

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

SPECIAL MAINTENANCE INSTRUCTION

SMI-0-317-52

INSTRUMENT LINE CLAMP INSPECTION

Units 1 and 2

Revision 1

PREPARED BY: N. Sharma

RESPONSIBLE SECTION: Mechanical Maintenance

REVISED BY: N. Sharma

SUBMITTED BY: [Signature]
Responsible Section Supervisor

PORC REVIEW DATE: FEB 18 1987

APPROVED BY: [Signature]
Plant Manager

DATE APPROVED: FEB 18 1987

Reason for revision (include all Instruction Change Form Nos.):

Revised in accordance with ICF No. 87-071, PORC reviewed and
approved 01/20/87.

The last page of this instruction is number: 12

8801280264 880114
PDR ADOCK 05000327
P PDR

1.0 PURPOSE

The inspection program described below is to be performed to determine that installed tubing hangers meet the required span criteria and to find any missing hanger. A review of final results will be performed by DNE to ensure that existing tubing hanger installations are adequate to meet their design functions and to specify additional corrective actions, if required.

2.0 SCOPE

Tubing hangers to be inspected have been randomly chosen from universal printout and modification log books from different systems, and locations throughout Unit 1 and Unit 2 (except Turbine Building) and hangers are without insulation, by designated engineer. The initial sample size will be 83 tubing hangers. If the discrepancy rate is more than 5 percent of the initial sample, a subsequent sample size will be selected and incorporated as an attachment.

NOTE: Any subsequent lots shall be selected after DNE's evaluation of inspection results of previous lots.

3.0 REFERENCES

- 3.1 ECTG Element Report 173.03 SQN R1
- 3.2 47A050 General Notes
- 3.3 Unistrut General Engineering Catalog

4.0 PREREQUISITES

- 4.1 Designated engineer shall provide a work request (WR) for each unit to originate work performance in accordance with this SMI.

4.0 PREREQUISITES (continued)

4.2 The designated engineer shall provide field data packages for tubing hangers. Separate data packages for each hanger as listed in Appendix-A. The data package consists of following items.

- Data Package Cover Sheet
- Data Sheets 1 and 2
- Hanger Map (if available)
- Field sketch showing hanger to be inspected (optional)
- Copy of computer print from universal file or modification log from DNC (if available and for information only)
- Hanger Drawing
- Variance (if available)
- Mechanical drawing (if available)

The data package shall be numbered by the hanger number prefixed with the designation SMI-0-317-52. As constructed drawing shall be used in the package if available.

4.3 Hanger walkdown shall be performed during mode 5 and 6.

4.4 Designated engineer shall obtain required radiation work permits (RWP).

4.5 The following tools and equipment should be available for performing inspection.

- Flashlights
- Tape measures, scales, etc.
- Hanger identification tags
- Safety equipments such as body belts and lanyards

4.6 Scaffolds or temporary ladders shall be installed and removed after inspection work as needed to gain access to selected inspection items.

4.7 The designated engineer shall provide a briefing of the inspection requirements of this procedure to the QC inspectors and document.

5.0 PRECAUTIONS

- 5.1 Comply with industrial safety regulations as contained in HCI-M2 and HCI-M3.
- 5.2 Adhere to all plant radiological and safety procedures.

6.0 PERFORMANCE OF WORK

This instruction is a preplanned guide that establishes planning requirements, work performance instructions and documentation of work in the required sequential order.

6.1 Work Planning

The designated engineer shall complete planning of work and record the required information for each tubing hanger on each package.

6.2 Method of Inspection (Data Sheet 1)

The designated engineer will identify which line on the applicable hanger is being verified for span. This shall be accomplished by hanger map (if applicable) or field sketch which designates actual tubing configuration and identification by this inspection area which includes instrument number, Root Valve Number, etc., if field sketch needed. QC shall verify configuration and document on sketch. Engineer shall also sign sketch for verification.

6.2.1 The span between two hangers will be measured and documented on data sheet. Check two spans before and after the specified hanger. Spans will be verified by QC inspector and recorded by the designated engineer. QC inspector will sign as verifier. A sketch of tubing configuration shall be included with every data sheet. This will be either a hanger map or field sketch.

