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Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
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1999 Annual Report of Steam Generator Tubing Inservice Inspections

Gentlemen:

Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications 4.4.5.5.b and 6.9.1.5.b require that complete results of all ANO-2 steam generator (SG) tubing inservice inspections performed during the report period be submitted to the NRC on an annual basis. Attached is the Steam Generator Tubing Inservice Inspection Report which presents the results from ANO-2's refueling outage (2R13) and scheduled mid-cycle outage (2P99) inspections. These inspections were conducted during January-February and November 1999.

The 2R13 inspections performed on both SGs involved a 100% full-length bobbin coil examination, with the exception of the tube area below the sleeves. Also performed was a 100% rotating pancake coil (RPC) probe inspection in the hot leg expansion transition region. The RPC used consists of a 0.115 inch pancake coil with both axially oriented and circumferentially-oriented coils. The RPC was also utilized for confirmation of bobbin coil indications. The Plus Point coil was used to test the small radius U-bends, sleeves, dented eggcrate intersections, and drilled support plate intersections. The 2R13 inspection results have previously been discussed in submittals dated February 12, 1999 (2CAN029902), June 2, 1999 (2CAN069901), November 5, 1999 (2CAN119902), and in a meeting with the Staff on June 28, 1999.

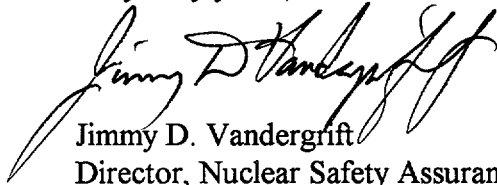
The 2P99 inspections focused on the lower eggcrates on the hot leg side of both generators, with additional testing at the top of the tubesheet (TTS) in the "A" SG. The bobbin inspection was conducted from the tube end hot to the 07 hot support plate. The TTS examination was performed to minimize the potential for leakage during the last half of the operating cycle. The TTS examination consisted of areas where the largest flaws have developed in the past, and included a total of 503 tubes in two separate areas on the hot leg

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side of the "A" SG. The 2P99 inspection results have been discussed in submittals dated December 2, 1999 (2CAN129905), December 21, 1999 (2CAN129911), February 11, 2000 (2CAN020005), and a meeting at the NRC on February 17, 2000.

This submittal completes the reporting requirements of ANO-2 Technical Specifications 4.4.5.5.b and 6.9.1.5.b for 1999. The attachment also provides the information designated by NEI 97-06 to be included in the report to be submitted 12 months after each inservice inspection. Should you have any questions regarding this issue, please contact me.

Very truly yours,



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ARKANSAS NUCLEAR ONE, UNIT 2 STEAM GENERATOR TUBING INSERVICE INSPECTION ANNUAL REPORT

1 INTRODUCTION

Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specification (TS) 4.4.5.5.b requires Entergy Operations to submit an annual report to the NRC that outlines the details of the steam generator (SG) tubing inservice inspections that were performed during the reporting period. The report shall include:

1. Number and extent of tubes inspected.
2. Location and percent of wall-thickness penetration for each indication of an imperfection.
3. Identification of tubes plugged or sleeved.

In addition to the above information, the 12-month report specified in NEI 97-06¹ requires the following:

1. Scope of inspection performed.
2. Active degradation mechanisms found.
3. NDE techniques utilized for each degradation mechanism.
4. Number of tubes plugged or repaired during the inspection outage for each active degradation mechanism. Repair methods utilized and the number of tubes repaired by each repair method.
5. Total number and percentage of tubes plugged and/or repaired to date and the effective plugging percentage in each steam generator.
6. Description of tube integrity assessment.
7. Description of corrective actions implemented, if any.
8. Evaluation of circumstances if condition monitoring results exceeded the previous cycle operational assessment.

This report is formatted to reflect the information listed above for the NEI annual report. Since item #2 from the TS requirements (location and percent of wall-thickness

penetration for each indication of an imperfection) is not included in the NEI format, it will be discussed after item #8. The information requested by items #1 and #3 from the Technical Specifications report are subsumed within the NEI 97-06 report items.

