have the ITI MOVATS Scheduler and the HL&P Scheduler use the same scheduling software. This will result in more efficient scheduling interface between the two.

b. Establish a clear expectation that the HL&P Authorized Work Schedule is the schedule and ensure that the ITI MOVATS schedule accurately reflects the Authorized Work Schedule.

3. WORK PACKAGE ISSUES

a. Expectations for documentation in ITI MOVATS Work Packages should be established and monitored for compliance.

b. Provide ITI MOVATS with adequate Computer Resources (Catalogue, MPL on LAN and MMS) and training so they may perform their jobs efficiently.

c. Fully implement the WPCC in the control issue issuing and the statusing of SRs assigned to the MOV Program (generic site issue).

d. Change the work control program as required to end the practice of voiding and not retaining SRs for which the associated PCF is dispositioned USE-AS-IS. Since SR trending is performed on the SR databases, these deficiencies are not captured.

E. LONG TERM PROGRAM

1. TRACKING AND TRENDING PROGRAM

a. Establish clear expectations for the Tracking and Trending Program (ref. OPEP07-ZE-0007). The expectations should include a review of who is responsible, what data is required, source of data, acceptance criteria and timeliness of trend identification.

b. Proceed with implementation of the MOV trending program required to satisfy Generic Letter 89-10. Coordinate the MOV trending program with the System/Component Analysis Group (this group is responsible for Service Request History and Service Request Trending). Avoid duplication of effort where feasible.

c. Develop a standard means of communication between work package closure personnel and MOV trending personnel to ensure desired information regarding work performed is captured and communicated for accurate recording in the MOV trending database.

d. Backfit completed SRs into the MOV trending database, to ensure that history regarding occurrences such as overtorque is readily retrievable. Temporary additions to the Engineering Support staff will likely be needed to meet the Generic Letter 89-10 requirement to have the tracking and trending program in place by June 28, 1994.

2. INDUSTRY PARTICIPATION

Need to consider improving interface and sharing of information with other utilities and participation in industry sponsored programs such as EPRI and MUG.

3. TEST DATA MANAGEMENT

Establish a process for the long-term maintenance of MOV diagnostic test data with the following considerations:

- Maintain a backup copy of signature traces on computer discs or magnetic tape in separate, fire-proof storage.

- Transfer key test data to the MOV design database and to the tracking and trending database before the test packages are vaulted (ref. Section 4 of OPEP07-ZE-0007).

- Prepare a working copy, i.e., notebook, of key test data for use by diagnostic test and analysis personnel before the test packages are vaulted.

4. HL&P TRAINING

a. MOV REPAIR/MAINTENANCE TRAINING :

Schedule craft training for Engineering, QC, and Maintenance Planning personnel.

b. MOV TESTING/DATA ACQUISITION TRAINING:

We must train and certify a core group of craftsmen to perform diagnostic testing. These people will be required to perform PMT testing of MOVs during steady state operations, and perform the FSO function during outages. Multi-craft maintenance technicians would be utilized to develop this expertise as they are involved in MOV corrective maintenance and have a background in maintenance activities and reading the required drawings for the test.

To implement training the Department that owns Duty Area must review Job/Task Analysis (JTA) to determine Engineering and Field Implementation task.

1. Training Program development cannot begin until JTA approval.

2. Knowledge and performance objectives are to be developed upon approval of JTA.

3. Estimated development time: 12 weeks

4. Course duration with current tasks in unapproved JTA: 3 weeks with prerequisite of MMT923/EMT908.

c. MOV PROGRAM TRAINING

A course on the MOV Program should be developed for Engineers, Schedulers, etc.

5. LONG TERM PROGRAM MAINTENANCE (SELF SUFFICIENCY)

HL&P should develop an action plan to establish an inter-departmental crew that can repair, test and analyze performance data for MOVs. This crew should be in place and functioning prior to the departure of the ITI MOVATS group from the site.

6. LIMIT SWITCH COMPARTMENT INSPECTION

This inspection program should be to baseline the actuators. Ongoing use of this program in its present form should be required.

7. PLANNING

Need to ensure detailed plans and implementation schedules are in place to integrate program development and upcoming 1RE05 and 2RE04 outage implementation (personnel, equipment, procedures, facilities, training, etc.)

F. MEETING GENERIC LETTER (TYPICAL) 89-10

1. REMAINING ACTIVITIES

A detailed punchlist of all remaining action items to meet Generic Letter 89-10 commitments should be established, prioritized, and scheduled. **This is a critical activity to assure the June 28, 1994 commitment is met.** Refer to Attachment 3 for a detailed list of engineering items identified during the assessment and not covered elsewhere in the report.

2. RESOURCE RECOMMENDATIONS

Resources should be allocated to support revised Program Implementation Plan and periodically reviewed and updated as required.

3. PACKAGING FOR FINAL CLOSURE

A comprehensive package for each valve to support meeting Generic Letter 89-10 commitments should be established and prepared to support an NRC audit. (Reference III.H.2).

A review of Service Requests (in particular the last outages 1SF39 and 2RE03) to identify and resolve any concerns such as those described in Section IV.C.1 should be considered as part of the final packaging effort.

G. GENERAL

1. CONTROL OF CONTRACTORS

a. TRAINING

1. MOV REPAIR/MAINTENANCE TRAINING FOR CONTRACTOR (ITI-MOVATS):
Contractor performance of maintenance tasks shall have qualified maintenance department personnel assigned as Contract Technical Coordinator.

2. MOV TESTING/DATA ACQUISITION TRAINING FOR CONTRACTOR (ITI-MOVATS) PERSONNEL:

a. Develop qualification level and methods of verification.

b. Contractor performance of testing/data acquisition tasks shall have qualified departmental personnel assigned as Contract Technical Coordinator.

b. INTERFACE WITH HL&P PROCEDURES
Site administrative procedures and their implementation will be specified by the CTC. A required reading list will be specified for the contractor personnel.

2. M&TE CONTROL

a. MOV Group should specify guidelines for maintaining M&TE control;

1. Perform within the requirements of STP M&TE Control Program.

2. Notification of M&TE removal from service due to malfunction damage.

3. Post calibration requirements.

4. Tracking and trending M&TE items for frequency of Out-Of-Tolerance (OOT).

b. MOV Group should specify requirements for timely completion of (OOT) Evaluation Packages.

3. OPERABILITY EVALUATIONS

a. Create a centralized system for processing Operability Evaluations. Consolidate the CRA, the JCO, and the SPR operability evaluations into one procedure.

b. Revise programs as required to ensure that documentation of the basis for operability decisions (i.e., Service Request Forms and Conditional Release Authorizations) is retained.

c. Take steps necessary to ensure that each unit's Control Room has a copy of each CRA for which credit is being taken for component operability.

d. Evaluate feasibility for creating one database with all MOV operability criteria (possibly the Tracking & Trending Database) including:
   1. Stroke Time, RPI, VOT, LLRT, ΔP, ERFDADS Input
   2. MOVATS: Static/Dynamic/Diagnostic Acceptance Criteria
   3. Tracking and Trending Alert/Action limits
   4. Mechanical/Electrical Inspection/Overhaul "Go/No Go" Criteria

4. USE OF VENDORS QA/QC PROGRAMS FOR WORK ONSITE
The use of ITI MOVATS QA/QC Program should be revisited prior to 1RE05.

5. WORK ENVIRONMENT
Recommend that cubicle walls be installed in the Design Engineering work area in Building 50 to decrease distractions and increase productivity.

H. ENGINEERING SUPPORT

1. Conduct programmatic training on Design Change Implementation processing per 0PGP03-ZE-0031 and PCF processing per 0PGP03-ZA-0090 and 0PGP03-ZA-0103 for Field Engineering personnel, MOV package planners, and MOV work supervisors.

2. Establish a program to upgrade the DBRs to serve as compliance documents to demonstrate Generic Letter 89-10 compliance. **This is a high priority task to reduce rework/revisiting DBR Packages.** DBRs should continue thereafter as the MOV Engineers' valve specific "Engineer's Notebook," subject to update in order to continually demonstrate compliance after June 28, 1994. Program should provide for second engineer's review, open item closure, retention, ensuring noted discrepancies (open items and "NO" checklist responses) have adequate basis documented in the DBR for not impacting valve operability, including final Pressure Locking and Thermal Binding evaluations. Consider reviewing the Section XI Valve and Pump Test Program for format.

3. Revise the MOV databases to incorporate open amendments. In planning future work, ensure that engineering schedules provide for future updates at an interval not to exceed six months (procedural requirement of 0EP-6.02Q)

4. Conduct a review to ensure that DBDs have been updated to keep pace with the changes to MEDP or to valve stroke times (due to gear changes). Ensure that PCF preparers are aware of the need to include updates to the DBDs when processing changes to these parameters.

5. Eliminate the backlog of MOV-related SPR investigations and corrective actions.

6. Perform a 100% review of ITI MOVATS DRs to ensure that PCFs were generated for any DRs dispositioned "use-as-is" or "repair," and to ensure that cross reference documentation is available. Also, verify the adequacy of DR closure documentation.

