Northeast Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

October 20, 1995

Docket No. 50-423
B15396

Re: 10CFR50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specification
24-Month Fuel Cycle — Containment Type B and
Type C Testing — Additional Information

The purpose of this submittal is to provide additional information to support the request made by Northeast Nuclear Energy Company (NNECO) on May 1, 1995,[1] to amend its Operating License NPF-49, by modifying the surveillance requirements concerning Type B and Type C tests and bypass leakage tests. Specifically, the proposed changes to the Millstone Unit No. 3 Technical Specifications would increase the maximum allowable surveillance interval from 24 months to 30 months.

While in Mode 6 (i.e., in the fifth refueling outage) during the performance of local leak rate testing (LLRT), the "as-found" leak rate for certain containment isolation valves exceeded the technical specification Type C limit of 0.6 L_a and bypass leakage limit of 0.042 L_a. This condition was reported in Licensee Event Report 95-009-02. The evaluation provided below supports the justification included in our letter dated May 1, 1995, to extend Technical Specification Surveillance Requirements 4.6.1.2.d and e.

During the Millstone Unit No. 3 Refueling Outage (RFO) 5 , several containment isolation valves exhibited leakage which exceeded technical specification leakage limits. The valves include bypass valves 3CVS*V20 (Penetration 37), 3CDS*CTV91A and 3CDS*CTV38A (Penetration 38), 3HVU*CTV33B (Penetration 85), and 3HVU*CTV33A (Penetration 86), and non-bypass valve 3SIL*V6 (Penetration 93).

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(1) J. F. Opeka letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, 24-Month Fuel Cycle — Containment Type B and Type C Testing and Steam Generator Tube Inspection and Request for Exemption from 10CFR50, Appendix J," dated May 1, 1995.

Table 1 provides a summary of component leakage results from each refueling outage to the present.

On April 26, 1995, the total bypass leakage when totaled with the "as-found" results for the containment isolation valves on the containment vacuum (Penetration 37), purge exhaust (Penetration 85), and purge supply (Penetration 86) exceeded the technical specification limit for bypass leakage. The "as-found" leakage on inboard isolation valve 3CVS*V20 was 11,970 standard cubic centimeters per minute (SCCM). Previous LLRT data on valve 3CVS*V20 indicates a history of high leakage (see Figure 1 which provides a graphical representation of the leakage on 3CVS*V20). Consequently, during the last operating cycle, plant design change record (PDCR)# 3-94-102 was developed to replace the hard-seated gate valve with a soft-seated butterfly valve which was better suited for the application. This PDCR was implemented during RFO5. The leakage configuration of Penetration 37 indicates that containment integrity was maintained by outboard isolation valve 3CVS*AOV23 which had an "as-found" leakage of 46.5 SCCM. NNECO believes that the valve replacement has provided the necessary corrective action to address past performance deficiencies associated with 3CVS*V20. Based on the above evaluation, NNECO believes that a component failure cannot be predicted over a certain time period. Therefore, NNECO considers the previous justification regarding the 24-month fuel cycle extension to be acceptable.

The "as-found" LLRT result for Penetration 85 (Purge Exhaust), which tests valve 3HVU*CTV33B and 3HVU*CTV32B, simultaneously, was 7,820 SCCM. The cause of this high leakage was attributed to deterioration or damage of the resilient valve seats. These resilient seats are replaced every other refueling outage. Considering the design of Penetration 85, the actual leakage would be one-half the total "as-found" leakage or 3,910 SCCM if an accident occurred. Previous LLRT data on Penetration 85 indicates a relatively good historical performance from a leakage perspective, with no similar cases of valve seat deterioration (see Table 1 and Figure 6). Based on the above evaluation, NNECO believes that a component failure cannot be predicted over a certain time period. Therefore, NNECO considers the previous justification regarding the 24-month fuel cycle extension to be acceptable.

