

December 8, 1994

Carolina Power and Light Company
ATTN: Mr. C. S. Hinnant
Vice President
H. B. Robinson Steam Electric Plant
Unit 2
P. O. Box 790
Hartsville, SC 29550-0790

SUBJECT: MEETING SUMMARY MOTOR-OPERATED VALVE ISSUES WITH SPECIAL EMPHASIS
ON THE PROCESS FOR CLOSING OUT GENERIC LETTER 89-10

Gentlemen:

On November 8, 1994, Region II and the Office of Nuclear Reactor Regulation (NRR) held a meeting with all Region II licensees/applicants on the closeout process for Generic Letter 89-10 (GL 89-10), Motor-Operated Valves. During this meeting Region II and NRR representatives provided the staff position on GL 89-10 closeout and answered questions on the inspection process. Handouts presented during this meeting are enclosed.

Periodic verification of motor-operated valve performance, after completion of GL 89-10 closeout, was an area of concern voiced by the audience. Many licensee representatives expressed their concern about continued dynamic testing of motor-operated valves after completion of the closeout process with little to no benefit. In response, the NRC staff agreed to revisit this issue and provide further information during future industry meetings.

This meeting was a valuable contribution to improving communications between the NRC and licensees/applicants. I want to express my gratitude for all those who attended. Thank you for your cooperation.

Sincerely,

Original signed by
Bruce S. Mallett for:

Albert F. Gibson, Director
Division of Reactor Safety

9412280147 941208
PDR ADOCK 05000261
P PDR

Docket No. 50-261
Licensee No. DPR-23

Enclosure: Handouts

Distribution w/encls:
W. Orders, SRI
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MAY

SEND	OFC	RII:DRS	RII:DRS	RII:DRP	NRR:EMEB	
TO	NAME	CCastepd	RCrlenjak <i>br</i>	BBoger <i>[Signature]</i>	RWessman <i>[Signature]</i>	
PDR?	DATE	11/30/94	12/12/94	12/14/94	12/28/94	1/1/94
Yes	No	COPY?	Yes	No	Yes	No

OFFICIAL RECORD COPY DOCUMENT NAME: A:\MOVGL.LTR

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**PROCESS FOR CLOSURE OF STAFF REVIEW
OF GENERIC LETTER 89-10 PROGRAMS
AND
PERIODIC VERIFICATION OF MOV DESIGN-BASIS CAPABILITY**

**TERENCE L. CHAN
CHIEF, COMPONENTS AND TESTING SECTION
MECHANICAL ENGINEERING BRANCH
OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION**

**PROCESS FOR CLOSURE OF STAFF REVIEW
OF GENERIC LETTER 89-10 PROGRAMS**

PURSUANT TO 10 CFR 50.54(F), GL 89-10 STATES THAT LICENSEES SHALL NOTIFY NRC IN WRITING WITHIN 30 DAYS AFTER COMPLETION OF GL 89-10 DESIGN-BASIS VERIFICATION.

NRC STAFF MEMORANDUM DATED JULY 12, 1994, DESCRIBES THE PROCESS FOR CLOSURE OF THE STAFF'S REVIEW OF THE DESIGN-BASIS VERIFICATION PORTION OF LICENSEES' GL 89-10 PROGRAMS.

WHEN A LICENSEE NOTIFIES NRC OF COMPLETION OF ITS GL 89-10 PROGRAM, NRR PROJECT MANAGER WILL SET UP DISCUSSION BETWEEN NRR TECHNICAL STAFF AND REGION STAFF TO DISCUSS CLOSURE OF NRC STAFF REVIEW OF GL 89-10 PROGRAM.

FOLLOWING THOSE DISCUSSIONS, NRR PROJECT MANAGER WILL NOTIFY LICENSEE OF ANY NECESSARY INFORMATION TO CLOSE GL 89-10 OR SET UP TELEPHONE CONFERENCE TO DISCUSS CLOSURE OF STAFF REVIEW BY INSPECTION OR LICENSEE SUBMITTAL.

UPON SATISFACTORY COMPLETION OF NRC STAFF REVIEW, STAFF WILL CLOSE GL 89-10 REVIEW THROUGH LETTER FROM NRR PROJECT MANAGER OR COVER LETTER OF INSPECTION REPORT.

**SUPPLEMENTAL INSPECTION GUIDANCE FOR CLOSURE
OF STAFF REVIEW OF GL 89-10 PROGRAMS**

- 04.04 SELECT SAMPLE OF MOVs FOR DETAILED REVIEW FROM THE POPULATION OF MOVs IN THE GL 89-10 PROGRAM.**

LICENSEE IS EXPECTED TO HAVE VERIFIED DESIGN-BASIS CAPABILITY OF EACH MOV IN ITS GL 89-10 PROGRAM. LICENSEE SHOULD HAVE AVAILABLE SPECIFIC STATUS FOR EACH GL 89-10 MOV.

PWR LICENSEE MAY DEFER CONSIDERATION OF VALVE MISPOSITIONING. STAFF REVIEW MAY BE CLOSED IF LICENSEE COMMITS TO CONSIDER MISPOSITIONING IN THE EVENT THAT STAFF DETERMINES THIS RECOMMENDATION REMAINS APPROPRIATE.

- 04.05 VERIFY THAT LICENSEE HAS PERFORMED DESIGN-BASIS REVIEWS OF SAMPLED MOVs.**

INSPECTORS WILL ASSESS THE PROGRESS BEING MADE BY LICENSEES IN ADDRESSING PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES.

SUPPLEMENT 6 TO GL 89-10 PROVIDES INFORMATION ON PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES.

**SUPPLEMENTAL INSPECTION GUIDANCE
(CONTINUED)**

- 04.06 VERIFY THAT LICENSEE HAS ADEQUATELY SIZED SAMPLED MOVs.**

INFORMATION ON SIZING AND SETTING PROVIDED IN APRIL 30, 1993, MEMORANDUM FROM NRR TO REGIONS AND IN SUPPLEMENT 6 TO GL 89-10.