7. Develop guidelines on what types of ITI MOVATS DRs must be treated as SPRs and nonconformances subject to disposition via PCF and what can be accepted by the Field Engineer under the "engineering evaluation/clarification" provisions

of 0PGP03-ZA-0103, paragraph 4.1.3. Also, develop guidelines to provide clarification of the established definitions of "use-as-is," "repair," and "rework."

8. 0PMP05-ZE-0309 Addendum 44 process should be reviewed for potential impacts to MOVs evaluated using previous revisions of the procedure.

IV. ASSESSMENT RESULTS (SUMMATION OF OBSERVATIONS)

A. MANAGEMENT

A.1 KEY AREA ASSESSED: PROGRAM OWNERSHIP

Strengths:

1. Placing the field implementation portion of the MOV Program under Maintenance has resulted in improved field work practices and processes.

Areas for Improvement:

1. Lack of ownership is evident in the MOV Program.
   a. The MOV Program Procedure (0PGP05-ZE-0037) is not up-to-date in defining management responsibilities.
   b. There has been a high turnover of program management and support personnel in the past six months.
   c. The assignments for specific MOV Program responsibilities are not consistent among procedures and in some cases are not clearly defined.
   d. The MOV Program Organization Chart dated 1/4/94 is out of date.

A.2 KEY AREA ASSESSED: MANAGEMENT TOOLS

Strengths:

1. Numerous management tools exist to gauge the effectiveness and performance of the MOV Program. These include past program assessments, NRC Inspection Reports, post-outage reviews, station problem reports, QA surveillance reports, and action plans.

Areas for Improvement:

1. Management tools to monitor and control the MOV Program are not being used effectively.
   a. The milestone schedule in the Generic Letter 89-10 Program Plan of Action (October 6, 1993) is out of date and is not being used to track program performance.
   b. There are no published performance indicators for the MOV Program groups.
   c. Weekly status reports provided by the Project Supervisors have been discontinued.
   d. Findings and recommendations from two previous assessments (91-01 and 93-01) and from NRC Inspection Report dated July 20, 1993 have not been fully implemented.
   e. There are recommendations/open items in the Design Basis Reviews with no formal program to track to closure.

B. TRAINING

1. KEY AREA ASSESSED: CONTRACTOR TRAINING

a. MOV REPAIR/MAINTENANCE TRAINING FOR CONTRACTOR (ITI-MOVATS)

Strengths:

1. ITI-MOVATS MOV Repair/Rework training program reviewed by NTD's Professional Support Services is equal to STP's objectives in MMT923 and EMT908.

Areas for Improvement:

1. DED contracted for performance of Mechanical and Electrical Maintenance tasks. DED personnel do not perform maintenance work control processes and document control.

2. Maintenance task owners did not identify required site specific training.

3. DED did not use qualified personnel for performance of maintenance tasks to identify qualification and performance weaknesses through observation.

4. Plant specific process control training for replacement personnel was not required by DED.

5. Line Management defined and approved required reading list does not exist (recently provided for ITI MOVATS personnel).

b. MOV TESTING/DATA ACQUISITION TRAINING FOR CONTRACTOR (ITI-MOVATS) PERSONNEL

Strengths:

1. Initial assigned personnel trained and qualification for site specific MOV Program verified through testing.

Areas for Improvement:

1. Replacement personnel were not trained or tested on site specific testing requirements.

2. Engineering and Field Implementation task owners have not identified training and qualification verification methods.

   a. ITI-MOVATS training does not address all the tasks needed to perform in accordance with STP's MOV Program.

3. Insufficient qualified STP personnel in the performance of field implementation tasks to identify qualification and performance weaknesses through observation.

2. KEY AREA ASSESSED: HL&P TRAINING

a. MOV REPAIR/MAINTENANCE TRAINING FOR STP PERSONNEL

Strengths:

1. PED personnel attended unaccredited course developed for PED's Performance Technicians (PTT113). Course is no longer offered.

2. Craft training for MOV actuator repair is accomplished through accredited training programs, MMT923 and EMT908.

Areas for Improvement:

1. Engineering personnel can only obtain training by attending craft training courses, MMT923 and/or EMT908.

2. Mechanical Maintenance task performance frequency is well below expected during past twelve (12) months due to contractor performance of task.

a. Refresher training level not been established.

b. Job/Task Analysis does not identify task refresher training objectives. Task owner/SME responsibility.

b. MOV TESTING/DATA ACQUISITION TRAINING FOR STP PERSONNEL

Strengths: None identified.

Areas for Improvement:

1. Training conducted by ITI-MOVATS does not address all the tasks needed to perform IAW STP's MOV Program.

a. SPR 93-0492 identifies the deficiency.

b. SPR 93-0492 action item closed without completion Engineering Support Program.

2. Plant Department performing Duty Area has not approved Job/Task Analysis.

C. PROCESS/PROCEDURE

C.1 KEY AREA ASSESSED: PROGRAM AND TESTING

Strengths: 0PGP03-ZM-0025.

Areas for Improvement:

1. ERFDADS input verification after MOV overhaul is not a programmatic requirement to be performed (SPR 940210 generated).

2. Lack of "working within the established scope and requisite schedule" significantly increased operations ECO and "OPERABILITY TESTING" work load.

3. Partially completed PMs by ITI MOVATS have been closed without completion of the PM activity. The remaining PM activities are rolled into other work documents.

4. PMs are routinely used to plan, schedule, and perform ITI MOVATS related work travelers which implement corrective maintenance activities (WAN# 93000640, 93001040, 93001249, 93000933, and 93000679). The PMs are not included in the SR Trending Program.

5. Numerous work package revisions and "N/A'd" work instructions make it difficult to determine Operability Testing requirements. N/A'd portions of work instructions should be initialed, dated and the basis indicated. A summary sheet of all work performed by the ITI MOVATS Traveler and the EI 4.07 inspection should be considered to facilitate the Operations Department in determining the operability testing requirements)ref. SPR 932425).

6. Repair work performed by ITI MOVATS Technicians not documented or dispositioned on a MOVATS DR. The use of a DR should be reviewed and clear criteria established when a DR is required. Also, the use of a DR should be reviewed for compliance with the requirements of OPGPO3-ZX-0002.

7. 0PGP03-ZM-0025 Operability Testing Forms required to document Tech Spec Operability are missing from numerous completed work packages, which makes it difficult to verify valve operability. Of 59 packages reviewed, 5 were missing required operability testing forms (ref. SPR 940201).

8. WMS data base indicates rework/repeat maintenance is being performed on the same valves.

9. Operations has indicated a concern that repeat maintenance indicates poor quality of initial repairs or refurbishment as indicated by the number of SRs worked on each MOV.

10. Work Package documentation is confusing such as repair of CV-MOV-33C in PM:EM-1-CV-90001112 work instruction step 7.2.8.11, of MOP-1.0 removed "MOV Operator", reinstallation of MOV Operator was not documented per steps (7.5.1.1 - 7.5.1.5).

11. Work Package revisions are routinely implemented on MOVATS Travelers without concurrence from the Shift Supervisor or MOV Program Management.

C.2 KEY AREA ASSESSED: MEASURING & TEST EQUIPMENT (M&TE) CONTROL

Strengths:

1. Entries are made on M&TE Issue/Record sheets at the time of use.

2. M&TE that is malfunctioning and/or damaged is removed from service.

Areas for Improvement:

1. Post calibration requirements for MOV M&TE should be reviewed, such as Thrust Cells, to reduce the number of OOT Evaluations required.

2. DED Field Service Engineer is not notified when M&TE is removed from service due to malfunction or damage.

3. Timely completion of Out-Of-Tolerance Evaluation Packages is not being performed.

4. Ten (10) pieces of M&TE checked out by DED were not returned to MET LAB until after calibration due dates.

C.3 KEY AREA ASSESSED: PROCEDURES

Strengths: None Noted

Areas for Improvement:

1. No single organization on site claims the "0PMP05" Procedures as their responsibility to upgrade and maintain. For example the 0PMP05-ZE-0309 is signed by the DED Manager but the procedure designation is the Maintenance Support Department (PMP05 - Electrical Maintenance).

2. The procedures being used are not consistent with one another or with the intent of Generic Letter 89-10.
   a. The 0PGP03-ZE-0037 procedure specifies a review frequency for MOV data to occur every two years without defining the review criteria. This does not coincide with the establish testing frequency.

   b. There are no provisions for retaining "hard copy evidence" of trending information. This is in conflict with the intent of Generic Letter 89-10. Retention of source documents for the Tracking and Trending Program is inconsistent between procedures.

   c. The assignments for specific responsibilities are not consistent between the procedures and in some cases are not clearly understood.

   d. The information specified for the Tracking and Trending program is inconsistent between procedures.

   e. EI-4.06 and 4.07 should be classified as procedures and not guidelines (reference "Classification of Procedures: Procedure 0PGP03-ZA-0007, Rev. 5").

C.4 KEY AREAS ASSESSED: WORK SCHEDULE

Strengths:

1. Work is scheduled through the use of a logic driven scheduling method.

Areas for Improvement:

1. The MOV Program section of the authorized work schedule was not consistent with the ITI MOVATS work schedule. Misunderstandings as well as improper implementation of site work schedule can place undue challenges to the work process which may result in inefficiencies and the unnecessary rescheduling of work activities.

   a. A comparison of the Unit 1 authorized work schedule and the ITI MOVATS schedule for Jan. 6 through Jan. 10 was performed. Out of 19 jobs reviewed, 9 jobs had conflicting dates and 2 jobs were on the HL&P schedule but not on the ITI MOVATS schedule.

   b. For Unit 2, the authorized Work Schedule for the week of Jan. 10 through Jan. 16 was not updated before issue. This resulted in the Operations Train Coordinator and the ITI Movats scheduler rewriting the schedule for the week.