On May 2, 1995, the "as-found" leakage through bypass isolation valves on Penetration 38 (Chilled Water), 3CDS*CTV91A and 3CDS*CTV38A exceeded the Technical Specification limit. The "as-found" leakage on these valves was 52,900 SCCM and 52,800 SCCM, respectively. While valves 3CDS*CTV91A and 3CDS*CTV38A exhibited excessive leakage during RFO5, historical LLRT data indicates relatively low "as-found" leakage rates and no previous history of a failure (see Table 1 and Figure 3). The cause of the excessive leakage was identified as an inadequate setting of the valve actuators' stop-travel limiters that resulted in improper valve seating. Corrective actions were implemented to improve the maintenance procedures for properly setting valve actuator travel limiters. Therefore, NNECO believes that this corrective action will reduce the leakage through Penetration 38 and, consequently, maintain containment integrity. Based on the above evaluation, NNECO believes that a component failure cannot be predicted over a certain time period. Therefore, NNECO considers the previous justification regarding the 24-month fuel cycle extension to be acceptable.

On May 10, 1995, inboard containment isolation valve 3SIL*V6 had an "as-found" leakage that was undetermined and, therefore, exceeded the Technical Specification limit of 0.6 L_a. Valve 3SIL*V6 is a check valve located in the residual heat removal discharge piping in Penetration 93. The root cause of the failure of 3SIL*V6 was the result of a valve body-to-bonnet leak. Containment integrity was maintained by outboard containment isolation valve 3SIL*MV8809A which exhibited a successful "as-found" LLRT leakage of 2,060 SCCM. This relatively low leakage from outboard valve 3SIL*MV8809A represents the "minimum pathway leakage" associated with Penetration 93 which would result during an accident. Valve 3SIL*V6 was disassembled, inspected, and the body-to-bonnet gasket replaced. The "as-left" LLRT on 3SIL*V6 successfully passed the technical specification criteria. Previously, valve 3SIL*V6 had one other failure. During RFO2 on June 6, 1989, valve 3SIL*V6 was found not fully seated prior to performing its LLRT. The cause was attributed to possible debris under the valve seat. NNECO considers the failures during RFO2 and RFO5 unrelated cases. Based on the above evaluation, NNECO believes that a component failure cannot be predicted over a certain time period. Therefore, NNECO considers the previous submittal regarding the 24-Month Fuel Cycle extension to be justified.

It should be noted that the safety assessment, significant hazards consideration, and environmental impact discussion previously included in the May 1, 1995, amendment request remains valid.

Should the NRC Staff require any additional information, please contact Mr. R. G. Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: J. F. Opeka
Executive Vice President

BY: [signature]
E. A. DeBarba
Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

Mr. Kevin T.A. McCarthy, Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Subscribed and sworn to before me

this 20TH day of October, 1995

[signature]

Date Commission Expires: 8/31/95

Attachment 1

Millstone Nuclear Power Station, Unit No. 3

October 1995

TABLE 1

LLRT Leakage Summary

Penetration No. / Description	Valve ID	RFO 5		RFO 4		RFO 3		RFO 2		RFO 1	
		As-found	As-left	As-found	As-left	As-found	As-left	As-found	As-left	As-found	As-left
37 / Containment Vacuum	3CVS*V20	11,970.0	82.7	9,000.0	9,000.0	12,830.0	25.0	12,040.0	633.0	4,159.0	1,705.0
	3CVS*AOV23	46.5	49.4	27.0	27.0	25.0	25.0	54.6	54.6	67.0	67.0
38 / Chilled Water	3CDS*CTV91A	52,900.0	1,634.0	20.0	512.0	20.0	20.0	56.0	56.0	29.0	29.0
	3CDS*CTV38A	52,800.0	1,588.0	317.0	20.0	709.0	709.0	85.0	85.0	1,549.0	58.0
	3CDS*RV105A										
85 / Purge Exhaust	3HVU*CTV33B	7,820.0	138.1	58.0	1,900.0	127.0	127.0	79.0	49.9	720.0	2,894.0
	3HVU*CTV32B										
86 / Purge Supply	3HVU*CTV33A	7,300.0	664.0	20.0	20.0	615.0	615.0	50.3	22.0	915.0	3,762.0
	3HVU*CTV32A										
	3HVU*V5										
93 (inboard) / Safety Injection	3SIL*V6	UD	544.0	61.8	61.8	12,000.0	12,000.0	UD	1,400.0	145.0	145.0
	3SIL*CV8890A	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	3SIL*V7	134.2	134.2	20.0	20.0	42,400.0	42,400.0	159.0	159.0	20.0	20.0
93 (outboard)	3SIL*MV8809A	2,060.0	268.0	48.3	110.3	203.0	203.0	1,960.0	1,960.0	70.0	70.0

UD means Undetermined– Leakage exceeded flow equipment measurement capability.