6.2.2 Check bolt tightness of hanger by hand and record on data sheet.

6.0 PERFORMANCE OF WORK (continued)

6.2 (continued)

- 6.2.3 Check for missing, damaged and tightness of instrument clamps or those clamps other than those allowed in 47A050 notes, sheet 17, on all lines on the designated support.
- 6.2.4 QC to verify hanger in accordance with typical hanger drawings for any other condition which could prevent hanger from performing required function. Document in additional comment area for items that can't be verified (i.e., hole diameter in unistrut, anchor, tightness, etc.), if so state "not able to verify" in comment section.

6.3 Reporting Discrepancies to DNE

- 6.3.1 The designated engineer shall provide inspection Data Sheets 2 and 3 to DNE for review. DNE shall complete Data Sheets 2 and 3 and return to the designated Maintenance Engineer.

Designated Engineers List

- 1) N. P. Sharma
- 2) A. Khanna
- 3) K. Chopra

6.4 Corrective Action

- 6.4.1 If DNE evaluates discrepancy and recommends corrective action, the work shall be performed in accordance with SQM2 or AI-19 as required.

DATA PACKAGE COVER SHEET

Instruction Title: Instrument Line Clamp Inspection

SMI-0-317-52

Data Package No. SMI-0-317-52 Unit No. _____
Equipment Identifier _____
Component Name Tubing Hanger
CSSC Equipment Yes _____ No _____
Initiating Document WR B-

Isometric/Hanger Map Drawing No. _____
Mechanical Drawing No. _____
Flow Diagram Drawing No. _____

Planned By _____ / _____
Designated Engineer Date

SMI Data Sheets Attached _____

Final Review

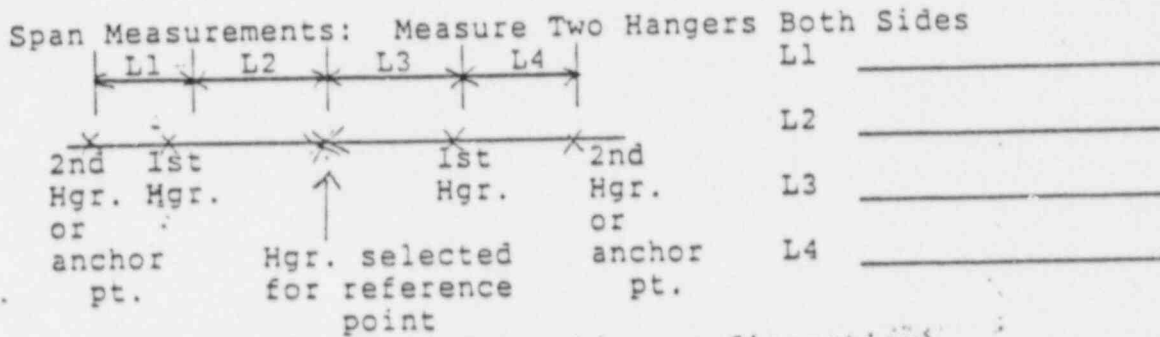
Designated Engineer Date

Responsible Supervisor Date

QA Date

DATA SHEET-1

Type of Support _____
Support Identification _____
System No. _____ Type-of Clamp _____
Clamp Catalog No. _____
Tubing Size _____ Tubing Material _____
Building _____ Floor Elevation _____
Location _____



(see attached sketch for tubing configuration)

Bolt Tightness (check by hand) — Loose _____ Tight _____

Any component of hanger missing or improperly installed wrong.

No _____ Yes _____ If yes, explain _____

NOTE: The QC inspector was briefed by the designated engineer (as required in accordance with step 4.7) prior to performing inspection and understands the requirements of this SMI as attested by signatures below.

Recorded By _____ / _____
Designated Engineer Date

Verified By _____ / _____
QC Inspector Date

DATA SHEET 2

Inspection Data Summary For DNE Review And Recommended
Corrective Action

Data Package No. SMI-0-317-52-
 Discrepancy No. SMI-0-317-52-
 The discrepancy log should be maintained by the
 designated engineer.
 Support Drawing No. _____ Mark No. _____
 Isometric/Hanger Map Drawing No. _____
 Mechanical Drawing No. _____

Span Measurements:

L1	L2	L3	L4	
2nd Hgr. or anchor pt.	1st Hgr. Hgr. selected for reference point	1st Hgr.	2nd Hgr. or anchor pt.	L1 _____
				L2 _____
				L3 _____
				L4 _____

(see attached sheet for actual configuration)

Additional Comments _____

Data summary by Designated Engineer / _____ Date

Submit Data Summary To DNE For Review

DATA SHEET-3

DNE Review And Evaluation Of Tubing Hanger

Corrective action required? Yes _____ No _____

If yes, explain, _____

DNE Engineer

Date

Return Data Sheet To Mechanical Maintenance Designated Engineer

Corrective Action and Documentation Performed

Describe work performed. List WR or work plan number used to accomplish work or documentation.