- 04.07 VERIFY THAT LICENSEE HAS DEMONSTRATED DESIGN-BASIS CAPABILITY OF SAMPLED MOVs.**

INSPECTORS WILL VERIFY IMPLEMENTATION OF LICENSEE ACTIONS IN RESPONSE TO SUPPLEMENT 5 TO GL 89-10 ON MOV DIAGNOSTIC EQUIPMENT ACCURACY. INSPECTORS WILL ASSESS ADEQUACY OF LICENSEE'S TREATMENT OF MEASUREMENT ERROR IN THE ANALYSIS OF TEST DATA AND TORQUE SWITCH SETPOINT ANALYSIS.

SUPPLEMENT 6 TO GL 89-10 PROVIDES INFORMATION ON DEMONSTRATION OF MOV DESIGN-BASIS CAPABILITY, INCLUDING GROUPING.

- 04.08 VERIFY THAT THE LICENSEE HAS ESTABLISHED A METHOD FOR PERIODIC VERIFICATION.**

[DETAILS ON A FOLLOWING SLIDE]

**SUPPLEMENTAL INSPECTION GUIDANCE
(CONTINUED)**

- 04.09 VERIFY THAT LICENSEE HAS ANALYZED MOV FAILURES AND HAS EFFECTIVE CORRECTIVE ACTION PLAN, AND THAT LICENSEE TRENDS MOV FAILURES.**

INSPECTORS WILL CONSIDER LICENSEE RESPONSE TO NRC INFORMATION NOTICES, INDUSTRY TECHNICAL AND MAINTENANCE UPDATES, AND 10 CFR PART 21 NOTICES.

- 04.10 VERIFY THAT THE LICENSEE IS MEETING PROGRAM SCHEDULE.**

SUPPLEMENT 6 TO GL 89-10 PROVIDES GUIDANCE FOR LICENSEES THAT CANNOT MEET GL 89-10 SCHEDULE COMMITMENTS.

- 04.11 VERIFY QUALITY ASSURANCE PROGRAM IMPLEMENTATION IN DESIGN CONTROL AND TESTING.**

PREVIOUS INSPECTION ISSUES

INSPECTORS WILL REVIEW RESOLUTION OF PREVIOUS INSPECTION ISSUES, SUCH AS JUSTIFICATION FOR THE GL 89-10 PROGRAM ASSUMPTIONS (VALVE FACTOR, STEM FRICTION COEFFICIENT, LOAD SENSITIVE BEHAVIOR, AND OTHERS)

POST CLOSEOUT INSPECTIONS

1. REACTIVE

LIMITED - WILL TYPICALLY ADDRESS
ADEQUACY OF FAILURE EVALUATIONS AND
CORRECTIVE ACTIONS

2. MAINTENANCE RULE

BROAD - PERIODIC VERIFICATION, TRENDING,
LUBRICATION, POST
MAINTENANCE/MODIFICATION TESTING, ETC.

3. POSSIBLE FOLLOWUP MODULE

**CLOSURE OF NRC STAFF REVIEW
OF GENERIC LETTER 89-10 PROGRAMS**

**THOMAS G. SCARBROUGH
MECHANICAL ENGINEERING BRANCH
OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION**

STATUS OF GENERIC LETTER 89-10 CLOSURE

STAFF COMPLETED OUR REVIEW OF THE GL 89-10 PROGRAM AT THE CALLAWAY NUCLEAR POWER PLANT.

OTHER NUCLEAR PLANTS THAT HAVE NOTIFIED THE STAFF OF THE COMPLETION OF THE DESIGN-BASIS CAPABILITY VERIFICATION PORTION OF THEIR GL 89-10 PROGRAMS INCLUDE:

COMANCHE PEAK 1 AND 2
FARLEY 1 AND 2
HARRIS
HOPE CREEK
PALO VERDE 3
PRAIRIE ISLAND 1 AND 2
SOUTH TEXAS 1 AND 2
WATERFORD

CRYSTAL RIVER
FORT CALHOUN
HATCH 1 AND 2
LIMERICK 1
POINT BEACH 1 AND 2
ROBINSON
TURKEY POINT 3

BASED ON AGREEMENT BETWEEN THE LICENSEE AND NRC STAFF, FORT CALHOUN IS SUBMITTING INFORMATION TO JUSTIFY CLOSURE OF THE STAFF REVIEW OF ITS GL 89-10 PROGRAM.

SOUTH TEXAS AND WATERFORD HAVE UNDERGONE GL 89-10 CLOSE-OUT INSPECTIONS AND THE STAFF IS NEARING CLOSURE OF OUR GL 89-10 REVIEW.

TMI AND MAINE YANKEE INITIALLY NOTIFIED THE STAFF THAT THEY BELIEVED THAT THEIR GL 89-10 PROGRAMS WERE COMPLETE, BUT SUBSEQUENT INSPECTIONS REVEALED THAT ADDITIONAL WORK WAS NECESSARY. THESE LICENSEES ARE SUBMITTING SCHEDULE EXTENSION JUSTIFICATIONS.

**PRINCIPAL LICENSEE ACTIONS FOR
CLOSURE OF STAFF REVIEW OF GL 89-10 PROGRAMS**

MOV DESIGN-BASIS CAPABILITY

LICENSEE JUSTIFIES DESIGN-BASIS CAPABILITY FOR EACH MOV IN GL 89-10 PROGRAM AND HAS ESTABLISHED A PROCESS FOR OBTAINING FURTHER INFORMATION WHERE NOT SATISFIED WITH JUSTIFICATION FOR CERTAIN MOVs.

PRESSURE LOCKING AND THERMAL BINDING

LICENSEE DEMONSTRATES PROGRESS BEING MADE TO RESOLVE CONCERN ABOUT POTENTIAL PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES.

PWR VALVE MISPOSITIONING

PWR LICENSEE CONSIDERS VALVE MISPOSITIONING, OR COMMITS TO CONSIDER VALVE MISPOSITIONING IF STAFF DETERMINES THAT THIS RECOMMENDATION REMAINS APPROPRIATE.

PERIODIC VERIFICATION OF MOV DESIGN-BASIS CAPABILITY

LICENSEE ESTABLISHES LONG-TERM PLAN FOR PERIODIC VERIFICATION THAT DEMONSTRATES THAT DEGRADATION OF DESIGN-BASIS CAPABILITY WILL BE IDENTIFIED.