FIGURE 1

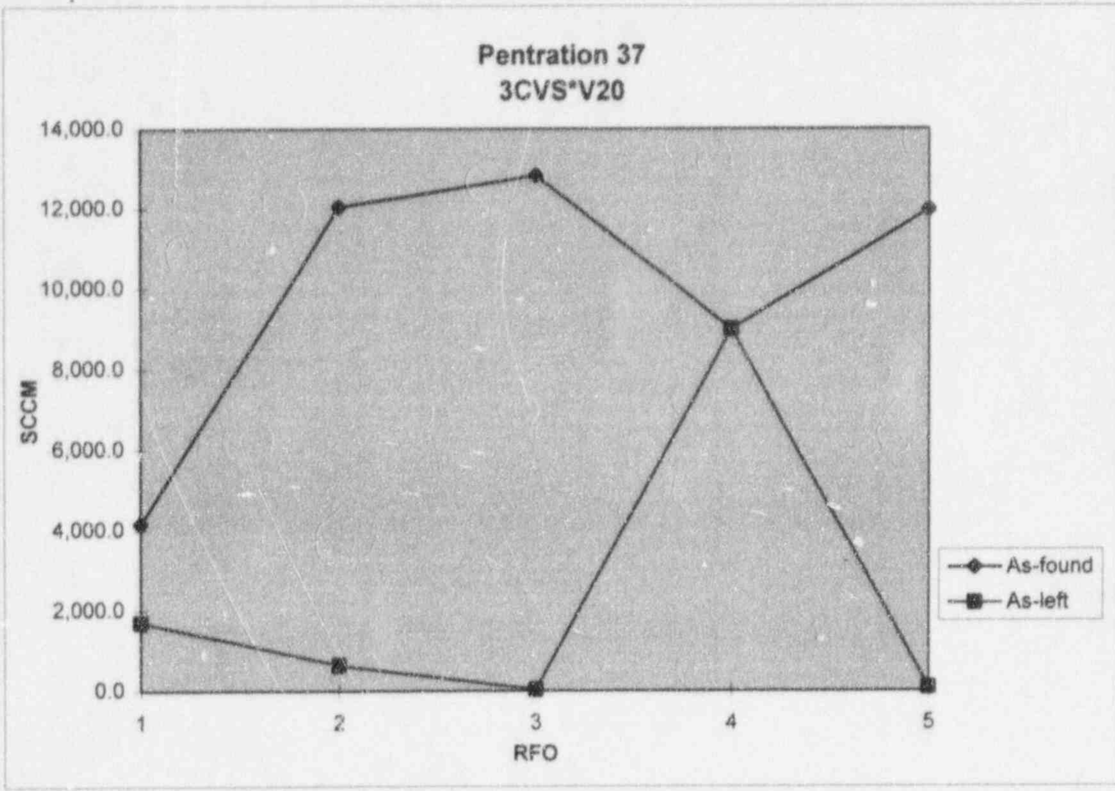


FIGURE 2