The operating period for this report includes two outages, refueling outage 2R13 in February 1999 and the planned mid-cycle outage 2P99 in November 1999.

2 DESIGN

ANO-2 is a Combustion Engineering (CE) Model 2815 designed plant that began operation in December 1978. The plant has two recirculating SGs, each having 8411 high temperature mill annealed Inconel Alloy 600 tubes with a 0.75" outer diameter and a 0.048" wall thickness. The tubes were full depth explosively expanded into the tubesheet. The tube supports in the lower part of the SG are of an eggcrate (EC) type which consists of an array of intersecting one inch wide and two inch wide flat carbon steel plates at each support elevation. There are seven full EC support plates, two partial EC support plates, two partial drilled support plates, and five strap supports called batwings (BW) for the horizontal run of the tubing. The BW supports consist of two diagonal and three vertical straps. Two tube sleeve types, Babcock & Wilcox (B&W) kinetic and CE tungsten inert gas (TIG) welded, are currently installed in the SGs.

3 2R13 OUTAGE RESULTS

3.1 2R13 Scope

Table 3.1 lists the inspection scope of 2R13. Detailed inspection results were provided in the C-3 report submitted February 12, 1999 (2CAN029902)².

**Table 3.1
2R13 Inspection Scope**

SG "A"

<u>Examination Type</u>	<u>Inspections Conducted</u>	<u>% Scope</u>	<u>Expansion Req'd</u>
Bobbin	7088	100	No
RPC ET HL	6407	100	No
Small Radius U-bends (1-4)	48	20	No
B&W Sleeves	293	100	No
CE TIG Sleeves	78	20	Yes
CE TIG Sleeve Expansion	310	80	No
Drilled Support Plate Intersections	604	20	No
Dents in EC Supports	3	100*	Yes
Dents in EC Expansion	35	100**	No
Special Interest	324	N/A	N/A

* Based on ≥ 5 volts

** Based on ≥ 3 volts

RPC = rotating pancake coil ET = expansion transition

HL = hot leg

SG "B"

<u>Examination Type</u>	<u>Inspections Conducted</u>	<u>% Scope</u>	<u>Expansion Req'd</u>
Bobbin	7213	100	No
RPC ET HL	7012	100	No
Small Radius U-bends	48	20	No
B&W Sleeves	48	100	No
CE TIG Sleeves	31	20	Yes
CE TIG Sleeve Expansion	122	80	No
Drilled Support Plate Intersections	603	20	No
Dents in EC Supports	6	100*	Yes
Dents in EC Expansion	8	100**	No
Special Interest	262	N/A	N/A

* Based on ≥ 5 volts

** Based on > 3 volts

3.2 Degradation Mechanisms Found

Table 3.2 outlines the number of indications found during the outage for each location.. The active damage mechanism is outside diameter stress corrosion cracking (ODSCC).

Table 3.2
2R13 Inspection Results

<u>Location</u>	<u>SG "A"</u>	<u>SG "B"</u>
Hot Leg ET Region (circumferential)	43	33
Sludge Pile (axial and volumetric)	4	4
EC Support Plate (axial)	38	72
EC Support Plate (volumetric)	2	1
B&W Sleeves (axial and circumferential)	3	0
CE TIG Sleeves (axial and circumferential)	5	3
Free Span (axial)	23	2
Dents in Eggcrate Supports (axial)	2	0
Bat Wings (axial)	0	1
Loose Part Indication	0	1
Preventative Tube Plugs	3	2

3.3 NDE Techniques Utilized

Table 3.3 identifies the non-destructive examination (NDE) technique used for each location:

Table 3.3
2R13 NDE Techniques

Location	NDE Technique
Hot Leg ET Region	0.115" pancake coil
Sludge Pile	0.600" bobbin with 0.115" pancake for confirmation
EC Support Plate	0.600" bobbin with 0.115" pancake for confirmation
B&W Sleeves	Plus Point
CE TIG Sleeves	Plus Point
Free Span	0.600" bobbin with 0.115" pancake for confirmation
U-bends	Plus Point
Dented Eggcrates	Plus Point
Drilled Support Plate	Plus Point