----- Corrective Action Reviewed. Installation Acceptable.

QC Inspector

Date

Designated Engineer

Date

APPENDIX - A
HANGER LIST

NO	HGR ID. NO.	HGR DWG NO.	MECH. DWG NO.	FLOW DIA.	LOCATION
1	A11-05 5001 1-7-34 0350HIAB3685A	A11-5 51-12 685	47W600-163 47W464-2	47W859-2	EL. 669' AUX. PANEL 0-L-356 A5-S
2	0350HIAB04024	A6-3' T-1' 51-12 659	47W600-160 47W560-7	47W830-1	EL. 653' AUX. PANEL 0-L-379 SUMP TANK
3	0350HIAB01410	A7-2' V+4' 51-12 663	47W600-93 47W432-1	47W811-1	EL. 653' AUX. PANEL 1-L-12 A7-V
4	0350HIAB13514	A9+2' V+3' 51-12 643	47W600-93 47W432-1	47W811-1	EL. 653' AUX. PANEL 2-L-12 A10-V
5	0350HIAB01431	A7-1' V-9' 51-12 663	47W600-93 47W432-1	47W811-1	EL. 653' AUX. PANEL 1-L-13 A7-V
6	0350HIAB13541	A9+1' V-9' 51-19 663	47W600-93 47W432-1	47W811-1	EL. 653' AUX. PANEL 2-L-13 A10-V
7	0350HIAB00156	A1-1' U-2' 51-3 666	47W600-131 47W437-1,6	47W812-1	EL. 653' AUX. PANEL 1-L-15 A7-U
8	0350HIAB13684	A9+3' U-2' 51-12 662	47W600-131 47W437-1,6	47W812-1	EL. 653' AUX. PANEL 2-L-15 A9-U
9	1-72-2058 0350HIAB00124	A7-2' T+5' 51-3 665	47W600-131 47W437-1,6	47W812-1	EL. 653' AUX. PANEL 1-L-16 A7-T
10	2-70-251A 0350HIAB13531	A9+2' T+1' 51-12 664	47W600-131 47W437-1,6	47W812-1	EL. 653' AUX. PANEL 2-L-16 A10-T
11	2-62-372C 0350HIAB01277	A5+12' S-8' 51-12 660	47W600-114 47W555-5	47W809-3	EL. 653' AUX. PANEL 2-L-17 A9-S
12	0350HIAB00196	A4+17' S 0 51-3 676	47W600-181 47W555-6	47W809-3	EL. 669' AUX. PANEL 1-L-150 A4-S
13	1-3-320C 0350HIAB04041	A2-1' T+3' 51-12 674	47W600-65 47W427-1	47W803-2	EL. 669' AUX. PANEL 1-L-215 A2-U
14	0350HIAB07200	A14+11' T+12' 51-35 675	47W600-65 47W427-1	47W803-2	EL. 669' AUX. PANEL 2-L-215A A14-U
15	1-70-292B 0350HIAB04031	A4+12' V+10' 51-12 678	47W600-134 47W464-13	47W859-2	EL. 669' AUX. PANEL 1-L-291 A3-W
16	0350HIAB13847	A11+11' V+5' 51-12 683	47W600-134 47W464-13	47W859-2	EL. 669' AUX. PANEL 2-L-291 A11-W
17	0350HIAB13876	A11+11' V+21' 51-12 685	47W600-136 47W464-13	47W859-2	EL. 669' AUX. PANEL 2-L-292 A11-W
18	0350HIAB13884	A11+11' V+6' 51-19 674	47W600-136 47W464-13	47W859-2	EL. 669' AUX. PANEL 2-L-293 A11-W
19	0350HIAB07091	A14+12' T+1' 51-35 678	47W600-129 47W427-1	47W803-2	EL. 669' AUX. PANEL 2-L-432 A14-T
20	1-62-352C 0350HIAB00492	A3+4' U-3' 51-12 678	47W600-82 47W491-15	47W819-1	EL. 669' AUX. PANEL 1-L-108A A3-U
21	2-62-353C 0350HIAB00916	A13-6' U-2' 51-12 677	47W600-82 47W406-2	47W809-1	EL. 669' AUX. PANEL 2-L-108A A14-U
22	0350HIAB10856	A3-14' U+1' 51-19 702	47W600-65 47W427-4	47W803-2	EL. 690' AUX. PANEL 1-L-216 A2-U