2. The scheduling software used by the HL&P MOV Program Scheduler and the ITI MOVATS Scheduler is not the same. This results in inherent differences and inefficient coordination between the two schedulers.

C.5 KEY AREAS ASSESSED: WORK STATUSING

Strengths: Implementation of Work Package Control Center (WPCC)

Areas for Improvement:

1. The work control system does not provide an accurate status of outstanding maintenance work. Inconsistencies in the processing and statusing of SRs leads to uncertainty about the location of the SRs within the work process as well as their "readiness" to be closed.

2. Operations personnel concerned equipment repairs have been performed and completed but not closed for prolonged periods of time.

D. CONDUCT OF MAINTENANCE

D.1 KEY AREA ASSESSED: CONDUCT OF MAINTENANCE (FIELD ACTIVITIES)

Strengths:

1. HL&P CTC conducts a crew meeting each morning where plant conditions, goals, and expectations are discussed.

2. The ITI MOVATS crew turnover from nights to days was formal and accurate.

3. An effective pre-job briefing was held for the actuator work for Unit 2 CC-MOV-0182 and CC-MOV-0209 valves.

4. The use of the STAR method of self checking was evident during field observations of ITI Movats personnel.

Areas for Improvement:

1. The ITI Movats crew assignments are not made until the day of work start. This results in the ITI Movats supervisor not knowing the jobs scheduled to work until 0645 of the scheduled start date. Therefore, pre-job walkdowns are not performed and restraints to work are not identified in a timely manner.
   a. Performance of actuator removal for CC-MOV-0182 was delayed due to scaffolding not being in place. The lack of scaffolding was not realized until the work crew arrived at the valve after work start was obtained.

   b. The performance of work on EW-MOV-0157 was delayed due to scaffolding not being in place.

D.2 KEY AREA ASSESSED: CONDUCT OF MAINTENANCE (OBSERVED DURING PERFORMANCE OF SR 211149)

Strengths:

1. Good pre-job briefing by the MOVATS foreman. Discussed work instructions in great detail.

2. Foremans' presence was noted in field.

Areas for Improvement:

1. Technicians had to wait 1 hour for the only EE580 qualified person to install a jumper at the MCC before testing could start.

2. Observed technicians as they mounted test devices on the MOV. Contrary to the requirements of procedure 0PMP05-ZE-0309 Addendum 36, the limit switch was removed without performance of prerequisite steps to disengage the limit switch gears.

   It is noted that this error had no effect on the final limit switch settings, however, failure to perform these steps at the end of testing would invalidate the limit switch settings.

   Procedure 0PMP05-ZE-0309 is classified as a "Referenced" procedure which means that it does not have to be open and followed in the field. This procedure has too much technical guidance to commit to memory (344 pages). Had this procedure been classified "In Hand", the technicians would have been reminded of this requirement. Revision of this procedure to classify it as "In Hand" is an overdue corrective action from SPR 931171 generated by QA.

D.3 KEY AREA ASSESSED: STATISTICAL SAMPLE OF COMPLETED MOV WORK DOCUMENTS

Strengths: None Identified

Areas for Improvement:

1. Document review identified issues of improper quality class parts usage. All issues identified are currently being addressed by SPR investigations.

2. Documentation of actions performed in the summary section of work packages was identified to be marginal in detail.

Assessment:
A review team was formed comprised of 5 persons with maintenance package review, quality control inspection and quality assurance experience to conduct this review. A WMS History computer sort was processed to identify all work activities since February 1, 1993, related to MOVs in the Generic Letter 89-10 Program. Total activity population was 907. The 95/95 sampling program was used to derive a statistic sample lot size and identify the sample documents. 56 completed activities were selected to represent the first cut review. Per the random sampling program, a deficiency rate of >5 OPERABILITY issues would require additional sample scope. Review disclosed no OPERABILITY issues. A deficiency was established as an issue which impacted valve operability.

A checklist was developed to provide review attributes addressing work scope, documentation of work performed, replacement parts, PMT, supportive documentation and return to service criteria. A checklist was completed for each document reviewed.

Document review identified work activities in which replacement parts below the required quality class 4 were installed. With the exception of one case, these parts are currently identified on SPRs which are under investigation for usage, or there has been a commercial grade dedication performed for the part.

Review of PM-WAN 93000933 disclosed the use of non-safety grade lubricant (CB 559-30057 MAT Code ENFZWZ). An SPR (940103) was issued to document this finding and 80 similar activities identified during review of the MOVATS lubrication tracking database.

D.4 KEY AREA ASSESSED: MAINTENANCE FACILITIES
Strengths: None Identified

Areas for Improvement:
1. The ITI Movats Machine Shop and Valve Refurbishment trailers are not kept up to Maintenance Department standards. This results in the establishment of poor working conditions for ITI MOVATS personnel.
   a. There were numerous tools not stored properly.
   b. 50% of the lighting was not working in each trailer.
   c. A work bench in the back of the machine trailer was roped off as a contaminated area. The bench had a diaper on it, a bucket of tools, and a small gauge. There was no real control of the gear.

D.5 KEY AREA ASSESSED: QUALITY CLASS OF MATERIAL
Strengths:
1. ITI MOVATS received training on January 11, 1994 to resolve confusion on quality classification of replacement parts. Training for new personnel should continue.

2. ITI MOVATS given a copy of TE# Limitork (Limitorque Critical Components List) which specifies safety and non-safety parts.

Areas for Improvement:

1. Communication between HL&P and ITI MOVATS
   a. ITI MOVATS was informed to use non-safety lubricants, with the intent that when the grease was used up a technical evaluation was to be performed prior to purchase. Maintenance Bulletin #MTB-93-010, dated August 2, 1993, was issued stating all lubricants to be safety related or non-safety with appropriate technical justification. ITI MOVATS did not receive the Maintenance Bulletin. (Ref. SPR# 940103)

   b. ITI MOVATS assumed that replacement parts would not be issued for the job unless the Quality Class was correct. (Ref. SPR# 93-3469 and 94-0029)

D.6 KEY AREA ASSESSED: MATERIAL AND CONFIGURATION CONTROL

Strengths:

1. ITI MOVATS Material Control meets the requirements of ANSI-N5.2.2 Level B. Material is kept in a locked file cabinet in MOVATS trailers. Keys for the cabinet are kept by QC.

2. ITI MOVATS notifies HL&P of various discrepancies versus the MOV Databases through their DRs (e.g., MOV Nameplate Data, Limitorque Shop Order Number, Spring Pack Number on Nameplate, etc.) . HL&P initiates the appropriate documents e.g. DCN, PCF, etc. to resolve the discrepancies.

Areas for Improvement:

1. Configuration Control
   a. During replacement of eyebolts on the housing covers DR# 2-STP-640 was issued to replace with approved hex head cap screws. ITI MOVATS installed inferior grade stainless steel instead of SAE-J429 Grade 5 as per the design. (Ref. SPR# 94-0119)

E. ENGINEERING PACKAGES/DOCUMENTS

E.1 KEY AREA ASSESSED: MEETING THE June 28, 1994 NRC COMMITMENT

Areas for Improvement:

a. There is risk of not meeting the June 28, 1994 NRC commitment due to the excessive remaining Engineering scope. The following significant tasks as well as ongoing work must be accomplished prior to June 28, 1994:
   1. Baseline test all MOVs.
   2. Complete DBRs on all valves.
   3. Develop Part II evaluation plan and bases.
   4. Complete Part II evaluations on valves not dynamically tested.
   5. Implement a tracking and trending program.

6. Resolve NRC and QA issues/develop and document engineering technical positions.

b. Engineering work has in many cases been deferred to the point where the failure to perform functions in preparation for testing work has negatively impacted testing. Examples were identified where changes to design parameters and margin requirements due to Engineering reviews which could have been completed prior to testing necessitated retest. Most Engineering activities not directly tied to field testing have been suspended in order to ensure sufficient resources to support field testing.

Examples: 1. Two retests were required on each of the valves SI-6, SI-8, and SI-18 as a result of margin improvement; 2. The effort to develop and refine MOV testing and maintenance procedures has stopped because personnel working on that project were reassigned to the field; 3. Resources were transferred from DBR preparation to field support activities, causing the Unit 1 DBR effort to languish uncompleted as we come out of the Unit 1 outage; 4. Some engineering work which could be performed in advance of testing, such as equipment accuracy calculations, is deferred to the field, significantly increasing testing time.

c. The Field Service Engineer Group is undermanned and undertrained, as indicated by workload transferred to other groups, overtime, backshift support, and hookup of test equipment.

d. Justification needs to be established for valves not dynamically tested in Unit 1, that could have been. This practice may be questioned by the NRC. Worst case would be to enter a forced outage to retest these valves. Engineering justification for not testing must be very strong.

e. If a world class organization is desired, direct program management should be by HL&P personnel, rather than by contractor personnel.