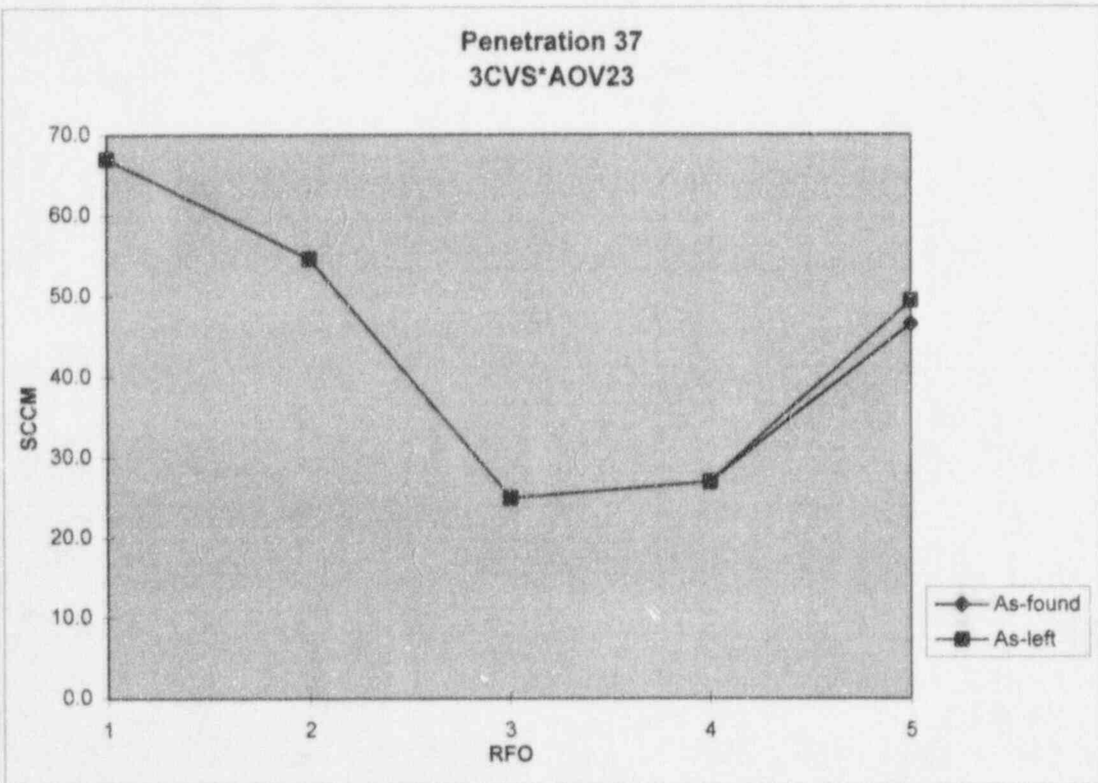
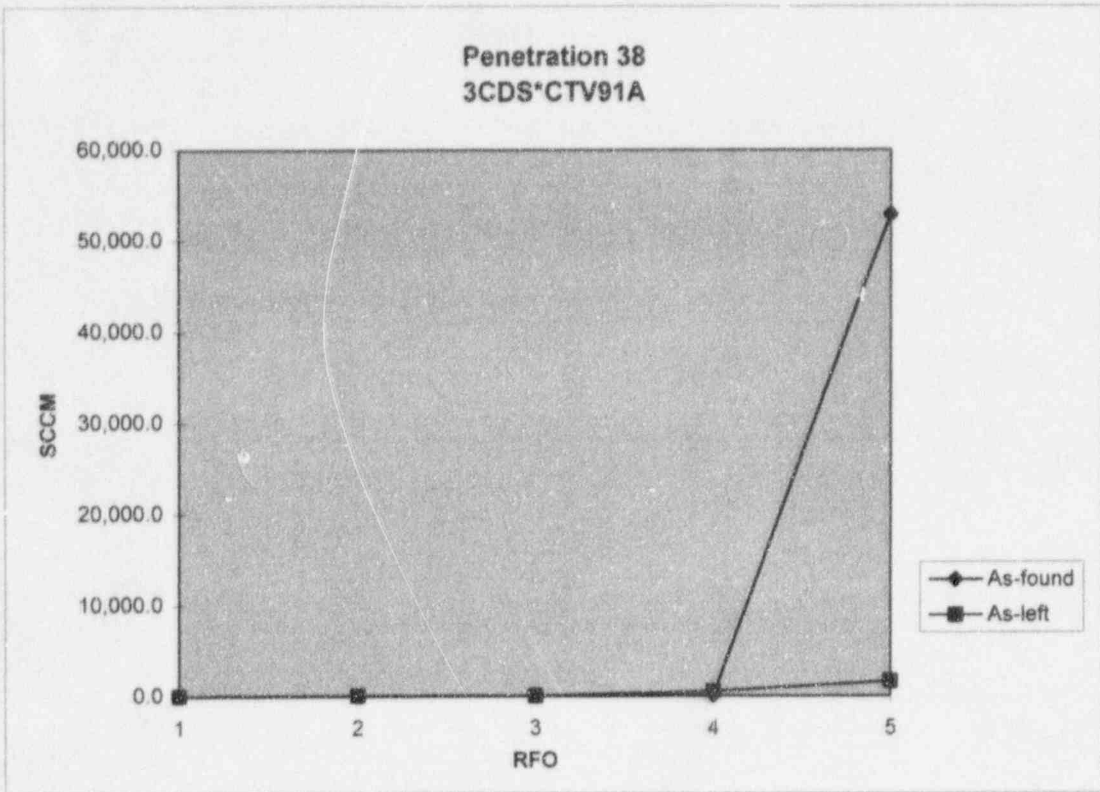