3.4 Number of Tubes Plugged or Repaired by Damage Mechanism

There were no sleeves installed during 2R13. Mechanical-rolled plugs were used for all repairs. Table (3.4) lists the number of tubes plugged for each damage mechanism:

**Table 3.4
2R13 Plugs Installed**

Damage Mechanism	SG "A"	SG "B"
Circumferential Cracking	42	32
Eggcrate Axial	31	67
Sludge Pile (SP) Axial	4	3
Free Span Axial	9	1
Batwing Axial	0	1
TTS Volumetric	2	0
B&W Sleeves	3	0
CE TIG Sleeves	5	3
Preventative Tube Plug	3	1
Dented Eggcrates	2	0
TTS Circ/ EC Axial	1	0
EC Axial/ FS Axial	0	1
SP Axial/ TTS Circ.	0	1
EC Volumetric	2	1
Loose Part Indication	0	1
Total Repairs	104	112

TTS = top of tubesheet

FS = free span

3.5 Number and Percent Plugged and Sleeved Following 2R13

The number of tubes plugged and inservice sleeves following 2R13 are shown in Table 3.5:

**Table 3.5
Cumulative Plugs and Sleeves In Service**

	SG "A"	SG "B"
B&W Sleeves	286	48
CE TIG Sleeves	380	149
Plugs	1427	1310
Equivalent Plugs	1451.5	1316.1
Percent Plugged	17.26 %	15.65 %

3.6 Description of Tube Integrity Assessment

The tube integrity assessment is based on two methodologies. The methodologies are condition monitoring during the outage and the operational assessment performed following the outage to evaluate the acceptable runtime following the outage. Condition monitoring was performed to evaluate both leakage and tube integrity and was submitted in 2CAN029902². The condition monitoring performance criteria were met, with the exception of tube R85L67 in SG "B". This tube did not meet the 3 Δ P criterion prior to burst. The operational assessment was submitted on June 2, 1999 (2CAN069901)³. The operational assessment was performed using probabilistic methods for all identified damage mechanisms and justified operation until the next scheduled outage, which was 2P99 in November of 1999.

3.7 Description of Corrective Actions

Due to limitations of tube R85L67, a corrective action that was taken based on the fact that while a production analyst had initially identified the flaw in the previous outage, it was subsequently dispositioned as a non-flaw by resolution analysts. The corrective action was for all indications identified by one or both of the production analysts to be tested with the pancake coil without first requiring resolution analysts to independently confirm the indications. Several additional indications were identified through the corrective action. The corrective action was performed during 2R13 at the 01H-03H ECs.

3.8 Evaluation of Exceeding Condition Monitoring

Tube R85L67 did not leak at peak accident pressure, but was unable to satisfy the 3 Δ P margin criterion. The root cause evaluation determined that Tube R85L67's condition was due to probability of detection (POD) issues associated with the bobbin coil at the first three eggcrate support plates. Corrective actions were taken during the outage to improve the POD. The corrective actions were to perform RPC testing of all indications identified by a production analyst at the first three eggcrate supports. Resolution analysts did not further evaluate the bobbin data. This action increased the POD and reduced the probability of failing 3 Δ P in subsequent outages. The SGs will be replaced during the next refueling outage (2R14), which is schedule for fall of 2000. The ultimate root cause of the degradation is a design deficiency in the original tubing material. Inconel 600 is not as resistant to caustic induced corrosion as was originally believed. Since the time of the original design, industry experience has shown that Inconel 690 is much more resistant, especially when combined with today's tighter chemistry controls. Therefore, the ultimate corrective action will be to replace the current generators with new ones that contain Inconel 690 tubing.

3.9 Item #2 of the Technical Specification (location and percent of wall-thickness penetration for each indication of an imperfection)

This topic is addressed for the 2R13 outage in Tables 1 and 2 for SG "A" and SG "B", respectively. Wear indications left in service are identified in Tables 5 and 6.