E.2 KEY AREA ASSESSED: PCF PROCESSING AND ZE-31 RETURN TO SERVICE

Strengths:

1. When interviewed, the Unit 1 Work Package Review SRO stated that when a package includes PCFs, he routinely verifies whether Return to Service is required per 0PGP03-ZE-0031 (ZE-31), and if so, verifies that the ZE-31 Return to Service Checklist (-4) has been completed and included in the package.

Areas for Improvement:

1. MOVATS package planners seem to be unaware of the PCF post-work completion processing requirements of 0PGP03-ZA-0103, step 4.8.2 regarding verification that current, complete PCF revisions are in the work package and regarding the need to provide a copy of the implemented PCFs to the Technical Support Engineering Group. This contributes to the observed problem where PCFs are not posted against affected documents in a timely manner following work implementation.

2. The Assessment Team identified examples of MOV-related PCFs affecting design documents which were not forwarded to Document Control upon installation completion. (Examples include 148848B, 178014A, 310270A, 177325B, and 167498A. PCFs 148848B and 178014A affect key drawings. SRs are status 65 or greater for all of these.)

3. Reviews of Work Packages demonstrated mixed results regarding design change Return to Service compliance with the requirements of 0PGP03-ZE-0031. A review conducted specifically on packages which appeared to represent examples of procedure breakdown identified only minor problems [lost Plant Impact and Training Coordination Forms (ZE-31-3) and slow update of the ZE-31 tracking database]. Completed Return to Service Checklists were in reviewed packages and redlining was verified to have been performed. Nonetheless, in a separate review of Work Packages with a larger sample size, Return to Service Checklists were found to be incomplete in some packages where PCFs were implemented (ref. SPR 940001).

E.3 KEY AREA ASSESSED: PART II QUALIFICATION

Strengths:

1. STP has bought into EPRI data which, when available, should provide industry current technical bases which can be applied to Part II valve qualifications.

Areas for Improvement:

1. No methodology has been established for qualifying valves per Part II. This effort has not been initiated.

2. A significant number of valves are being deferred from the Part I testing program to the Part II qualification program for Unit 1 (approximately 64 at this time, including 21 where the Unit 1 testing proved inadequate for qualification).

3. Document basis for the 80% flow Part I versus Part II criteria should be established.

4. Formal Engineering evaluations have not been made of important test data and Rate of Loading (Load Sensitive Behavior) test data.

E.4 KEY AREA ASSESSED: DESIGN BASIS REVIEW (DBR) DOCUMENTS

Strengths:

1. These documents can be made into useful vehicles for demonstrating Generic Letter 89-10 compliance.

Weaknesses:

1. There are conservative, incorrect assumptions in the design margin section of some DBRs, and stated as so, without addressing the affect of using the incorrect information. This appears unusual since the design margins are not met. NOTE: In the noted instances (1-SI-4A, B, & C), the valve is accepted based on test data.

2. DBRs are not handled as design documents. There is no second party review or approval and once completed they are not subject to records storage or retention requirements. Once they are completed, there are no plans to maintain them current.

3. There are recommendations/open items in the DBRs but there is no formal program to track these to closure (e.g., a finding that there were incorrect values used in a calculation which needs to be revised). There may not be any documented technical basis for the acceptability of the open item. There is an Open Items Database on a PC in the MOV group but no process in place to monitor/update the list. (Note: Review of the open items list for 17 DBRs found no open items which impact valve operability.) The DBR open items represent a significant unresourced engineering scope which is not currently being addressed.

4. Comments in the DBR checklists for addressing "NO" responses are sometimes not descriptive enough to permit the rationale to be readily understood by reviewers.

5. Some approved DBRs contain statements which would appear inflammatory to an outside reviewer. (e.g., the DBR for A1CVMOV003 states "No basis for lowering MEDP from 2774 psi" and "Design margin is negative for a MEDP of 2774 psi").

6. Pressure Locking and Thermal Binding evaluations are not being performed. The valves are only being evaluated as to whether the issue is potentially applicable. Guidelines for performing these evaluations have not yet been developed.

7. Consider having a review by Operations on all MEDP analysis and help in the review of Pressure Locking and Thermal Binding.

E.5 KEY AREA ASSESSED: CONFIGURATION CONTROL OF MOV DOCUMENTS

Strengths: None

Areas for Improvement:

1. The Unit 1 MOV database document has an excessive number of amendments increasing the probability of errors.

2. Vendor procedures for on-site maintenance activities are not screened under 10CFR50.59 when received and statused for use. SPR 940135 was initiated. (This is not unique to the MOV program.)

3. The signature traces from static and dynamic tests are not stored in RMS as a permanent record. The Addendum 44 data sheets, which summarize the evaluation of the traces, are considered the permanent record. Operability of a valve may become an issue if at some future time an unforeseen issue cannot be resolved by review of the Addendum 44 data sheets. The signature could also become important from a historical perspective when re-evaluating the MOV.

4. DBDs may not have been systematically updated to keep pace with the MOV program changes to MEDP or to valve stroke times (due to gear changes). A review and update effort is needed.

5. Limiter plate and torque switch settings may not have been determined in a consistent manner from valve to valve, due to lack of a policy. (Reference SPR 930519, Action C1)

F. TRACKING AND TRENDING PROGRAM

Strengths: None

Areas for Improvement:

1. The current corrective action processes employed at STPEGS do not have the capability to use a common coding system to identify causal factors unique to motor operated valves. As a result, the process to harvest those facts for input into the tracking and trending database requires a person with the same technical working knowledge as the technicians who perfo[illegible] the repair and test on the valve. Because of this, the accuracies of the da[illegible] provided to the database may not be to the same level as when taken during the actual test.

2. The tracking and trending program does not define the required inputs, formats, frequency, or interface needs with other plant programs. As a result of this, much of the information contained in test packages performed 1-2 years back have been omitted because of the lack of defined requirements.

3. The current staffing for implementing the MOV Tracking and Trending Program consist of one contractor. He is assigned to develop the baseline data. Currently, there is no HL&P counterpart to insure the consistent input and usage of the database development and maintenance.

G. CORRECTIVE ACTION PROGRAM

G.1 KEY AREA ASSESSED: STATION PROBLEM REPORTS

Strengths:

1. Based upon the trends apparent to the team from review of MOV-related SPRs initiated since February 1, 1993, problems attributed to less than adequate procedures and documentation are on the decline.

2. There is an increased understanding by program personnel that they are responsible for identifying, reporting, and resolving problems, and elevating problems that cannot be resolved.

3. The assessment team concurred that the classification of SPRs with respect to mode restraints was appropriate.

Areas for Improvement:

1. Based upon the trends apparent to the team from review of MOV-related SPRs initiated since February 1, 1993, procedure adherence problems and problems with maintenance practices have increased.

2. Timeliness:
Timeliness of SPR investigation and corrective action is less than adequate. At the time of review, two investigations and 22 corrective actions were more than six months old. In one case, failure to implement an SPR corrective action led to a field observation by the assessment team of an instance of failure to follow procedure.

Procedure 0PMP05-ZE-0309 is classified as use control "Referenced," which means it does not have to be open and followed step-by-step at the work site. A corrective action to SPR 931171 committed to revise this procedure to use control "In Hand," which would require step-by-step use in the field. The assessment team noted an instance while monitoring field work where requirements of this procedure were not observed until pointed out by the Assessment Team member. Had the procedure been revised to "In Hand" use control, the technicians would have been unlikely to have missed the requirement. Procedure 0PMP05-ZE-0309 was revised January 1, 1994, and the commitment was not incorporated. The commitment due date has been extended twice.

The investigation of SPR 932889 was not completed on time. The due date was December 5, 1993. A root cause has not been defined as of January 11, 1994, and new torque switches are being expedited so they can be installed prior to Mode 4.

3. Ineffective Corrective Action/Root Cause Analysis:
Corrective Actions to improve MOV maintenance taken as a result of SPRs 932129 and 932194 did not appear to be effective in preventing recurrence of problems. SPRs 932328, 932570, and 932589 involving similar problems were later written. Similarly, corrective actions taken for SPR 933299 did not prevent SPRs 933519, 933524, and 940010.

4. All MOV-related SPR investigations assigned to the MOV Engineering Group are being investigated by a single contract engineer. This is excessive workload for one individual. Also, assigning this work to an HL&P engineer instead of a contract engineer would enhance HL&P involvement in the root cause/corrective action process.

G.2 KEY AREA ASSESSED: ITI MOVATS DISCREPANCY REPORTS (DRs)
ITI MOVATS performs work at STP under the ITI MOVATS Quality Assurance program. Under that program, as required by 10CFR50 Appendix B, there is a process for nonconformance control. The ITI MOVATS nonconformance control document is the Discrepancy Report.
Strengths:
1. Though the program does not require it (except for use-as-is dispositions), all DRs are routed through HL&P Field Engineering and/or the MOV Engineering Group for disposition approval. Items classified as Use-as-is or Repair are transferred to the HL&P program via the Plant Change Form (PCF), which ensures that HL&P requirements such as 10CFR50.59 screening are addressed.