APPENDIX - A
HANGER LIST

SQN
SMI-0-317-52
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Revision 0

NO	HGR ID. NO.	HGR DWG NO.	MECH. DWG NO.	FLOW DIA.	LOCATION
24	0350HIAB09943	A13-5 V-1' 51-12 701'	47W600-175 47W400-2	47W801-1	EL. 690' AUX. PANEL 2-L-362 A13-V
25	0350HIAB09944	A13-3 V-1' 51-12 701'	47W600-31 47W400-2	47W801-1	EL. 690' AUX. PANEL 2-L-102B A13-U
26	0350HIAB729A422VA 023 2-3-3658	A4-V 729' 51-12	47W600-132 47W464-4	47W859-2	EL. 714' AUX. PANEL 1-L-290 A3-W
27	0350HIAB07217	A13 T-2' 51-12 721'	47W600-228 47W427-4	47W803-2	EL. 714' AUX. PANEL 2-L-439 A13-S
28	1-63-316C V018 1350HIAB698A0402	A4-2' V+13' 51-12 698'	47W600-154 47W435-1	47W811-1	EL. 690' PEN. RM. PANEL 1-L-42A A4-W
29	0350HIAB10494	A4-1' V+12' 51-21 725'	47W600-167 47W427-3	47W803-2	EL. 714' AUX. PANEL 1-L-341 A4-W
30	0350HIAB07287	A11.5-17' WA-4 51-12 749'	47W600-88 47W435-24	47W811-2	EL. 740' 6" ADD'L EQUIP. BLDG. PANEL 2-L-257 A11.5-WA
31	1-3-316B 5001 1350HIAB690A0306	A3-5 690' 51-35	47W600-62 47W427-2	47W803-2	EL. 690' AUX. PANEL T-A4
32	0350HIAB00328	A6+21' R+1' 51-12 695'	47W600-115 47W555-17	47W809-3	EL. 690' AUX. PANEL 1-L-60A A6-R
33	0350HIAB01614	A6+2' T+1' 51-12 697'	47W600-115 47W464-2	47W859-2	EL. 690' AUX. PANEL 1-L-46 A6-T
34	0350HIAB09570	A12+9' T-1' 51-12 695'	47W600-174 47W555-18	47W809-3	EL. 690' AUX. PANEL 2-L-47 A12-T
35	0350HIAB09954	A12+10' T-1' 51-12 701'	47W600-62 47W427-2	47W803-2	EL. 690' AUX. PANEL 2-L-214A A4-T
36	0350HIAB09995	A13-12' T 51-12 701'	47W600-62 47W427-2	47W803-2	EL. 690' AUX. PANEL 2-L-222A A13-T
37	0350HIAB04017	A15-1' T+12' 51-12 695'	47W600-168 47W560-14	47W830-1	EL. 690' AUX. PANEL 0-L-59A A14-T
38	0350HIAB09552	A13-17' U+20' 51-12 699'	47W600-115 47W406-4	47W809-1	EL. 690' AUX. PANEL 2-L-43 A13-V
39	0082HPDGH-15	47A053-136	DGB-008 17W586-3	47W839-1	D.G. BLDG. 1A1 1A2 NEAR AIR COMPRE.
40	0082HPDGH-7	47A053-136	17W586-3	47W839-1	D.G. BLDG. 1A-1 NEAR AIR COMPRE.
41	0082HPDGH-23	47A053-136	17W586-3	47W839-1	D.G. BLDG. 2A-1 NEAR AIR COMPRE.
42	0082HPDGH-31	47A053-136	17W586-3	47W839-1	D.G. BLDG. 2A-A NEAR AIR COMPRE.
43	2-43-12611	47A051-12	47W625-3,4	47W848-8	ANNULUS, RGRL, A2-285 EL. 706' NEAR PEN. X-51
44	2-43-5535	47A051-21	47W625-3,4	47W848-8	ANNULUS, RGRL, A2-2570 EL. 704'
45	2-43-5582	47A051-21	47W625-3,4	47W848-8	ANNULUS, RGRL, A2-2570 EL. 705'