4 2P99 OUTAGE RESULTS

4.1 2P99 Scope

Table 4.1 lists the inspection scope of 2P99. Detailed inspection results were provided in the condition monitoring report 2CAN129911⁴, submitted December 21, 1999.

**Table 4.1
 2P99 Inspection Scope**

SG "A"

<u>Examination Type</u>	<u>Inspections Conducted</u>	<u>% Scope</u>	<u>Expansion Req'd</u>
Bobbin	6984	100	No
RPC ET HL	503	~ 8	No
Special Interest	333	N/A	N/A

SG "B"

<u>Examination Type</u>	<u>Inspections Conducted</u>	<u>% Scope</u>	<u>Expansion Req'd</u>
Bobbin	7101	100	No
Special Interest	224	N/A	N/A

4.2 Degradation Mechanisms Found

Table 4.2 outlines the number of indications found during the outage for each location.. The active damage mechanism is ODSCC.

Table 4.2
2P99 Inspection Results

<u>Location</u>	<u>SG "A"</u>	<u>SG "B"</u>
Hot Leg ET Region (circumferential)	9	0
Sludge Pile (axial and volumetric)	2	0
EC Support Plate (axial)	49	184
Free Span (axial)	5	0

4.3 NDE Techniques Utilized

Table 4.3 identifies the NDE technique used for each degradation mechanism:

Table 4.3
2P99 NDE Techniques

Degradation Mechanism	NDE Technique
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Hot Leg ET Region	0.115" pancake coil
Sludge Pile	0.600" bobbin with 0.115" pancake
EC Support Plate	0.600" bobbin with 0.115" pancake
Free Span	0.600" bobbin with 0.115" pancake

4.4 Number of Tubes Plugged or Repaired by Damage Mechanism

No sleeves were installed during 2P99. Mechanical-rolled plugs were used for all repairs. Table (4.4) list the number of tubes plugged for each damage mechanism:

Table 4.4
2P99 Plugs Installed

Damage Mechanism	SG "A"	SG "B"
Circumferential Cracking	9	0
Eggcrate Axial	46	149
Eggcrate Volumetric	0	1
Sludge Pile Axial	2	0
Free Span Axial	3	0
Total Repairs	60	150

4.5 Number and Percent Plugged Following 2P99

The number of tubes plugged and inservice sleeves following 2P99 are shown in Table 4.5:

**Table 4.5
Cumulative Plugs and Sleeves In Service**

	SG "A"	SG "B"
B&W Sleeves	285	48
CE TIG Sleeves	376	146
Plugs	1487	1460
Equivalent Plugs	1511.4	1466.0
Percent Plugged	17.97 %	17.43 %

4.6 Description of Tube Integrity Assessment

Condition monitoring was performed to evaluate both structural and leakage integrity and was submitted as 2CAN129911⁴. All condition monitoring performance criteria were met during the outage. This conclusion is based on in-situ testing of the largest flaws identified. A total of six flaws at the eggcrates were tested. Tube R72L72 in SG "B" was not tested to 3 Δ P due to leakage in excess of the equipment capability. Further analysis of the flaw was performed to determine the burst pressure. This data was submitted by 2CAN020005⁵ on February 11, 2000. The operational assessment evaluated all mechanisms deterministically and found that operation until 2R14, September 2000 was acceptable.

4.7 Description of Corrective Actions

The corrective actions identified in 2R13 were continued in 2P99. The corrective actions are discussed in Section 3.7.

4.8 Evaluation of Exceeding Condition Monitoring

There were no performance criteria exceeded during 2P99.

4.9 Item #2 of the Technical Specification (location and percent of wall-thickness penetration for each indication of an imperfection)

This topic is addressed for the 2P99 outage in Tables 3 and 4 for SG "A" and SG "B", respectively.