FIGURE 3



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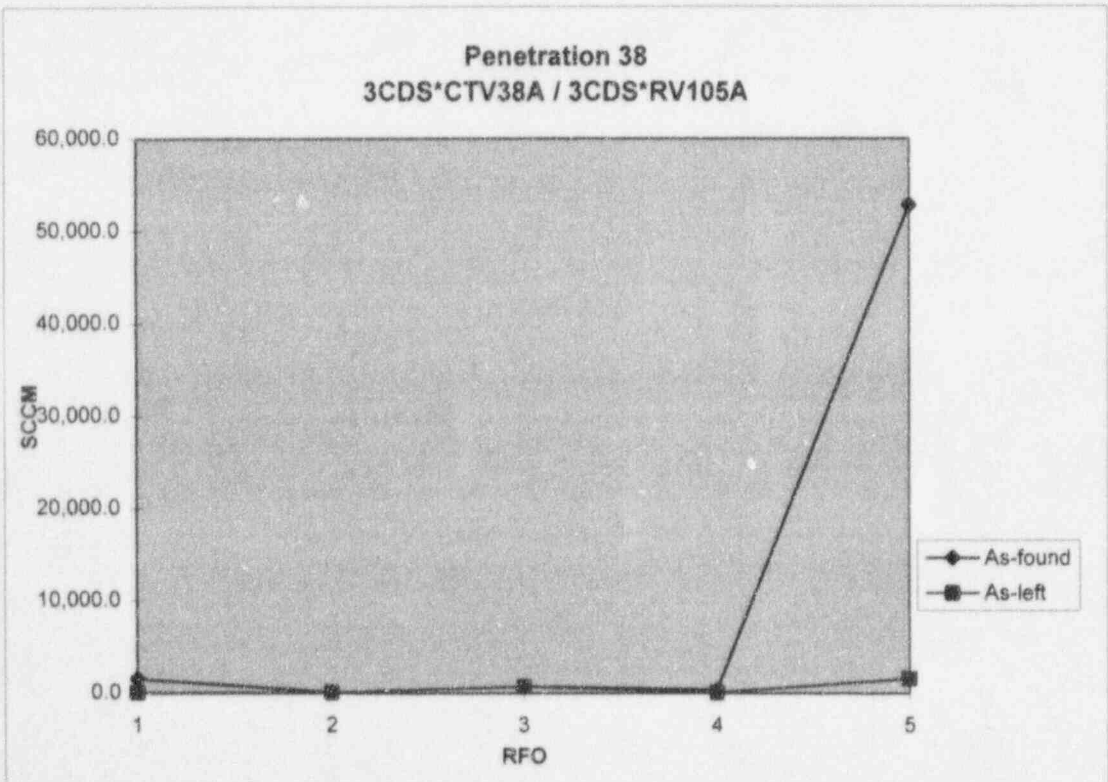