EXAMPLES OF ACCEPTABLE PERIODIC VERIFICATION PLANS FOR GL 89-10 CLOSURE ARE (1) DYNAMIC DIAGNOSTIC TESTING, OR (2) STATIC DIAGNOSTIC TESTING WITH MARGIN BASED ON PLANT-SPECIFIC DYNAMIC TESTING.

**LICENSEE ACTIONS
(CONTINUED)**

JUSTIFICATION OF PROGRAM ASSUMPTIONS

LICENSEE JUSTIFIES ASSUMPTIONS USED IN THE GL 89-10 PROGRAM, SUCH AS

- A. VALVE FACTOR (INCLUDING AREA ASSUMPTION)**
- B. STEM FRICTION COEFFICIENT**
- C. LOAD SENSITIVE BEHAVIOR**
- D. MARGINS FOR STEM LUBRICATION DEGRADATION AND SPRINGPACK RELAXATION**
- E. MOTOR PERFORMANCE FACTORS**
 - (1) MOTOR RATING**
 - (2) EFFICIENCIES USED IN OPEN AND CLOSE DIRECTIONS**
 - (3) APPLICATION FACTOR**
 - (4) POWER FACTOR USED IN DEGRADED VOLTAGE CALCULATIONS**
- F. BASIS FOR EXTRAPOLATION METHOD OF PARTIAL D/P THRUST MEASUREMENTS**
- G. TORQUE SWITCH REPEATABILITY**
- H. USE OF LIMITORQUE, KALSI, OR OTHER SOURCES FOR INCREASING THRUST AND TORQUE ALLOWABLE LIMITS**
- I. EQUIPMENT ERROR**
- J. POST-MAINTENANCE TESTING, ESPECIALLY VALVE PACKING ADJUSTMENTS**
- K. GROUPING OF MOVs**
- L. TRENDING OF MOV PROBLEMS.**

**LICENSEE ACTIONS
(CONTINUED)**

RESOLVE GL 89-10 INSPECTION FINDINGS

LICENSEE RESOLVES FINDINGS FROM PREVIOUS GL 89-10 INSPECTIONS.

IN GENERAL, MOST SIGNIFICANT GL 89-10 INSPECTION CONCERNS HAVE BEEN:

- (1) STATUS OF DYNAMIC TESTING;**
- (2) TEST ACCEPTANCE CRITERIA;**
- (3) OPERABILITY/REPORTABILITY DETERMINATIONS;**
- (4) FEEDBACK OF TEST RESULTS; AND**
- (5) EVALUATION OF POTENTIAL FOR PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES.**

OTHER LICENSEE ACTIVITIES FOUND TO NEED IMPROVEMENT:

- (1) VALIDATION OF ASSUMPTIONS IN MOV SIZING AND SETTING CALCULATIONS;**
- (2) JUSTIFICATION OF MOV GROUPING FOR TESTING PURPOSES;**
- (3) VERIFICATION OF EXTRAPOLATION METHODS FOR TEST DATA;**
- (4) EVALUATION OF DIAGNOSTIC TRACE ANOMALIES;**
- (5) INVOLVEMENT OF QA IN VERIFYING TEST DATA AND ANALYSES ACCURACY;**
- (6) JUSTIFICATION FOR METHOD TO PERIODICALLY VERIFY DESIGN-BASIS CAPABILITY;**
- (7) CORRECTIVE ACTION IN RESPONSE TO MOV PROBLEMS; AND**
- (8) POST-MAINTENANCE TESTING FOLLOWING ACTIVITIES THAT MIGHT AFFECT MOV PERFORMANCE UNDER DYNAMIC CONDITIONS.**

**LICENSEE ACTIONS
(CONTINUED)**

ADDRESS CURRENT MOV ISSUES AND CONCERNS

LICENSEE RECOGNIZES AND HAS PLAN TO ADDRESS CURRENT MOV ISSUES AND CONCERNS, SUCH AS

- * ACTUAL TORQUE OUTPUT OF LIMITORQUE ACTUATORS LOWER THAN ANTICIPATED.**
- * REDUCTION IN DC AND AC MOTOR SPEED DURING OPERATION UNDER DEGRADED VOLTAGE, DIFFERENTIAL PRESSURE, AND HIGH AMBIENT TEMPERATURE CONDITIONS.**
- * ENSURING THE CAPABILITY OF MOV TO RETURN TO SAFETY POSITION FOLLOWING TESTING IF MOV IS ASSUMED TO BE OPERABLE DURING TESTING.**
- * EVALUATION OF POTENTIAL ADVERSE EFFECTS OF MOTOR STALL AND THERMAL OVERLOAD TRIP, INCLUDING STRUCTURAL AND MOTOR DAMAGE.**
- * CHAFING OF WIRES INSIDE LIMIT SWITCH COMPARTMENT CAN CAUSE LOSS OF FUNCTION.**
- * GLOBE VALVE THRUST REQUIREMENTS FOR PUMPED FLOW APPARENTLY CONTROLLED BY SEAT OR GUIDE AREAS.**
- * INDUSTRY GLOBE VALVE BLOWDOWN TESTING SHOWED SIGNIFICANTLY HIGHER THRUST REQUIREMENTS THAN PREDICTED.**
- * INDUSTRY AND NRC-SPONSORED GATE VALVE BLOWDOWN TESTING SHOWED SOME VALVES TO HAVE UNPREDICTABLE BEHAVIOR.**

CALLAWAY
GL 89-10 PROGRAM

GL 89-10 PROGRAM SCOPE: 150 MOVs

DYNAMICALLY TESTED: 103 MOVs

DESIGN-BASIS CAPABILITY OF MOVs NOT DYNAMICALLY TESTED BASED ON GROUPING WITH OTHER TESTED MOVs AT CALLAWAY AND OTHER SOURCES.

PERIODIC VERIFICATION:

MOVs STATIC TESTED USING DIAGNOSTICS EVERY 5 YEARS.

STATIC MARGIN FOR VALVE FACTOR DEGRADATION (SEPARATE AND DISTINCT FROM OTHER UNCERTAINTIES) FOR RISING-STEM MOVs INITIALLY SET AT 25% WITH SAMPLE DYNAMIC TESTING TO JUSTIFY AT NEXT REFUELING OUTAGE.