5.0 References

1. NEI 97-06, "Steam Generator Program Guidelines"
2. 2CAN029902, "Steam Generator Tube Surveillance - Category C-3 Results"
3. 2CAN069901, "Operational Assessment of Steam Generator Tubing for Cycle 14"
4. 2CAN129911, "2P99 Steam Generator Tubing Inspection Results"
5. 2CAN020005, "Operational Assessment of Steam Generator Tubing for the Remainder of Cycle 14"

TABLE 1
SG "A" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
1	1	131	SAI	01H - 0.03	EC Axial
2	4	108	SAI	01H - 0.35	EC Axial
3	6	122	SAI	01H - 0.92	EC Axial
4	6	122	SAI	01H + 0.22	EC Axial
5	7	17	SCI	TSH + 0.10	TTS Circ
6	8	156	SAI	02H - 0.49	EC Axial
7	9	113	SAI	02H + 0.65	EC Axial
8	10	110	SAI	01H - 0.37	EC Axial
9	11	113	SAI	01H + 0.27	EC Axial
10	11	129	SCI	TSH + 0.15	TTS Circ
11	12	34	SCI	TSH + 0.00	TTS Circ
12	12	40	SCI	TSH + 0.00	TTS Circ
13	13	15	SAI	06H - 6.40	FS Axial
14	15	137	WZI	WCH - 0.00	CE SLV
15	16	52	MCI	TSH + 0.09	TTS Circ
16	16	116	SAI	01H + 0.65	EC Axial
17	17	19	SAI	01H + 0.00	EC Axial
18	17	47	SCI	TSH + 0.00	TTS Circ
19	17	107	SCI	TSH + 0.00	TTS Circ
20	17	149	SAI	TSH + 0.17	SP Axial
21	18	110	SVI	TSH - 0.11	TTS Vol
22	19	149	MCI	TSH + 0.08	TTS Circ
23	22	130	MCI	TSH + 0.07	TTS Circ
24	24	8	PTP	N/A	PTP
25	24	108	SAI	02H + 0.58	EC Axial
26	28	46	MAI	07H + 5.28	FS Axial
27	28	46	MAI	07H + 6.62	FS Axial
28	28	46	MAI	07H + 10.59	FS Axial
29	28	46	MAI	07H + 1.15	FS Axial
30	28	124	MCI	TSH + 0.18	TTS Circ
31	29	69	SAI	01H + 0.24	EC Axial
32	34	26	SAI	01H + 0.63	EC Axial
33	34	102	SAI	TSH + 0.25	SP Axial
34	35	69	MAI	02H + 0.63	EC Axial
35	35	111	SAI	07H + 1.25	FS Axial
36	36	16	SAI	06H - 5.88	FS Axial

TABLE 1 (cont)
SG "A" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
37	36	34	SCI	TSH + 0.00	TTS Circ
38	37	53	SCI	TSH - 0.02	TTS Circ
39	37	121	SCI	TSH + 0.13	TTS Circ
40	37	125	SCI	TSH + 0.00	TTS Circ
41	39	59	SAI	01H - 0.09	EC Axial
42	39	123	SCI	TSH + 0.07	TTS Circ
43	40	26	SAI	TSH - 0.08	SP Axial
44	40	28	SAI	01H - 0.66	EC Axial
45	40	28	SAI	01H + 0.14	EC Axial
46	40	52	SCI	TSH + 0.00	TTS Circ
47	41	91	SAI	01H + 0.55	EC Axial
48	41	91	SAI	01H + 0.55	EC Axial
49	41	109	SCI	TSH + 6.12	B&W SLV
50	42	106	SAI	01H - 0.86	EC Axial
51	44	112	SAI	01H + 0.74	EC Axial
52	46	70	SCI	TSH + 0.04	TTS Circ
53	46	90	SAI	TSH + 0.15	SP Axial
54	47	35	SAI	01H + 0.66	EC Axial
55	47	117	SCI	TSH - 0.03	TTS Circ
56	47	117	SAI	04H - 0.73	EC Axial
57	48	32	SAI	01H + 0.61	EC Axial
58	48	130	SCI	TSH + 0.07	TTS Circ
59	49	59	MVI	TSH + 0.04	TTS Vol
60	49	111	SCI	TSH + 0.03	TTS Circ
61	50	66	MAI	01H - 0.30	EC Axial
62	50	114	SAI	01H + 0.47	EC Axial
63	50	146	SAI	01H + 0.70	EC Axial
64	52	30	SAI	01H + 0.86	EC Axial
65	52	60	SCI	TSH + 0.00	TTS Circ
66	52	130	SCI	TSH + 0.05	TTS Circ
67	55	57	SCI	TSH + 0.04	TTS Circ
68	55	123	SCI	TSH + 0.04	TTS Circ
69	56	122	SCI	TSH + 0.02	TTS Circ
70	57	115	SCI	TSH + 0.00	TTS Circ
71	58	32	SAI	01H - 0.57	EC Axial
72	58	60	SCI	TSH + 0.04	TTS Circ