Areas for Improvement:

1. Allowing the use of a vendor's nonconformance control document for processing of discrepancies/deficiencies on HL&P equipment in installed locations creates a satellite nonconformance control process, which could possibly escape the STP station trend program.

2. Examples of DR dispositions which are arguably use-as-is or repair were, however, identified which were not handled via PCF. These cases were not considered use-as-is or repair by the dispositioning engineers. These examples are cases of interpretation regarding the implementation of the terms use-as-is, repair, and rework.

3. DR dispositions are not always detailed and specific. Frequently, there is insufficient information documented to understand the basis for closure. (Where further investigation was conducted beyond DR review, basis for closure did exist.)

G.3 KEY AREA ASSESSED: OPERABILITY EVALUATIONS

MOV-related Operability Evaluations performed under Conditional Release Authorizations (CRAs) and Justifications for Continued Operation (JCOs) were assessed. No MOV-related JCOs were identified, effectively limiting the below-discussed assessment to CRAs. Operability reviews performed under the SPR program were reviewed along with the SPRs, and no issues were identified.

Unit 1 control room tracks conditional release requests via a tracking log maintained with the OTL index. Logging of requests for Conditional Releases did not start until June, 1993. A spot check was made by running reports from the PCF database and from WMS identifying CRA requests for Unit 1. No cases were identified in which a CRA request remains open on an unworked Service Request. (Unit 2 was not assessed.)

Strengths:

1. Logging of new CRA requests in the CRA index in recent months has been consistently performed.

Areas for Improvement:

1. CRAs and SRs are not being retained in closed work packages. These documents provide documentation of the basis of operability designs. SPR 940134 was initiated.

2. Operations had taken no evident action to follow up on apparently overdue CRA requests which were more than one month old. (9 cases; CRAs are normally due within 1-2 days). The open requests were dispositioned with the aid of the assessment team.

3. No backfitting of the CRA Index for CRAs requested prior to June 1993, has been made.

4. The WMS field for whether a CRA request was made is not accurate. Some examples of recently processed SRs when a CRA was requested and WMS does not reflect this include HG-158365 (September 19, 1993), MB-205290 (December 3, 1993), AF-207236 (December 15, 1993).

5. The Unit 1 Control Room does not have copies of all CRAs for equipment operability decisions for unworked SRs. The Unit 1 Control Room does not have knowledge of all unworked SRs for which a CRA was requested.

G.4 KEY AREA ASSESSED: OERs, VETIP, COMMITMENT TRACKING
MOV-related VETIP and OER packages reviewed appear satisfactory.
Strengths: None

Areas for Improvement:

1. There is no program established for the purpose of tracking NRC (or other) commitments to ensure that commitments are maintained. Although an action item tracking system exists (LCTS), nothing requires LCTS update when the method of implementation changes. (Reference SPR 931779)

G.5 KEY AREA ASSESSED: NRC GL 89-10 SUPPLEMENT #5
Strengths: None

Areas for Improvement:

1. Critical historical data on "As Found", deteriorated condition, malfunction, inspection, analysis, repair, or alteration (PCFs), are vaulted and a composite record for each valve is not maintained in an accessible format/database as required by GL 89-10, paragraph H.

2. 0PGP07-ZE-0007 Rev 1, MOV Tracking and Trending Program, approved September 28, 1993, and made effective January 1, 1994, has not been fully implemented to track and trend data collected to date.

3. Overthrusted MOVs identified in SPRs (930365 and 932991), and SRs (163610, 88198, 88199, 88219, 88218, 309889, 88221, 88222, 101889, 169551, 88223, 88224, 213206, and 177214), which may be identified and dispositioned as being operable with a "one time only" overthrust condition are not tracked to ensure that a "second" overthrust condition will identify them as being inoperable.

4. Some valves (SI-MOV-0006A, 6B, 6C, 8A, 8B, 8C, 18A, 18B, 18C) have an identified insufficient Degraded Voltage Capability (DVAC) Thrust margin over minimum required trust when testing inaccuracies are considered. Any additional thrust to overcome valve deterioration, DP, or Spring Pack relaxation during DVAC may result in a "Locked Rotor" condition (SPR 921137, 921304) (see SPR 932094 for MOVs affected by Spring Pack relaxation)

5. SPR 932094 documents a condition that needs to be tracked and closely monitored to verify that further reductions in available torque margins do not result in MOV failure.

H. LONG TERM PROGRAM

H.1 KEY AREA ASSESSED: PROGRAM IMPLEMENTATION

Strengths:

a. Most of the key elements of the MOV long-term program have been well defined in the Motor Operated Valve Program (0PGP03-ZE-0037).

Areas for Improvement:

1 NRC Inspection Report dated July 20, 1993, indicated that "a revised motor-operated valve trending program was scheduled for full implementation by September 1993." This trending program has not been fully implemented.

2. Multi-department capabilities in the form of MOV testing, actuator refurbishment, and MOV qualification training are not being developed to support the MOV long-term program.

3. Inclusion of the MOV long-term program in the Business Plan would generate the visibility and support the program deserves.

4. A training and qualification program to support the long-term program has not been implemented.

I. GENERAL OBSERVATION

USE OF VENDORS QA/QC PROGRAMS FOR WORK ONSITE

Section 7.0, "PROCUREMENT', of the STPEGS Operations Quality Assurance Plan (OQAP) describes the requirements to examine the procurement process of items and services for use on safety systems, structures, and components. These requirements are implemented through Quality Assurance Procedure QAP-2.4, "QUALITY ASSURANCE EVALUATION OF VENDORS" and 0PGP04-ZA-0108, "CONTROL OF VENDOR DOCUMENTS".

Section 6.2.1 of QAP-2.4 describes the process of confirming the ability of vendors to meet the requirements of 10CFR50, Appendix B while they produce their product or conduct their service. When quality standards have been met and evidence that they are being maintained, the vendor's name is listed on the Approved Vendors List.

Because this process regularly reviews the vendors work and confirms the continued oversight of the vendor's Quality Assurance/Quality Control Program, the choice to continue the use of vendor provided QA/QC on the work conducted within the scope of the vendors procedures is acceptable.

ATTACHMENT 2
PEOPLE INTERVIEWED/DOCUMENTS REVIEWED

PEOPLE INTERVIEWED

Ken Blanchard
Doug Eastridge
R. L. Fotter
Richard Kersey
Jim Parish
Mark Griger
Kelly Eslinger
Wayne Fullerton
Chuck Rowland
Larry Lundstrom
Mike McGehearty
Steve Wilson
Jay Smead
Paul Vancil
Larry Lundstrom
John Wise
Gary McGee
Frank Cox
Larry Battaglia
Mike Gilbert
Arden Aldridge
Michael Porter
Ali Karimi-Taleghani
D. Vaccaro
M. Mcdermott
D. Roachell
B. Martin
Ken Coates
Larry Kelly
R. Gasser
Nathan Corrick
Greg Corbitt
J. Hamlin
G. Janak
M. Berrens
S. Melancon
T. Greer

DOCUMENTS REVIEWED

HL&P PROCEDURES AND INSTRUCTIONS:

0PEP07-ZE-0007	MOV Tracking and Trending Program
0PGP03-ZA-0002	Plant Procedures
0PGP03-ZA-0003	License Compliance Review
0GPG03-ZA-0039	Plant Procedures Writers Guide
0PGP03-ZA-0090	Work Process Program
0PGP03-ZA-0103	Plant Change Form Processing
0PGP03-ZA-0108	Control of Vendor Documents
0PGP03-ZM-0021	Control of Configuration Changes
0PGP03-ZM-0025	Post-Maintenance Testing Program
0PGP03-ZM-0002	Preventive Maintenance Program
0PGP03-ZO-0039	Configuration Management (Tagging)
0PGP03-ZX-0002	Corrective Action Plan
0PMP02-ZG-0004	Bolted Joint Disassembly and Assembly
0PMP05-ZE-0301	EIM Motor Inspection and Lube
0PMP05-ZE-0309	MOV Diagnostic Testing
0PMP05-ZE-0312	Limitorque MOV Actuator Lubrication
0PMP05-ZE-0313	Non-Safety Related EIM MOV Actuator Lubrication
0PSP11-ZA-0005	LLRT Calculations and Guidelines
EI 4.07	Limitorque Actuator Inspection
IP-3.07Q	Section XI Repair and Replacement Program

ITI MOVATS Procedures:

M/OP-1.0	Limitorque Operators Removal and Installation, Models SMB-000 through SMB-4, Rev. 2
M/OP-2.0	Limitorque Operator Overhaul, Models SMB-000 and SMB-000, Rev. 1
M/OP-3.0	Limitorque Operator Overhaul, Models SMB-0 through SMB-4, Rev. 2
M/OP-4.0	Limitorque Operators Removal and Installation, Models HBC-0 through HBC-3 Gear Box Maintenance, Rev. 1
M/OP-5.0	Limitorque Operators Removal and Installation, Models HBC-4 through HBC-10 Gear Box Maintenance, Rev. 2
M/OP-12.0	Limitorque Operators Disassembly and Reassembly, Models SB-00 through SB-4 Spring Compensator, Rev. 2
M/OP-16.0	Limitorque Operators Disassembly and Reassembly Models SBD-00 and SBD-3 Compensator, Rev. 3
M/OP-22.0	Cable Terminations, Wire Size 8 AWG through 16 AWG, Rev. 0
M/OP-23.0	Raychem Installation, Rev. 0
VRP-6.0	Live-load and Alternative Valve Packing Procedure, Rev. 0
VRP-7.0	Rockwell Cast Steel Pressure Seal Non-Return Globe Valve Inspection and Maintenance Procedure, Rev. 0
VRP-8.0	Westinghouse Gate Valve Maintenance and Inspection Procedure, Rev. 0
VRP-9.0	Velan Globe Valve Maintenance and Inspection Procedure, Rev. 0
VRP-10.0	Rockwell 150# Class McCannalok Butterfly Valve Maintenance and Inspection Procedure, Rev. 0