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FIGURE 5

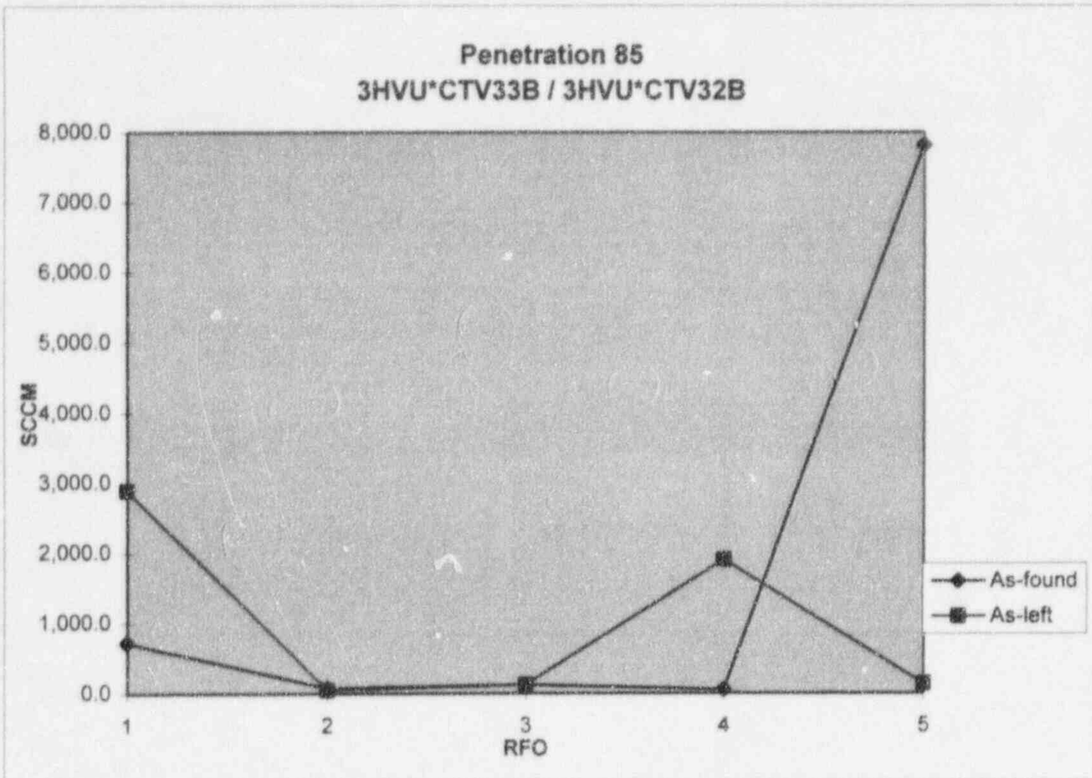


FIGURE 6