STATIC MARGIN FOR AGE-RELATED DEGRADATION FOR QUARTER-TURN MOVs TO BE DETERMINED BASED ON SAMPLE DYNAMIC TESTING AT NEXT REFUELING OUTAGE.

DYNAMIC TESTING PERFORMED IF STATIC MARGIN FALLS BELOW ESTABLISHED CRITERIA.

PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES:

LICENSEE PERFORMED INITIAL EVALUATION OF ALL SAFETY-RELATED MOTOR-OPERATED GATE VALVES. ADDITIONAL EVALUATION WILL BE NECESSARY.

**CALLAWAY GL 89-10 PROGRAM
(CONTINUED)**

**NRC LETTER NOTIFYING LICENSEE OF CLOSURE OF STAFF
REVIEW OF CALLAWAY GL 89-10 PROGRAM FORWARDED ON
JUNE 8, 1994.**

**LETTER INDICATES LICENSEE'S PLANS TO CONDUCT THE
FOLLOWING ACTIVITIES TO ENSURE THAT ASSUMPTIONS USED
IN VERIFYING GL 89-10 MOV DESIGN-BASIS CAPABILITIES
REMAIN VALID:**

- 1. EVALUATE JUSTIFICATION FOR DESIGN-BASIS
CAPABILITY OF 18 MOVs AS ADDITIONAL INDUSTRY
INFORMATION BECOMES AVAILABLE.**
- 2. CONTINUE TO ASSESS USE OF LINEAR EXTRAPOLATION
OF MOV PERFORMANCE DATA.**
- 3. CONTINUE TO EVALUATE PRESSURE LOCKING AND
THERMAL BINDING OF GATE VALVES.**
- 4. PERFORM PERIODIC MOV PERFORMANCE VERIFICATION BY
DYNAMIC TESTING GATE AND GLOBE MOVs WHEN MARGIN
IS LESS THAN 25 PERCENT AFTER REQUIRED THRUST
ADJUSTED FOR UNCERTAINTIES. FOLLOWING NEXT
REFUELING OUTAGE, PROVIDE STAFF WITH DYNAMIC
TEST-BASED INFORMATION CONFIRMING 25% STATIC
MARGIN FOR GATE AND GLOBE VALVES AND
ESTABLISHING MARGIN FOR AGE-RELATED DEGRADATION
FOR BUTTERFLY VALVES.**

**FORT CALHOUN
GENERIC LETTER 89-10 PROGRAM**

GL 89-10 PROGRAM SCOPE: 29 MOVs

DYNAMICALLY TESTED: 20 MOVs

DESIGN-BASIS CAPABILITY OF MOVs NOT DYNAMICALLY TESTED BASED ON GROUPING WITH OTHER TESTED MOVs AT FORT CALHOUN AND OTHER SOURCES.

PERIODIC VERIFICATION:

INSPECTION REPORT 94-05 STATES THAT LICENSEE'S PLAN FOR PERIODIC VERIFICATION INCLUDES DYNAMIC TESTING.

PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES:

LICENSEE EVALUATED GL 89-10 MOVs AND FOUND NONE SUSCEPTIBLE TO PRESSURE LOCKING. ADDITIONAL EVALUATION WILL BE NECESSARY.

LICENSEE PREPARING SUBMITTAL TO SUPPORT CLOSURE OF STAFF REVIEW OF FORT CALHOUN GL 89-10 PROGRAM

**WATERFORD
GENERIC LETTER 89-10 PROGRAM**

GL 89-10 PROGRAM SCOPE: 56 MOVs

DYNAMICALLY TESTED: 44 MOVs

DESIGN-BASIS CAPABILITY OF MOVs NOT DYNAMICALLY TESTED BASED ON GROUPING WITH OTHER TESTED MOVs AT WATERFORD AND OTHER SOURCES.

PERIODIC VERIFICATION:

MOVs STATIC TESTED USING DIAGNOSTICS EVERY 5 YEARS.

STATIC MARGIN FOR VALVE FACTOR DEGRADATION (SEPARATE AND DISTINCT FROM OTHER UNCERTAINTIES) FOR GATE MOVs INITIALLY SET AT 25% WITH SAMPLE DYNAMIC TESTING TO JUSTIFY AT NEXT REFUELING OUTAGE.

DYNAMIC TESTING PERFORMED IF STATIC MARGIN FALLS BELOW ESTABLISHED CRITERIA.

LICENSEE PREPARING RESPONSE TO CLOSE-OUT INSPECTION REPORT ON PERIODIC VERIFICATION (INCLUDING GLOBE AND BUTTERFLY VALVES) AND POST-MAINTENANCE TESTING.

PRESSURE LOCKING AND THERMAL BINDING OF GATE VALVES:

LICENSEE DETERMINED THAT 8 GATE VALVES WERE POTENTIAL SUSCEPTIBLE TO PRESSURE LOCKING AND EVALUATED THEIR CAPABILITY TO OVERCOME THIS CONDITION. STAFF DID NOT REVIEW CALCULATIONS FOR TECHNICAL MERIT. LICENSEE PERFORMED PRELIMINARY EVALUATION OF THERMAL BINDING. ADDITIONAL EVALUATION WILL BE NECESSARY.

**PERIODIC VERIFICATION
OF MOV DESIGN-BASIS CAPABILITY**

FOR GL 89-10 CLOSURE, LICENSEES ARE EXPECTED TO HAVE A LONG-TERM PLAN FOR PERIODIC VERIFICATION THAT DEMONSTRATES THAT DEGRADATION OF MOV DESIGN-BASIS CAPABILITY WILL BE IDENTIFIED.

LICENSEES MAY USE PRA CONSIDERATIONS TO PRIORITIZE MOVs IN ESTABLISHING PERIODIC VERIFICATION FREQUENCY.

LICENSEES MUST HAVE CONFIDENCE THAT SAFETY-RELATED MOVs WILL REMAIN OPERABLE UNTIL NEXT SCHEDULED DESIGN-BASIS VERIFICATION TEST.