DOCUMENTS REVIEWED

VRP-11.0	Anchor Darling Gate Valve Maintenance and Inspection Procedure, Rev. 0
VRP-12.0	Cobalt Reduction Guideline Procedure, Rev. 0
VRP-13.0	Anchor Darling Pressure Seal Gate Valve Maintenance and Inspection Procedure Rev. 0

ITI MOVATS QUALITY ASSURANCE PROCEDURES

QAP-5.0	Control of Field Services
QAP-5.1	Control of Travelers and Work Packages
QAP-12.1	Control of Measuring and Test Equipment at Field Locations
QAP-15.0	Control of Nonconforming Materials, Parts or Components
QAP-15.1	Discrepancy Reporting

MOV ENGINEERING PROCEDURES AND INSTRUCTIONS

EI 4.06	MOV Design-Basis Review
IP-3.20Q	10CFR 50.50 Evaluations

SPRs:

930190
930365
930469
930470
930492
930519
930558
930564
930603
930707
930782
930789
930885
930925
931035
931171
931237
931259
931335
931340
931479
931654
931679
931790
931813
931828
931830
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931882
931938
931946
931953
932040
932129
932194
932211
932273
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932417
932446
932458
932498
932570
932589
932601
932619
932696
932733
932888
932889
932895
932925
932949
933015
933031
933033
933062
933118
933198
933221
933299
933378
933406
933452
933469
933519
933524
933912
940010
940029
940029
940045
940050
940056
940067
940082
940119

Maintenance Training Bulletin #MTB-93-010

ITI MOVATS Permanent Training Record on STP Material dated 1-11-94.

Preventive Maintenance Activities:

92024416
93000640
93000679
93000815
93000933
93001034
93001040
93001048
93001249
93008126
93030722
93000416

Service Requests:

156424
163614
163620
163622
163650
171429
176069
177341
179801
179806
179856
179857
179887
204245
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204699
204901
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AF-163647
CC-309989
RA-163605
SI-163615

DBRs:

A1SIMOV0004A
A1SIMOV0004B
A1SIMOV0004C
A1SIMOV0008A
A1SIMOV0008B
A1SIMOV0008C
A1SIMOV0011A
A1SIMOV0011B
A1SIMOV0011C
A1SIMOV0012A
A1SIMOV0012B
A1SIMOV0012C
A1SIMOV0013A
A1SIMOV0013B
A1SIMOV0013C
A1SIMOV0018A
A1SIMOV0018B
A1SIMOV0018C
A1SIMOV0031A
A1SIMOV0031B
A1SIMOV0031C
A1AFMOV7525
N1RHMOV0067A
N1RHMOV0067B
N1RHMOV0067C

89-10 Program Plan (10-6-93)

Assessment 93-01 Report

1RE04 Post Outage Review by Jim Parish

Assessment 91-01 Report

9ECV11#1 Sheet 01

Unit 1 Conditional Release Tracking Log

Generic Letter 89-10 through Supplement 5.

ASME Section XI

EI-4.07

Reg Guide 1.33

OQAP

ITI MOVATS DRs statused as of January 14, 1994

ATTACHMENT 3
DETAILED LIST OF ACTIONS

a. Develop a plan/schedule that justifies the operability of those MOV that have not been tested at MEDP. Some valves can not be dynamically tested, others were dynamically tested but at a lower pressure and flow than would occur at MEDP. Review EPRI data to determine how far below 80 percent MEDP can thrust/torque be extrapolated to demonstrate operability. Justification should be provided for low margin MOV's.

b. Follow EPRI Performance Prediction Program (PPP) products closely over the next 6 months and use that information to justify operability where possible. In some cases EPRI data may call into question the operability of a MOV so that evaluation of this data must be made to insure that all bases are covered. This includes sending a technical representative to the MOV USERS Group (MUG) meeting in New Orleans and the NRC pressure locking and thermal binding meeting immediately following the MUG Meeting.

c. Determine which valves require internal valve measurements for utilize EPRI PPP computer codes or methodology to justify operability. Write contract to valve vendors for those measurements.

d. Determine which valves need to be justified by industry testing/similarity and proceed to obtain the information.

e. Review STP data from identical valves as a group to determine if anomalies are occurring within the group. This data may allow justification of MOV operability on those MOVs that could not be tested at MEDP.

f. Conduct a top to bottom review of all open administrative activities (IFIs, SPRs, Audit Responses, etc.) to determine which must be done prior to 6/28/94, and which are long term programmatic responses. Allocate adequate resources to accomplish the near term activities.

g. Schedule and implement MOV Assessment Team recommendations.

h. Schedule the implementation of the tracking and trending data base. Assign long term maintenance to an HL&P employee.

i. Implement a pressure locking and thermal binding program that will satisfy the NRC.

j. Insure Design Basis Documents (DBD's) are updated to include MOV closure time changes and MEDP changes. Establish a formal tracking system for DBR open items.

k. Develop a set of policy statements that can be used as guidance for testing and engineering evaluation.

m. Recommend that a second level review be done on the Design Basis Review documents.

n. Update as soon as possible the design database, test data database, and implementation of the tracking and trending database.

ATTACHMENT 4

PROGRAM SPECIFIC PERFORMANCE ASSESSMENT CRITERIA

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
SPEC 1	COMPLIANCE WITH THE GNL 89-10 REQUIREMENTS DEMONSTRATING VALVE OPERABILITY		
SPEC 1A	READING OF TEST TRACES AND DOCUMENTATION OF RESULTS	T/ES	T-X
SPEC 1B	TESTING EQUIPMENT CONTROL (M&TE)	T	T-X
SPEC 1C	DATA EVALUATION AND USE OF TEST EQUIPMENT ACCURACIES	ES	T-X
SPEC 1D	EXTRAPOLATION OF DYNAMIC TEST DATA TO MEDP CONDITIONS	ES	ES-P
SPEC 1E	EVALUATE STATUS OF TEST PACKAGE REVIEWS	ES	ES-X
SPEC 1F	USE OF EPRI PERFORMANCE PREDICTION PROGRAM DATA FOR MEDP EXTRAPOLATION	ES	ES-X
SPEC 2	CONFIGURATION CONTROL		
SPEC 2A	CONFIGURATION CONTROL OF TORQUE SWITCH SETTINGS	ES	ES-P
SPEC 2B	CONFIGURATION CONTROL OF LIMITER PLATE SETTINGS	ES	ES-P
SPEC 2C	CONFIGURATION CONTROL OF SPRING PACKS AND GREASE RELIEF	M/ES	ES-P
SPEC 2D	CONFIGURATION CONTROL OF GENERAL MOV NAMEPLATE AND TESTING DATA	ES	ES-P
SPEC 2E	CONFIGURATION CONTROL OF JUMPERS	M/T	
SPEC 2F	CONFIGURATION CONTROL OF EQ REQUIREMENTS FOR MOVs	ES	
SPEC 3	CORRECTIVE ACTION PROGRAM		
SPEC 3A	ADEQUACY OF ROOT CAUSE EVALUATIONS	C	X
SPEC 3B	ADEQUACY OF CORRECTIVE ACTIONS BOTH TECHNICALLY AND TIMELINESS	C	X
SPEC 3C	ARE CORRECTIVE ACTIONS EFFECTIVE AND IS FOLLOW-UP OCCURRING	C/PM	C-X
SPEC 3D	ARE ALL THE INDIVIDUAL CORRECTIVE ACTION ISSUES CONSIDERED TOGETHER INDICATIVE OF OTHER UNIDENTIFIED ISSUES	C/PM	C-X
SPEC 3E	DO ANY OPEN CORRECTIVE ACTION PROGRAM ISSUES NEED TO BE ADDRESSED PRIOR TO PLANT OPERATIONS	C	C-X
SPEC 4	MATERIAL CONDITION		
SPEC 4A	MOV AS LEFT CONDITION-COMPLIANCE WITH DESIGN DOCUMENTS-EQ	M/T	M-P
SPEC 4B	MOV LUBRICATION APPLICATION/ADEQUACY	M/T/ES	T-P
SPEC 4C	MATERIAL CONDITION OF SWITCH COMPARTMENT	M/T	N-P