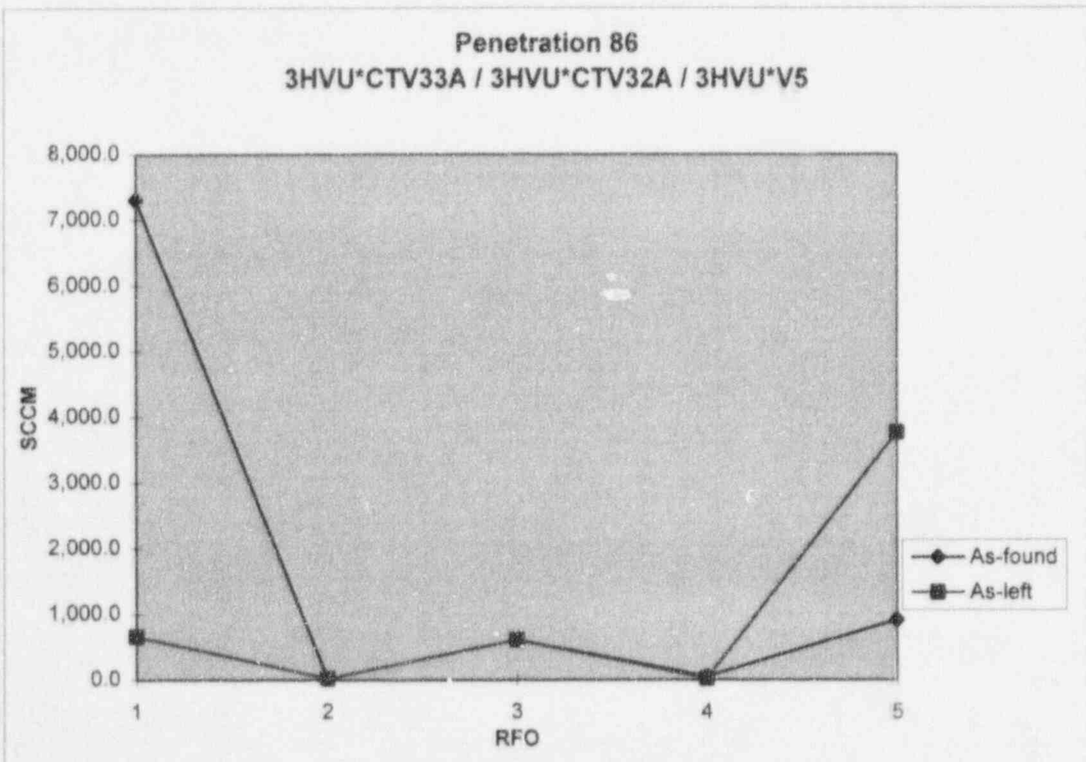


FIGURE 7

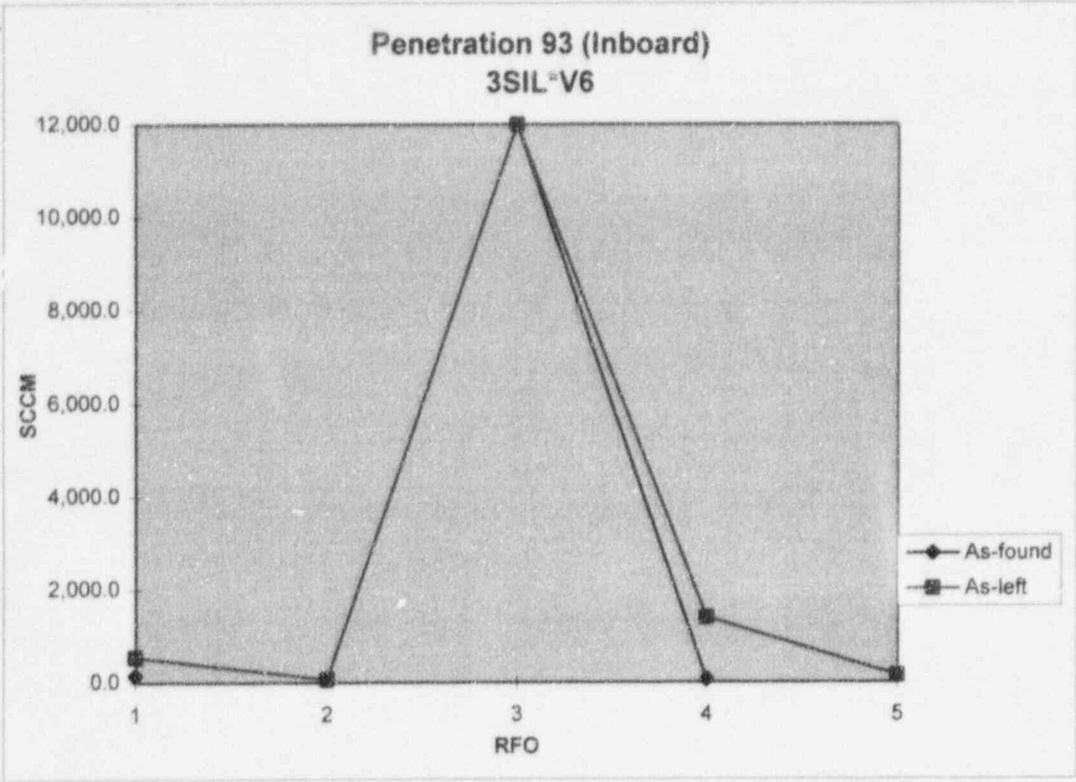
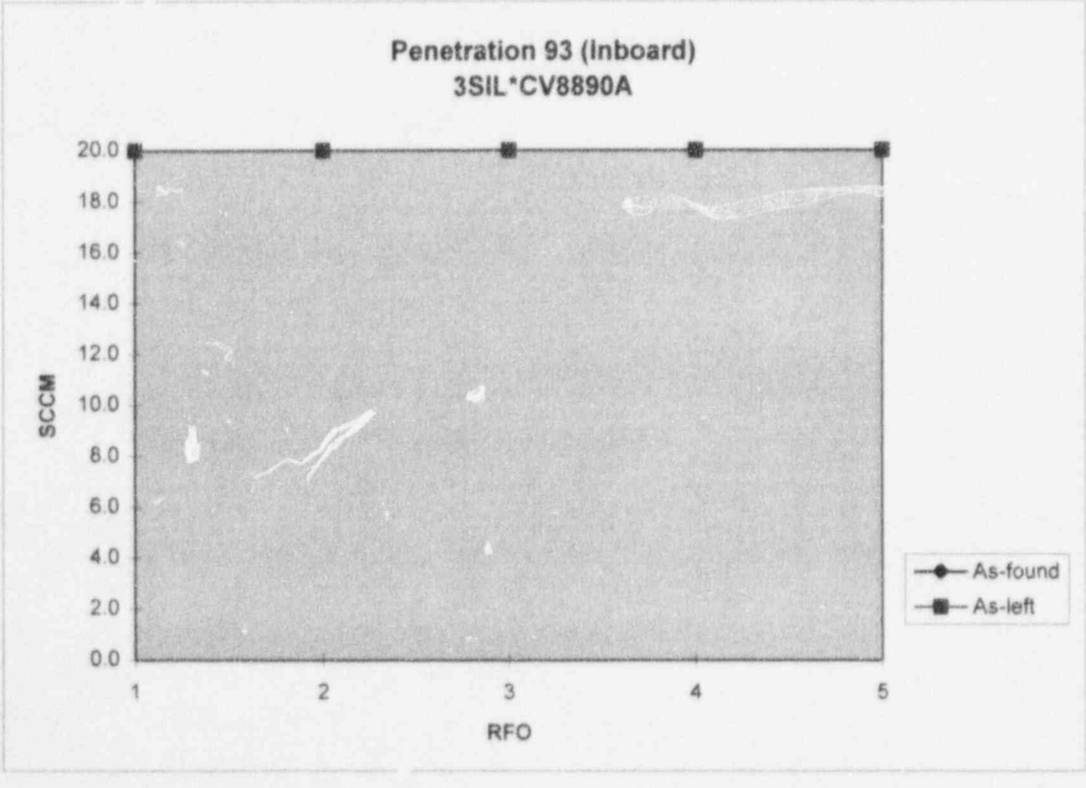