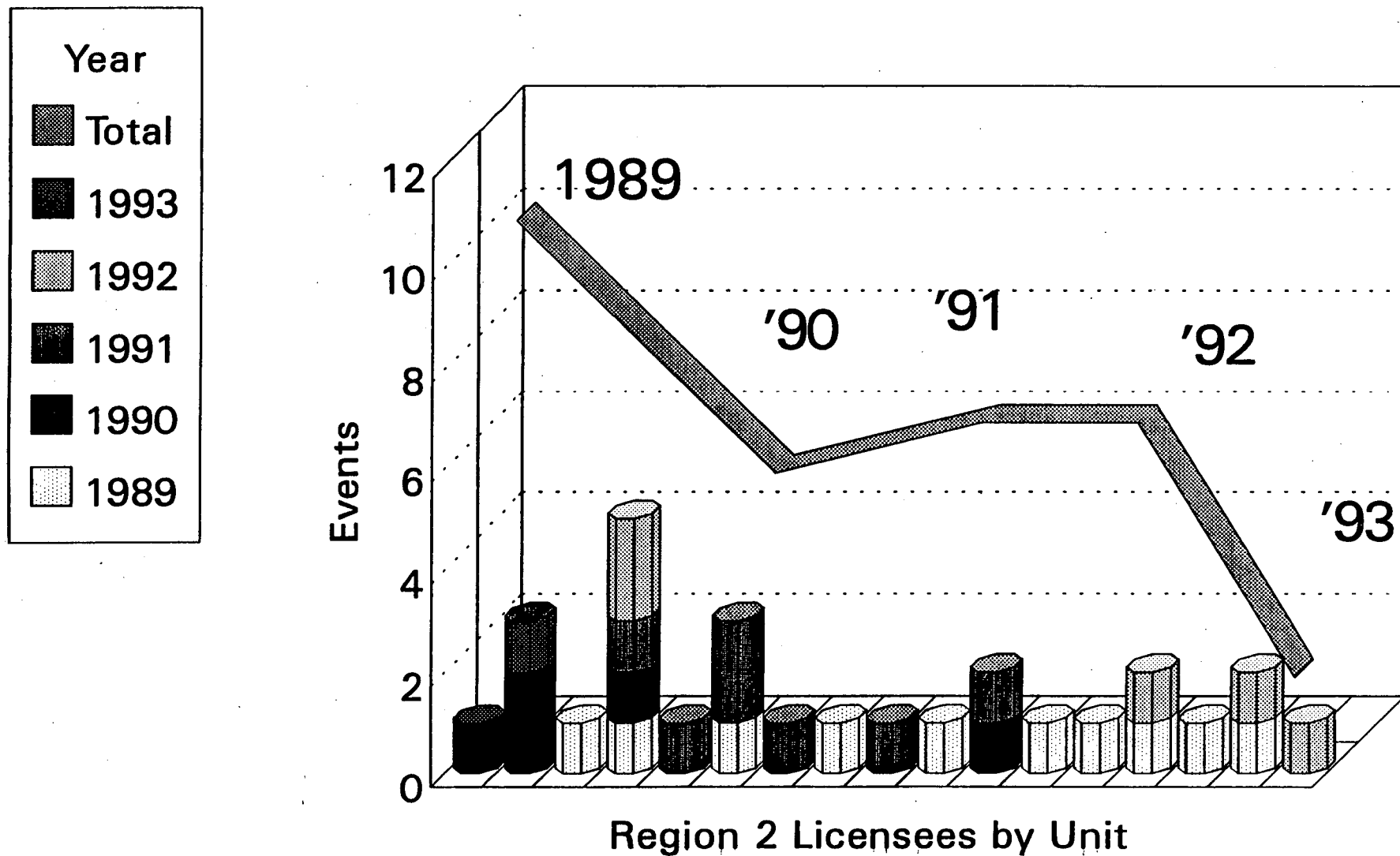
NRC STAFF IS WORKING WITH THE OPERATIONS AND MAINTENANCE COMMITTEE OF THE ASME BOILER AND PRESSURE VESSEL CODE TO DEVELOP ACCEPTABLE METHODS TO VERIFY MOV DESIGN-BASIS CAPABILITY THROUGH PERIODIC TESTING.

EXAMPLES OF ACCEPTED PERIODIC VERIFICATION PLANS FOR GL 89-10 CLOSURE ARE (1) DYNAMIC DIAGNOSTIC TESTING, OR (2) STATIC DIAGNOSTIC TESTING WITH MARGIN BASED ON PLANT-SPECIFIC DYNAMIC TESTING.

AFTER CLOSURE OF THE STAFF'S REVIEW OF GL 89-10 PROGRAMS, LICENSEES MAY ADJUST THEIR COMMITMENTS TO PERIODIC VERIFICATION OF MOV DESIGN-BASIS CAPABILITY WITH ADEQUATE JUSTIFICATION.