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
SPEC 4D	MATERIAL CONDITION SURROUNDING MOV	M/T	M-X
SPEC 5	TEST PERFORMANCE		
SPEC 5A	ADEQUACY OF PROCEDURES	ES	PM-X
SPEC 5B	TESTING PROVIDING ANTICIPATED RESULTS	ES	PM-X
SPEC 5C	ARE TESTING SCHEDULES ADEQUATE	PM	M-P
SPEC 5D	ADEQUACY AND ACCURACY OF TESTING DOCUMENTATION	ES	T-X
SPEC 6	OVERSTRESS EVALUATIONS		
SPEC 6A	ARE OVERTORQUE AND OVERTHRUST CONDITIONS BEING ADEQUATELY IDENTIFIED AND RESOLVED	M/T/ES/C	C-P
SPEC 7	MATERIAL CONTROL		
SPEC 7A	REPLACEMENT PARTS CLASSIFICATION	M	X
SPEC 7B	CONTROL OF CONSUMABLES	M/T	M-X
SPEC 7C	CONTROL OF REPLACEMENT PARTS/MATERIAL	M/T	M-X T-P
SPEC 7D	MAINTAINING TRACEABILITY OF PARTS/MATERIAL	M/T	M-X
SPEC 8	PROGRAM PLAN		
SPEC 8A	DOES THE PROGRAM PLAN ADEQUATELY IDENTIFY THE REMAINING PROGRAM REQUIREMENTS	PM/ALL	ES-P PM-X
SPEC 8B	ARE TASKS ADEQUATELY SCHEDULED, MONITORED, ASSESSED AND RESOURCE LOADED	PM/ALL	PM-X
SPEC 8C	ARE THE MOV PROGRAM LONG TERM PROGRAMMATIC ISSUES BEING ADDRESSED	PM/ALL	ES-P PM-X
SPEC 8D	ARE THE ORGANIZATIONAL RESPONSIBILITIES ACCEPTABLE AND THE INTERFACES EFFECTIVE	ALL	ES-P PM-X

MAINTENANCE PERFORMANCE ASSESSMENT CRITERIA

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
MA.1.A	The organizational structure is clearly defined.	M/T	M-X
MA.1.B	Staffing and resources are sufficient to accomplish assigned tasks.	M/T	M-X
MA.1.C	Responsibilities and authority of each organizational position are clearly defined and understood. Authorities are commensurate with responsibilities. Personnel are held accountable for carrying out assigned responsibilities.	M/T	M-X
MA.1.D	Contractor tasks, responsibilities, authorities, and interfaces are clearly defined and understood	M/T	M-X
MA.1.E	Interfaces with supporting groups, including corporate, are clearly defined and understood.	M/T	M-X
MA.1.F	High performance standards for station maintenance activities are established, communicated, and reinforced.	M/T	M-X
MA.1.G	Managers and supervisors routinely observe maintenance activities to identify an correct problems and to ensure adherence to station policies and procedures including industrial safety and radiological protection. Supervisor presence in the field contributes to improved job performance.	M/T	M-P
MA.1.H	Managers maintain an awareness of the key aspects of maintenance through appropriate monitoring of performance, material condition, and maintenance records. Goals are used to improve performance in selected areas. Corrective action is taken when adverse conditions or trends are noted.	M/T	M-P
MA.1.I	Administrative controls are effectively implemented in the conduct of maintenance activities that affect a safe and reliable plant operation. Examples of such activities include scheduling of preventive maintenance, use of procedures, implementation of configuration controls, use of special tools and lifting equipment, and use of measuring and test equipment.	M/T	M-P T-X
MA.1.J	Contract and other nonplant personnel use the same (or equivalent) plant-approved policies, procedures, and controls and the same workmanship standards as plant maintenance personnel.	M/T	T-X
MA.1.K	Personnel are actively encouraged to develop methods to improve safety, reliability, quality, and productivity.	M/T	T-X M-P
MA.2.B	Material deficiencies are identified, tracked and in the work control system, and corrected in a timely manner.	ALL	ES-XP T-XP M-P
MA.3.A	Work control methods and tracking provide management with an accurate status of maintenance planning and outstanding maintenance work.	M/T	M-X
MA.3.B	Control of work is accomplished through the effective use of a priority system. The backlog of work is effectively managed and controlled.	M/T	M-X
MA.3.D	The work to be accomplished is clearly defined by a work document that identifies the existing material or equipment deficiency and condition, prescribes appropriate approvals, and includes applicable controlled procedures, instructions, and drawings. Clear statements are included to describe the potential impact on plant operations when equipment is taken out of or placed in service.	M/T	M-X T-XP
MA.3.F	ALARA concepts are used in work planning to minimize man-rem exposure.	M/T	M-X

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
MA.3.G	Scheduling and coordination of maintenance activities optimize the work done within tagout boundaries and avoids unnecessary removal of equipment and systems from service and use.	M/T	M-X
MA.3.J	Post-maintenance test results are documented and reviewed to ensure proper system/equipment performance prior to returning the system to service. Where appropriate, post-maintenance test results are used as base-line data for future maintenance assessment and troubleshooting.	M/T	T-X
MA.3.K	Completed work control documents are reviewed in a timely manner to check proper completion of maintenance work, to confirm accurate and appropriately detailed documentation of work performed, and to verify that corrective action resolved the problem.	M/T	S-P
MA.3.L	Troubleshooting activities are controlled by work documents that include applicable procedures and/or instructions with appropriate approvals, limitations, and precautions on the scope and boundaries of the activity and control over configuration changes.	M/T	M-X
MA.4.A	Personnel exhibit professionalism and competency in performing assigned tasks that consistently result in quality workmanship. When unexpected conditions arise, personnel seek appropriate guidance before proceeding.	M/T/PM	M-X
MA.4.B	Maintenance personnel identify and pursue corrective action for plant deficiencies with a goal of maintaining equipment and systems in an optimum material condition.	M/T	M-X
MA.4.E	Maintenance work is properly authorized, controlled, and documented. Documentation includes sufficient details of as-found and as-left conditions of the equipment and work performed to support root cause analysis of problems.	M/T	M-P T-X
MA.4.F	Pre-and Post-job briefings are effectively used.	M/T	M-P
MA.4.G	Work activities are performed in accordance with controlled procedures, instructions, and drawings as required by plant policy. Craftsmen and other maintenance personnel identify and provide timely feedback to correct procedural problems.	M/T	PM-X
MA.4.H	Good maintenance practices such as those listed below are followed:	M/T	
MA.4.H.1	Work practices are technically sound.	M/T	M-X
MA.4.H.2	Proper tools and equipment are used.	M/T	M-P
MA.4.H.3	Good industrial safety, radiological protection, and ALARA practices are followed.	M/T	M-X
MA.4.H.4	Foreign materials and contaminants are excluded from open systems and equipment.	M/T	M-X T-X
MA.4.H.5	Work sites are clean and orderly.	ALL	P
MA.4.J	Maintenance rework is identified and documented. Actions to determine causes and corrective actions to prevent recurrence, including periodic reviews for generic implications and trends, are taken to minimize rework.	M/T	M-P
MA.6.A	The preparation, review, approval, and revision of procedures and other work-related documents, such as vendor manuals and drawings, are properly controlled.	ES	P

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
MA.6.C	Procedures and other work-related documents, such as vendor manuals, drawings, reference materials, and posted job performance aids used in support of maintenance, are technically accurate and up to date.	ES/M/T	ES-X M-P
A.6.D	Procedures are readily available and clearly identified.	M/T/ES	M-X ES-XP
MA.6.E	New and revised procedures are reviewed for technical accuracy prior to initial use and are checked by such means as verification and validation techniques to ensure correctness and usability prior to or during initial use.	M/T/ES	M-X ES-XP
MA.6.F	Procedures are clear, concise,a nd contain adequate information for users to understand and perform their activities effectively. Necessary elements include the following.	M/T/ES	ES-XP
MA.6.G	Hold points, such as quality and radiological protection checks, are included in procedures, as needed.	M/T/ES	ES-X T-P
MA.6.K	A mechanism exists that encourages feedback from the users of procedures to the procedure writers identifying such things as errors in procedures, difficulties in using procedures, or suggestions for improving procedure content or format.	ALL	ES-X PM-X
MA.7.A	Maintenance history records are maintained for systems, equipment, and components that affect safe and reliable plant operations.	ES	P
MA.7.B	Maintenance activities, equipment problems, and inspection and test results are appropriately documented.	M/T	M-P T-X
MA.7.C	Maintenance history records and Nuclear Plant Reliability Data System (NPRDS) information are reviewed and used as appropriate in planning for corrective maintenance, modifications, and preventive maintenance.	ES	X
MA.7.E	Maintenance history and industry component-based operating experience information is periodically reviewed to identify equipment trends and persistent maintenance problems and to assess the impact on station reliability. Maintenance program adjustments are made or other corrective actions are taken as needed.	ES	X
MA.8.A	Maintenance facility size and arrangement promote the safe and effective completion of work. Appropriate facilities are provided for work on contaminated components.	M/T	M-X
MA.8.B	Work area lighting and other environmental conditions promote safe and effective working conditions.	M/T	M-X
MA.8.C	Work areas are maintained in a clean and orderly condition.	M/T	M-X
MA.8.D	Proper tools, equipment, and consumable supplies are available to support work requirements. Loading, lifting, and transport equipment is available for movement of large equipment.	M/T	M-X
MA.8.E	Suitable storage is provided for tools, supplies, and equipment. Special tools, jigs,a nd fixtures are identified and stored to permit ready retrieval when needed.	M/T	M-X T-X
MA.8.H	Facilities, equipment, and tools are maintained in good repair.	M/T	M-X
MA.8.I	Measuring and test equipment is calibrated and controlled to provide accuracy and traceability. Out-of tolerance test equipment is removed from service. Plant equipment calibrated with out-of-tolerance test equipment is evaluated in a timely manner for operability and is recalibrated as necessary.	M/T	T-X
MA.8.J	Equipment is accessible for maintenance activities.	M/T	X