APPEND X - A
HANGER LIST

NO.	HGR ID. NO.	HGR DWG NO.	MECH. DWG NO.	FLOW DIA.	LOCATION
47	0350HIXX05431	C2+3 54-31 674'	47W931-4	47W866-1	CONT. BLDG. DOOR C2 PANEL HV-104 EL.669'
48	0350HIXX05538	C3-3 54-31 677'	47W931-4	47W866-1	CONT. BLDG. DOOR C2 PANEL HV-105
49	0350HIXX11785	C1+4 R-4 51-38 669'	47W450-2	47W845-4	CONT. BLDG. DOOR C2 AC-A O-TCV-67-199 EL.669'
50	0350HIXX11781	C1+4 N+5 51-38 669'	47W450-2	47W845-4	CONT. BLDG. DOOR-C2 AC-A O-TCV-67-195 EL.664'
51	1-43-4291	ANNULUS AE291 51-19 709'	47W625-3,4	47W860-1	ANNULUS RB#1 AE 291° EL.709'
52	1-43-1104	54-3	47W625-3,4	47W860-1	ANNULUS, RB#1, AE-227° EL.709'
53	1-43-4406	51-21	47W625-3,4	47W860-1	ANNULUS, RB#1, AE 250° EL.705'
54	1-43-5543	51-21	47W625-3,4	47W860-1	ANNULUS, RB#1, AE 255° EL.707'
55	025009 2350HIAB722A03	A8-5 722' 51-19	47W600-136 47W464-13	47W859-2	EL.714' AUX BLDG. PANEL 2-L-259 AS-T
56	1-43-4237	AE 285° 705' 51-21	47W625-3,4	47W860-1	ANNULUS, RB#1, AE 285° EL.705'
57	1-43-4289	51-19	47W625-3,4	47W860-1	ANNULUS, RB#1, AE 287° EL.709' PEN. X-103
58	30 024 1350HIRI68801A	RACEWAY AE14 51-12 688'	47W625-3,4	47W860-1	RACEWAY, RB#1, AE-12° EL.688'
59	30 014 1350HIRI688355A	RACEWAY AE355 51-12 688'	47W625-3,4	47W860-1	RACEWAY, RB#1, AE-355° EL.688'
60	047 1350HIRI68007600A	RACEWAY AE76 51-19 680'	47W625-3,4	47W860-1	RACEWAY, RB#1, AE-76° EL.680'
61	1-68-412D 1350HIRI69107700A	RACEWAY AE77 51-19 691'	47W465-1	47W813-1	RACEWAY, RB#1, AE-77° EL.691'
62	1-70-703 1350HIRI68811200A	RACEWAY AE112 51-12 688'	47W464-13	47W859-2	RACEWAY, RB#1, AE-112° EL.688'
63	1350HIRI68011300048	RACEWAY AE113 51-19 680'	47W625-3,4	47W860-1	RACEWAY, RB#1, AE-113° EL.680'
64	1350HIRI69916030442	RACEWAY AE160 51-12 689'	47W625-3,4	47W860-1	RACEWAY, RB#1, AE-160° EL.689'
65	R001 2043HIAB700A1003	A10-R EL700 52-20-2	47W625-3,4	47W860-1	EL.690' AUX. A10-R
66	30066 2043HIR2701323A	A13 PEN. RM. 52-20-5 701'	47W625-3,4	47W860-1	EL.690' AUX. PEN. RM. NEAR COL. A-13 ON WALL
67	0350HIXX05385	C1 R-1 54-31 678'	47W931-4	47W866-1	CONT. BLDG. DOOR C2 PANEL HV-104
68	0350HIXX05393	C1 R-33 54-31 678'	47W931-4	47W866-1	CONT. BLDG. DOOR C2 PANEL HV-104

ORIGINAL

INSTRUMENT LINE SAMPLING STUDY FOR
EMPLOYEE CONCERN (EC) ELEMENT NO. 173.03

JNR/1.8.2

CEB/SQEP/CI

HANGER SUPPORT DISCREPANCY INSTRUMENT LINE

SQCG1011X84
EC 173.03

(For RIMS use)

20

RIMS accession number

87031100051 | 827 870304 801

APPLICABLE DESIGN DOCUMENT(S)
SQN-DC-V-1.0

870514F0012(26) 825 870423 827

SAR SECTION(S) UNID SYSTEM(S)