1989-93 Region 2 MOV Reportable Events

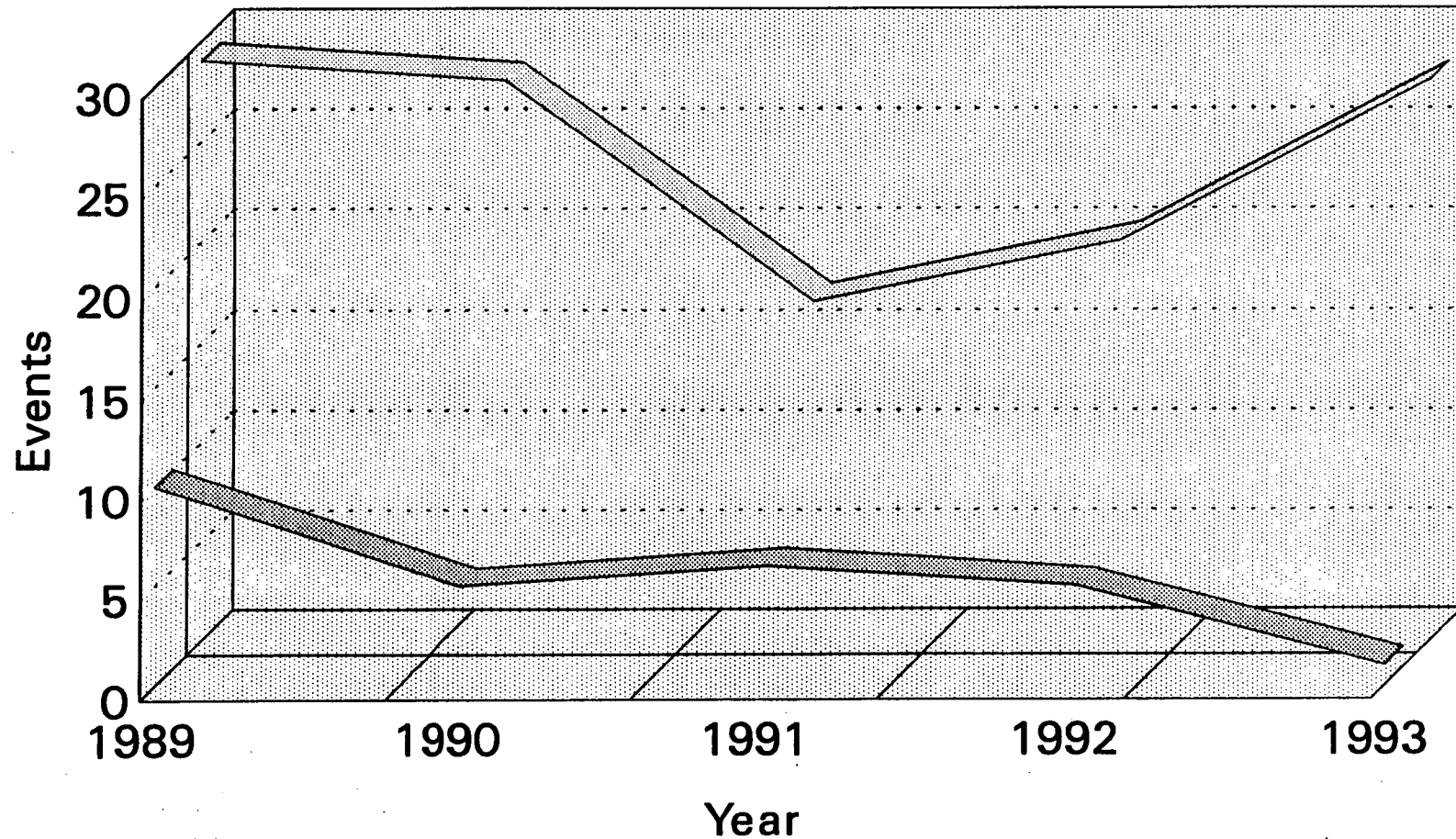
Motor Operator Failures



17 Units had no reportable failures during this period

1989-93 National MOV Reportable Events