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
MA.9.E	Methods are established to acquire replacement parts not available from the original supplier. Engineering approval is received for substitutions that affect plant configuration.	PM/C	PM-X C-X
MA.9.G	Effective material procurement status is maintained including accurate stock records, history of purchase orders, and traceability of safety-related parts and material.	PM	X
MA.9.H	Materials are identified and stored in a manner that results in timely retrieval and minimum damage caused by storage practices.	PM	X
MA.9.I	Safety-related parts and components are properly controlled, segregated, and identified in all material storage areas.	PM/M	PM-X M-X
MA.9.K	Parts and materials issued for installation are properly controlled. Unused parts and materials are promptly returned to a controlled storage area and are receipt-inspected to ensure continued usability. Safety-related parts are readily traceable from purchase to installation or return to stock.	M/T/PM	PM-X M-P
MA.9.M	Equipment and materials used by nonplant personnel are subject to inspection, storage, and issue controls equivalent to items received through normal plant processes.	PM	X
MA.10.A	Maintenance is performed by or under the direct supervision of personnel who have completed applicable formal qualification for the tasks to be performed.	M/T	T-X
MA.10.C	On-the-job training requirements are identified, completed, and documented prior to assignment to perform tasks independently.	M/T	T-P
MA.10.D	Continuing training effectively addresses plant hardware and procedure changes, infrequently used skills, and lessons learned from in-house and industry and operating experience.	C/M/T	C-X
MA.10.E	Qualification standards and evaluation methods are adequate to verify trainee and contractor competence for assigned functions at the station.	M/T	T-X
MA.10.H	The knowledge and practical abilities of contract maintenance technicians and other nonplant maintenance personnel are equivalent to those of station maintenance personnel for the functions to which they are assigned.	M/T	M-X

ENGINEERING PERFORMANCE ASSESSMENT CRITERIA

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
ES.1.B	Staffing and resources are sufficient to accomplish assigned tasks.	ES	X
ES.1.C	Responsibilities and authority for each organizational position are clearly defined and understood. Authorities are commensurate with responsibilities. Personnel are held accountable for carrying out assigned responsibilities.	ES	X
ES.1.D	Contractor tasks, responsibilities, authorities, and interfaces are clearly defined and understood.	ES	X
ES.1.F	High performance standards for engineering support activities are established, communicated, and reinforced.	ES	X
ES.1.G	Administrative controls are employed in the conduct of engineering support activities that affect safe and reliable plant operation. Examples of such activities include responses to requests for engineering assistance, resolution of nonconforming conditions, and use and control of plant design requirements.	ES	X
ES.1.H	Engineering support personnel are actively encouraged to develop improved methods of meeting safety, quality, and productivity goals.	ES	X
ES.1.I	Engineering support personnel coordinate and monitor technical services provided by outside organizations and contractors in cognizant areas.	ES	X
ES.1.J	The effectiveness of engineering support is monitored and periodically assessed; the results are used to improve engineering support.	ES	ES-X C-X
ES.1.K	Engineering support personnel appropriately monitor, and have sufficient expertise regarding plant systems, structures, components, and operations to effectively identify, investigate, and resolve plant problems.	ES	X
ES.1.L	Engineering support personnel effectively e=implement lessons learned and recommendations resulting from in-house and industry operating experience pertinent to their activities.	ES/C	X
ES.1.N	Training of engineering personnel is monitored by engineering line management to ensure training is adequate and appropriate and that engineering personnel are well trained.	ES	X
ES.2.B	Procedures used for surveillance testing contain sufficient detail to ensure safe plant operation during testing and provide for consistent test performance and accurate results. Procedures simulate, as nearly as practical, the actual conditions under which the system must operate on demand.	ES	P
ES.2.C	The technical bases for surveillance tests and methods (including references) are documented and available.	ES	X
ES.2.D	Acceptance criteria are clearly identified and prompt corrective action is taken when acceptance criteria are not met.	ES	X
ES.2.E	Reviews of completed surveillance test data are timely and sufficient to ensure that all acceptance criteria are met.	ES	X
ES.2.F	Actual equipment performance and test data are trended to identify degrading conditions and actions to be taken to improve safety and reliability.	ES	X
ES.2.G	Instruments and tools used for surveillance testing and in-service inspection activities are periodically calibrated or tested and have sufficient accuracy and sensitivity.	ES	T-P

OUTAGE MANAGEMENT PERFORMANCE ASSESSMENT CRITERIA

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
OM.2.B	Pre-outage milestones are established and timely corrective actions are taken if not being met. Pre-outage planning begins sufficiently early to ensure enough time is available to obtain necessary services, equipment, parts, and personnel needed to support the outage.	PM	
OM.2.C	Outage planning includes consideration of contingencies for events that may occur as a result of outage activities.	PM	
OM.2.D	Outage planning includes the identification of necessary manpower to support the outage.	PM	
OM.2.E	Elements of work are defined into manageable segments that can be accomplished by a typical work unit, such as a maintenance work crew, on a definite schedule that allows completion status to be monitored.	PM	
OM.2.F	Outage schedules are used to organize and sequence work elements. The schedules provide management with a clear, concise, and understandable method of tracking completion of outage milestones. Supporting schedules are developed where necessary. Schedules are developed by implementing groups and are then integrated into an optimum plant outage schedule that is accepted and supported by all outage groups.	PM	
OM.2.G	Schedules are updated on a timely basis to reflect current conditions. Deviations from outage plans and schedules are communicated to the proper level of management for action.	PM	
OM.2.H	Outage plans and schedules are communicated to and used by personnel responsible for outage activities.	PM	
OM.2.J	A cutoff date for adding outage work scope is established and a procedure developed to control additions after the cutoff date.	PM	

MONITORING AND ASSESSMENT CRITERIA

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
OA.2.A	Managers and supervisors monitor station activities on a routine basis. Results of monitoring by station personnel and independent groups, such as quality assurance, are used by managers and supervisors to improve station performance.	PM	X
OA.2.B	Managers and supervisors frequently tour the station and observe ongoing work activities. Effective corrective actions are taken for noted problems.	PM	X
OA.2.C	Managers periodically evaluate the monitoring activities of subordinate managers and supervisors.	PM	X
OA.2.D	Operational information reflecting station performance is analyzed and trended, and the results are reviewed by appropriate managers.	PM	X
OA.2.E	Root causes are determined for problems identified during monitoring and assessment of station activities and by analysis of trends.	PM/C	C-X
OA.2.F	Managers routinely review progress in achieving station objectives.	PM	X
OA.2.G	The progress on action plans, corrective actions, and commitments is monitored and tracked.	PM	X
OA.3.A	Open communication exists at all organizational levels. Feedback to managers from station personnel is solicited.	PM	X
OA.3.B	Managers encourage and foster cooperation and team work between station organizations, especially where successful implementation of work activities requires support from several groups.	PM	X
OA.3.C	Station personnel demonstrate a conservative approach to operational activities, and their decisions reflect a sense of responsibility for reactor safety.	PM	X
OA.3.D	Managers establish high standards of performance and reinforce implementation of these standards when performance does not meet expectations.	PM	X
OA.3.E	Managers reinforce, through delegation of responsibility, individual ownership and accountability. Personnel are encouraged to admit errors, seek help when needed, and assume responsibility for their decisions and actions.	PM	X
OA.3.J	Managers establish priorities to ensure that personnel are able to obtain necessary resources to complete assigned tasks.	PM	P
OA.7.A	Line managers and supervisors are responsible for and held accountable for the quality of work performed within their area of responsibility. Quality programs reinforce and support the lien functions of managers and supervisors.	PM	X
OA.7.B	Personnel at all levels are committed to quality performance.	PM	X
OA.7.C	The scope of quality assurance and quality control activities is clearly defined for both normal operation and during outages. sufficient staffing and resources are provided for these activities.	PM	P
OA.7.D	Quality programs of vendors and contractors include adequate measures to achieve quality. The programs provide for utility checks on the quality of products and services delivered and on the processes used to prepare them for delivery.	PM	P
OA.7.H	Quality monitoring results are adequately documented and evaluated to allow early detection and correction of performance problems.	PM	P

#	ASSESSMENT PERFORMANCE CRITERIA	ASSESSOR	STATUS
OA.7.J	Summary results and trends are reported to station managers on aperiodic basis. Reports focus on performance effectiveness.	PM	P
OA.7.K	Appropriate follow-up quality monitoring is performed to check that corrective actions have been effective.	PM	P
OA.8.A	Configuration management responsibilities, authorities, and interfaces are clearly defined and understood.	PM	P
OA.8.B	The scope and application of configuration management controls are clearly defined and communicated. Station procedures, drawings, structures, systems, components, and software are included.	PM	P
OA.8.F	Documentation is maintained to reflect actual plant configuration and current design requirements.	PM	P