R-
R-

Revision 0	R1	R2	R3	Safety-related? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
ECN No. (or indicate Not Applicable) NA	NA			Statement of Problem EMPLOYEE CONCERN EC 173.03 IDENTIFIED POTENTIAL MISSING INSTRUMENT LINE CLAMPS IN CATEGORY I STRUCTURES AT SQN. A SAMPLE OF 60 CLAMPS WERE CHOSEN AT RANDOM AND THE SPANS ADJACENT TO THESE CLAMPS WERE MEASURED FOR EVALUATION OF POTENTIAL OVERSPANS. THIS CALCULATION WILL SUMMARIZE THE RESULTS FROM THE SAMPLING PROGRAM.
Prepared C.F. [Signature] 7117	[Signature]			
Checked H. [Signature]	H. [Signature]			
Reviewed [Signature] for [Signature]	[Signature] for [Signature]			
Approved [Signature]	[Signature]			
Date 3-2-87	4-9-87			
List all pages added by this revision.	2, 17 to 7.2			
List all pages deleted by this revision.				
List all pages changed by this revision.	2, 3, 10, 13, 17, 18			

Abstract

These calculations contain an unverified assumption(s) that must be verified later. Yes No

R0/ CALCULATIONS INDICATE THAT THE SAMPLED INSTRUMENT LINES AND THE CORRESPONDING SUPPORTS MEET NORMAL CODE ALLOWABLES AND ARE ACCEPTABLE AS INSTALLED.

R1/ CALCULATIONS INDICATE THAT THE SAMPLED INSTRUMENT LINES AND THE CORRESPONDING SUPPORTS MEET NORMAL CODE ALLOWABLES AND ARE ACCEPTABLE AS INSTALLED. THIS CALCULATION CONTAINS NO UNVERIFIED ASSUMPTION(S).

45 1
49 2
71 1

Microfilm and store calculations in RIMS Service Center
 Microfilm and return calculations to

Microfilm and destroy
Address

TITLE SUMMARY OF PIPING ANALYSIS N2-ECP-173.3-MISC					PLANT/UNIT SGN / 202
PREPARING ORGANIZATION SSEP/EMG # 1		KEY NOUNS (Consult RIMS DESCRIPTORS LIST) PIPING ALTERNATE ANALYSIS FOR ECP 173.03			
BRANCH/PROJECT IDENTIFIERS N2-ECP-173.3-MISC		Each time these calculations are revised, preparator must ensure that the original (ROI) RIMS accession number is listed in: Rev (for RIMS use) 372 RIMS ACCESSION NUMBER			
APPLICABLE DESIGN DOCUMENT(S) SGN - RAH SGN - DC - V - IC		RO	870310A0012	B25	870305 812
SAR SECTION(S) 3.7.3 3.7.2		UNID SYSTEM(S) N/A	R	87C424E0022 43	B25 870421 808
Revision 0		R1	R2	R3	Safety related? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
ECN No. (or indicate not applicable) N/A		Statement of Problem THIS CALCULATION DOCUMENTS THE RESULTS OF PIPING ANALYSIS CARRIED OUT TO EVALUATE AND QUALIFY OVERSPANS IN INSTRUMENT SENSING LINES AND AIR SAMPLING LINES AT AMBIENT TEMPERATURE.			
Prepared	D. C. Hoffman ¹¹⁰ 0402	Raymond Fung	REEL 306 6394 1743		
Checked	Raymond Fung	D.C. Hoffman	RO 6446		
Reviewed	Ken Hill	Ken Hill	E1		
Approved	Wang K. Adams	W. Adams			
Date	3/4/87	4/17/87			
List all pages added by this revision.					
	List all pages deleted by this revision.				
	List all pages changed by this revision.				
Abstract These calculations contain an unverified assumption(s) that must be verified later. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
COMPUTER PRINTOUT MICROFICHE NO.					
DISCREPANCY NO. 16 #.65		TVA-6009292			
X DISCREPANCY NO. 71		TVA-6009336			
DISCREPANCY NO. 72		TVA-6009300			
DISCREPANCY NO. 45		TVA-6009428			
<input type="checkbox"/> Microfilm and all other calculations in RIMS Service Center. <input checked="" type="checkbox"/> Microfilm and return calculations to LENA LOVELADY					Microfilm and destroy <input type="checkbox"/> Address: DSC-G, SQMP