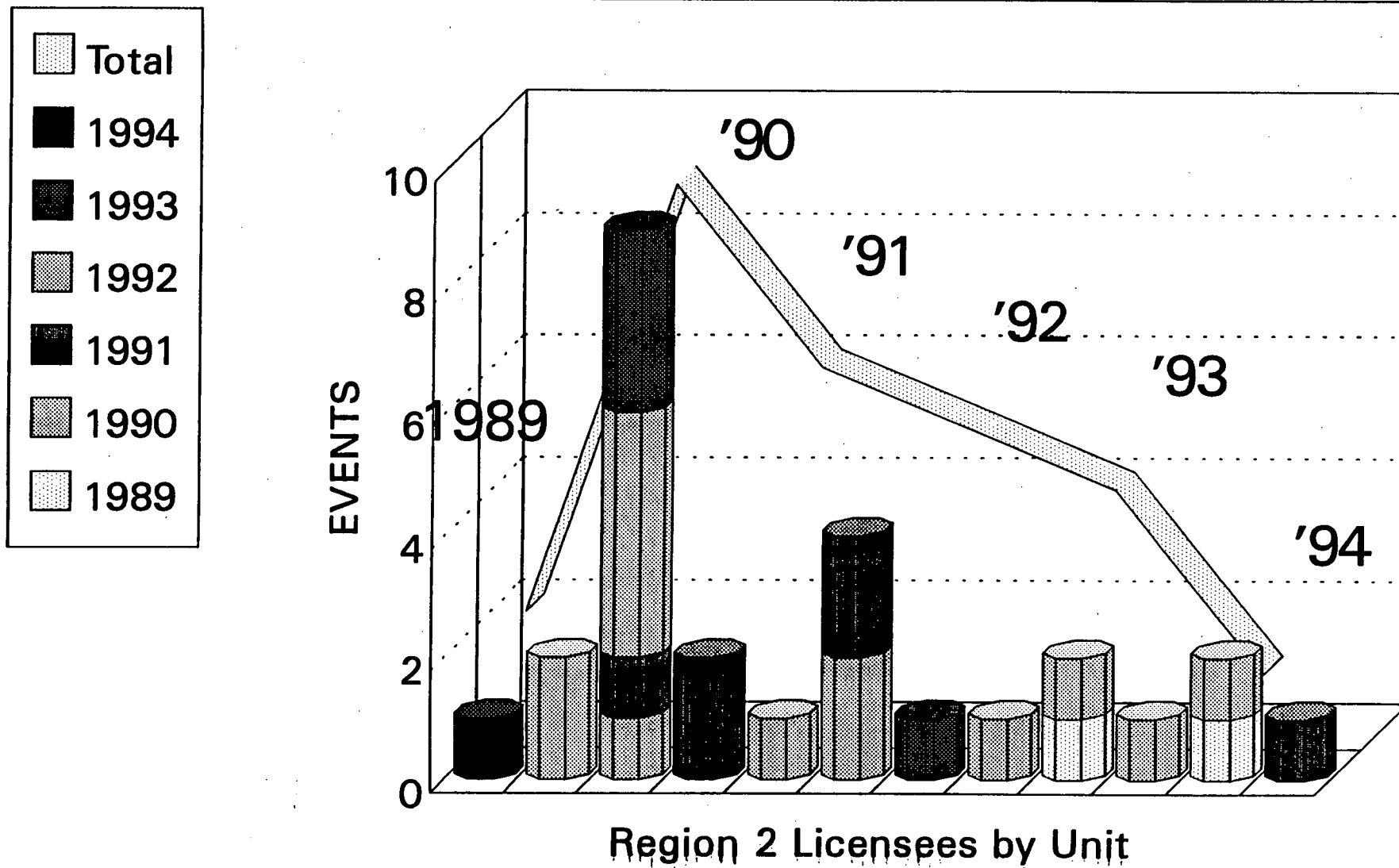
Motor Operator Failures



Region 2 Regions 1,3,4,5

1989-94 Region 2 MOV Reportable Events

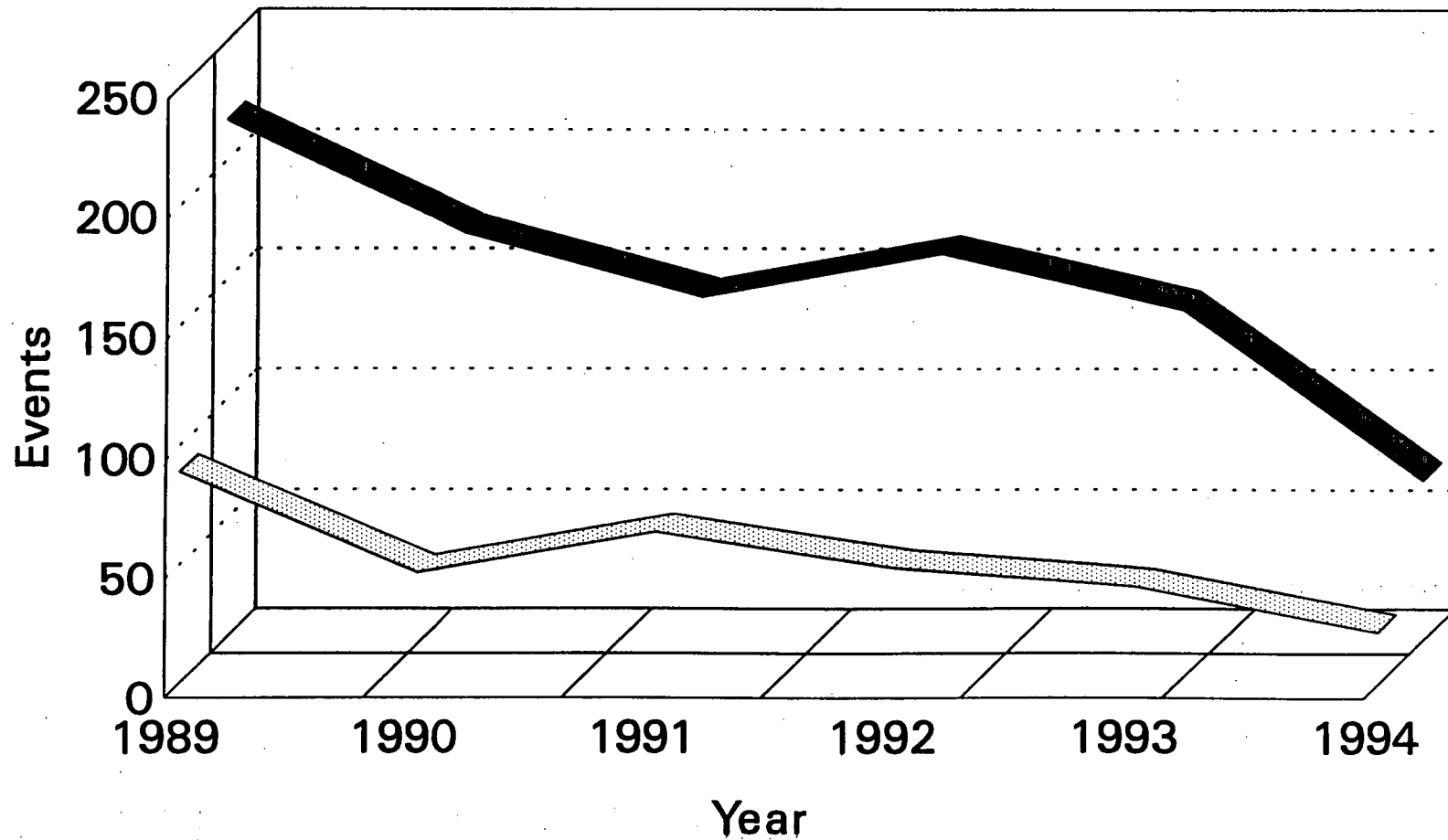
Motor Design, Const, Fab, or Installation Errors