FIGURE 8



MP3TE.XLS

FIGURE 9

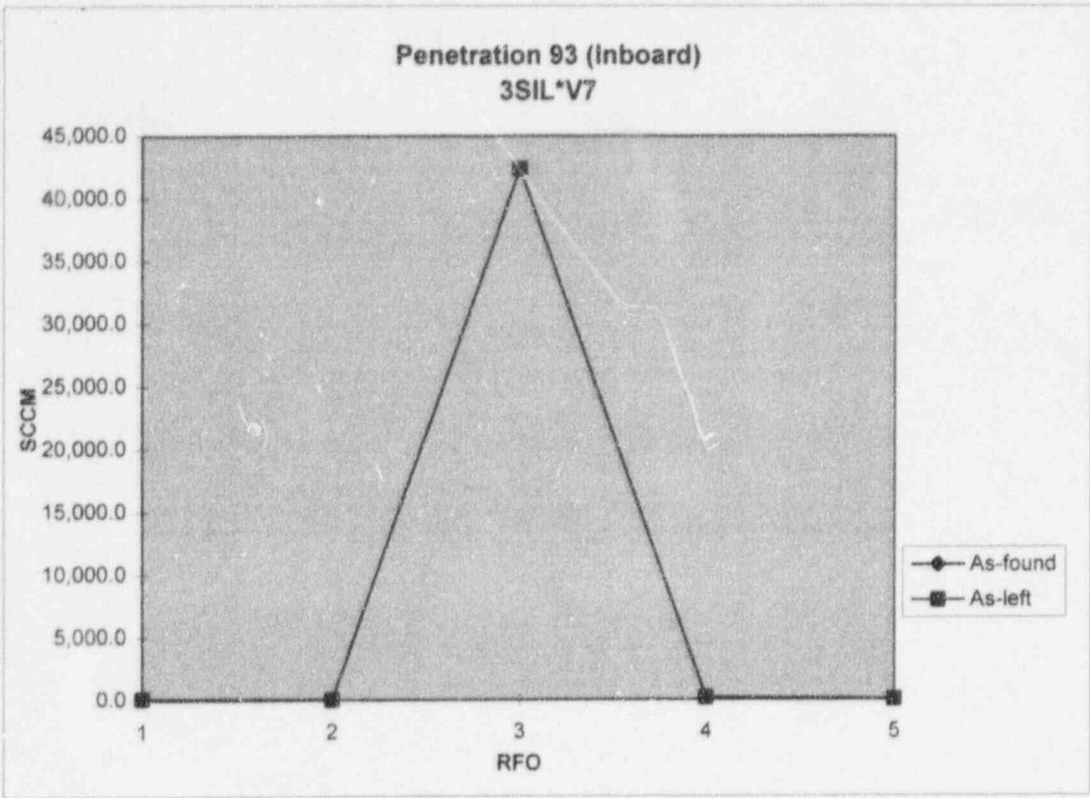


FIGURE 10