22 Units had no reportable events over this period

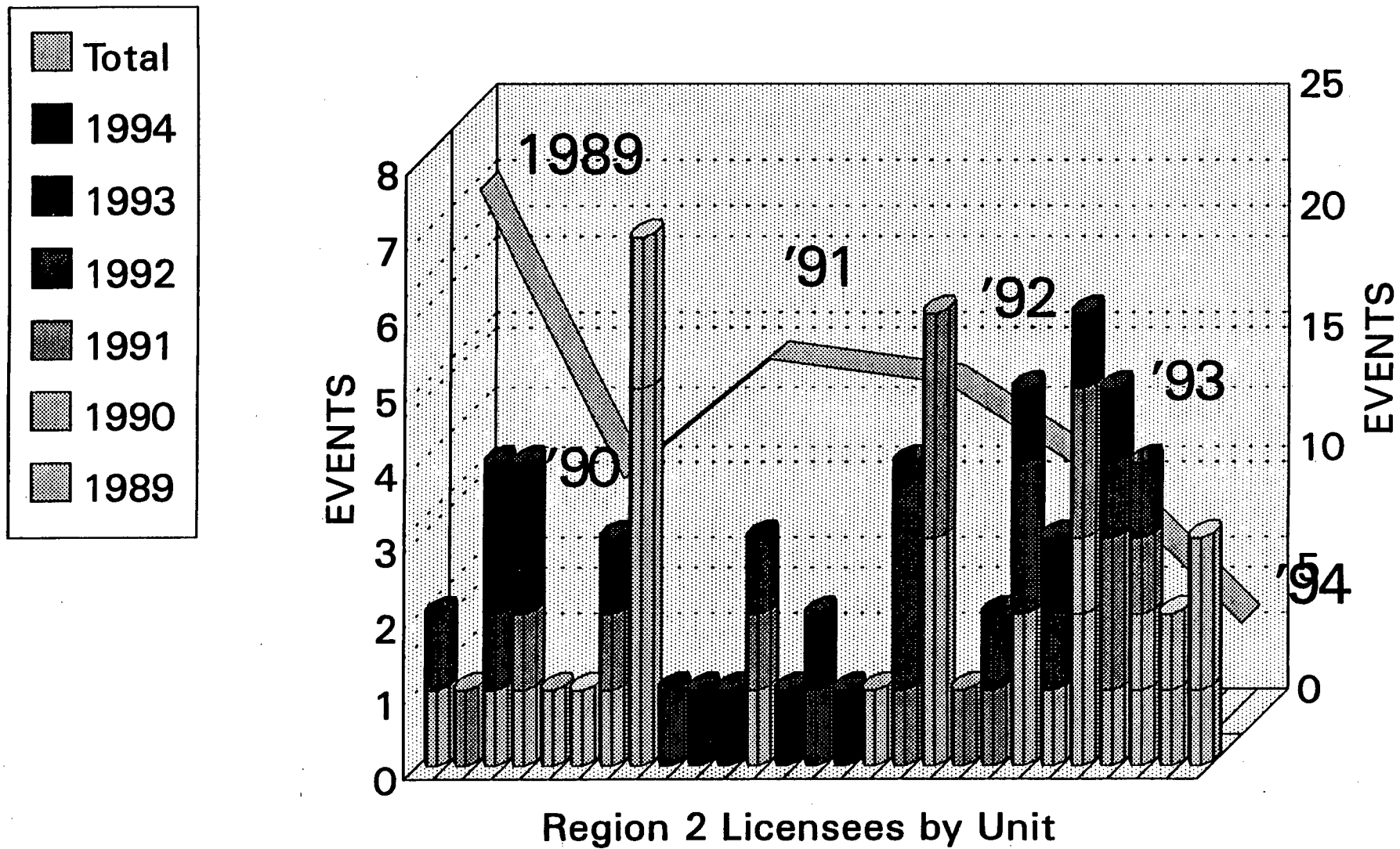
1989-94 National MOV Reportable Events

Valve Failures Requiring Repair



1989-94 Region 2 MOV Reportable Events

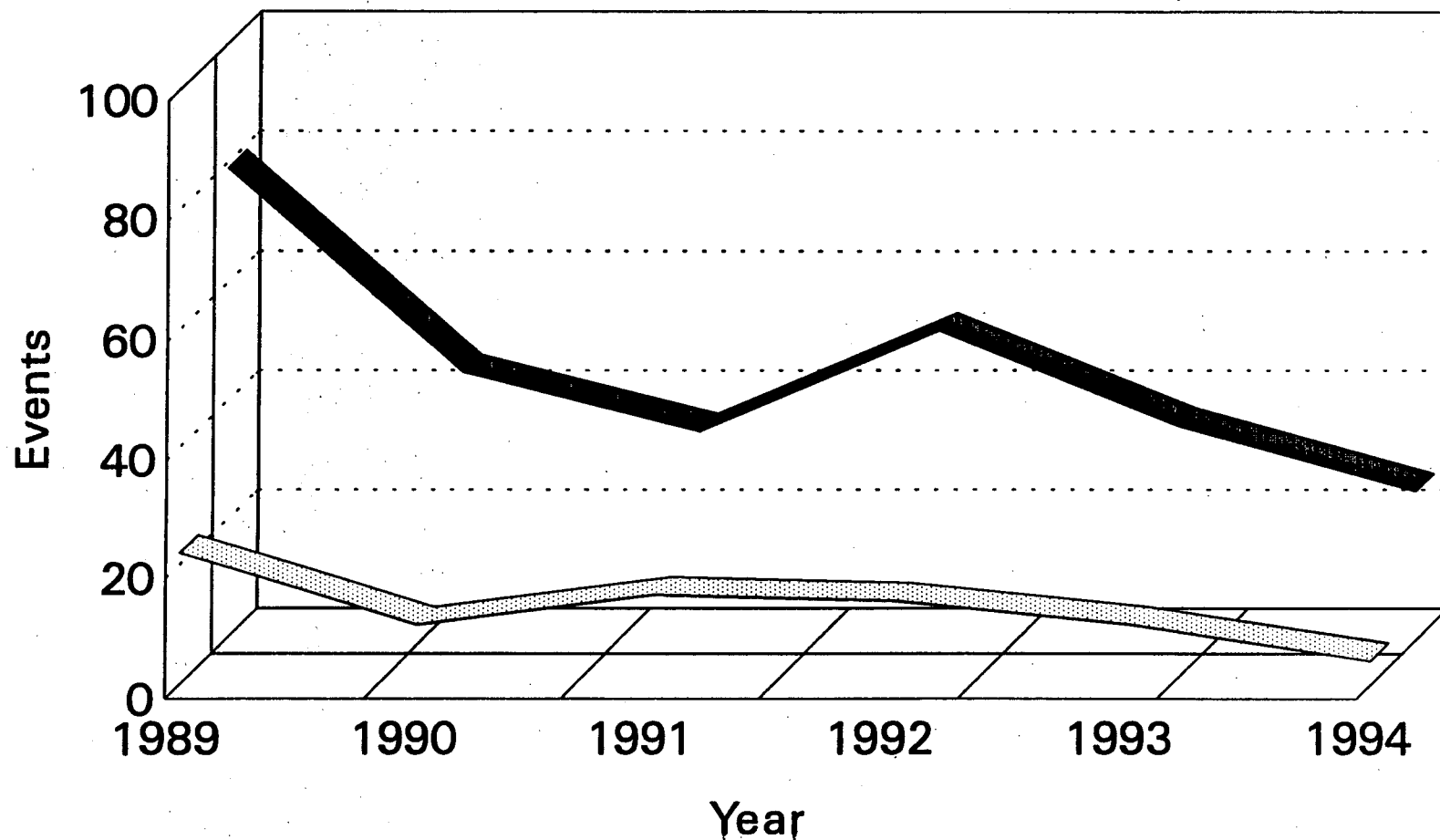
Valve Failures Due to Design, Fab, or Installation errors



7 Units had no reported valve failures during this period

1989-94 National MOV Reportable Events

Valve Failures due to Design, Const, Fab or Installation Errors



Region 2 ■ Regions 1,3,4,5

1989-94 National MOV Reportable Events

Motor Design, Const, Fab or Installation Failures