TABLE 1 (cont)
SG "A" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
73	59	59	SCI	TSH + 0.00	TTS Circ
74	59	129	SCI	TSH + 0.19	TTS Circ
75	60	68	MVI	TSH + 5.90	B&W SLV
76	60	152	SAI	07H + 19.90	FS Axial
77	60	152	SAI	07H + 24.58	FS Axial
78	60	152	MAI	07H + 2.38 to + 8.11	FS Axial
79	60	152	SAI	07H + 14.39	FS Axial
80	60	152	SAI	07H + 13.74	FS Axial
81	62	136	SCI	TSH + 0.06	TTS Circ
82	63	95	SCI	TSH + 0.01	TTS Circ
83	63	117	SAI	01H + 0.81	EC Axial
84	65	95	SCI	TSH + 0.13	TTS Circ
85	66	142	SAI	07H + 21.65	FS Axial
86	66	142	SAI	07H + 19.89	FS Axial
87	66	142	SAI	07H + 12.14	FS Axial
88	66	142	SAI	07H + 16.62	FS Axial
89	66	142	SAI	07H + 8.97	FS Axial
90	67	83	SCI	TSH + 0.02	TTS Circ
91	68	100	SAI	01H + 0.74	EC Axial
92	71	73	MAI	TSH + 5.09	B&W SLV
93	71	85	SCI	TSH + 0.03	TTS Circ
94	71	97	SAI	07H - 1.85 to - 7.49	FS Axial
95	71	97	MAI	07H - 9.33	FS Axial
96	72	70	SCI	WCH - 0.22	CE SLV
97	74	20	SAI	03H + 0.64	EC Axial
98	80	116	WZI	WCH - 0.10	CE SLV
99	81	55	SCI	TSH + 0.01	TTS Circ
100	82	84	PTP	N/A	PTP
101	82	98	SAI	01H - 0.46	EC Axial
102	83	45	WZI	WCH + 0.05	CE SLV
103	96	82	SCI	TSH + 0.02	TTS Circ
104	96	114	SCI	TSH + 0.00	TTS Circ
105	97	115	SAI	01H + 0.83	EC Axial
106	98	114	SCI	TSH + 0.05	TTS Circ

TABLE 1 (cont)
SG "A" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
107	101	89	SCI	TSH + 0.04	TTS Circ
108	103	49	SVI	06H + 0.76	EC Vol
109	107	67	SCI	TSH + 0.04	TTS Circ
110	109	95	WZI	WCH + 0.15	CE SLV
111	109	109	SAI	01H - 0.48	EC Axial
112	109	109	SAI	01H + 0.92	EC Axial
113	110	72	SCI	TSH + 0.11	TTS Circ
114	110	76	SCI	TSH + 0.01	TTS Circ
115	111	69	SCI	TSH + 0.11	TTS Circ
116	115	89	PTP	N/A	PTP
117	123	53	SAI	02H + 0.68	EC Axial
118	129	59	SVI	02H + 0.75	EC Vol
119	129	77	MAI	11H - 2.83	FS Axial
120	129	77	MAI	11H - 2.31	FS Axial
121	129	77	MAI	11H -0.86	FS Axial
122	133	61	SAI	09H +11.67	FS Axial
123	135	81	SAI	02H +0.43	EC Axial

Legend:

B&W - Babcock & Wilcox
 CE - Combustion Eng.
 Circ - Circumferential Indication
 EC - Egg Crate Support
 FS - Free Span Indication
 MAI - Multiple Axial Indication
 MCI - Multiple Circ. Indication
 MVI - Multiple Volumetric Indication
 PTP - Preventative Tube Plug
 SAI - Single Axial Indication
 SCI - Single Circ. Indication
 SLV - Sleeve Indication
 SP - Sludge Pile Indication
 SVI - Single Volumetric Indication
 TTS - Top of Tube Sheet
 Vol - Volumetric Indication
 WCH - Weld Center Height
 WZI - Weld Zone Indication

TABLE 2
SG "B" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
1	1	39	SAI	02H - 0.22	EC Axial
2	3	135	SAI	02H + 0.78	EC Axial
3	4	26	MAI	01H + 0.79	EC Axial
4	4	36	SAI	03H + 0.29	EC Axial
5	4	148	SAI	01H - 0.15	EC Axial
6	5	151	SAI	01H + 0.77	EC Axial
7	8	38	SAI	01H + 0.59	EC Axial
8	9	25	SAI	06H + 0.73	EC Axial
9	10	110	MAI	01H + 0.81	EC Axial
10	11	29	SAI	02H + 0.86	EC Axial
11	11	31	SAI	05H - 0.38	EC Axial
12	11	151	SCI	TSH - 0.06	TTS Circ
13	12	50	SAI	01H - 0.33	EC Axial
14	13	127	SAI	01H - 0.43	EC Axial
15	13	135	SCI	TSH + 0.00	TTS Circ
16	14	58	SAI	01H + 0.56	EC Axial
17	15	125	SVI	07C + 0.23	EC Vol
18	16	150	SCI	TSH + 0.00	TTS Circ
19	18	36	SAI	01H + 0.62	EC Axial
20	18	44	SCI	TSH + 0.04	TTS Circ
21	18	106	SAI	01H - 0.28	EC Axial
22	18	106	SAI	01H + 0.81	EC Axial
23	18	114	SAI	01H + 0.53	EC Axial
24	18	120	SCI	TSH + 0.13	TTS Circ
25	19	131	SAI	01H - 0.24	EC Axial
26	19	145	SAI	05H - 0.03	EC Axial
27	20	118	SAI	01H + 0.58	EC Axial
28	22	126	SAI	01H + 0.70	EC Axial
29	23	43	SCI	TSH - 0.12	TTS Circ
30	24	120	SAI	01H + 0.69	EC Axial
31	26	26	SAI	02H + 0.34	EC Axial
32	27	57	SCI	TSH - 0.03	TTS Circ
33	27	123	SAI	01H + 0.71	EC Axial
34	28	54	SAI	02H - 0.44	EC Axial
35	29	43	SCI	TSH - 0.03	TTS Circ
36	30	38	SAI	02H + 0.72	EC Axial

TABLE 2 (cont)
SG "B" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
37	31	115	SAI	TSH + 1.23	SP Axial
38	32	34	SAI	03H - 0.20	EC Axial
39	32	44	SAI	01H + 0.85	EC Axial
40	33	23	SAI	03H + 0.59	EC Axial
41	33	31	SCI	TSH - 0.02	TTS Circ
42	33	37	SCI	TSH - 0.04	TTS Circ
43	33	39	SCI	TSH + 0.05	TTS Circ
44	33	53	SAI	01H + 0.61	EC Axial
45	33	63	SAI	03H + 0.67	EC Axial
46	33	73	SAI	02H - 0.09	EC Axial
47	34	122	SCI	TSH + 0.17	TTS Circ
48	34	124	SCI	TSH + 0.16	TTS Circ
49	36	52	SAI	01H + 0.83	EC Axial
50	38	52	SAI	TSH + 2.58	FS Axial
51	38	52	SAI	01H - 0.43	EC Axial
52	38	52	SAI	01H - 0.62	EC Axial
53	42	92	SAI	01H + 0.63	EC Axial
54	42	124	WZI	WCH + 0.10	CE SLV
55	42	126	SAI	01H + 0.48	EC Axial
56	44	124	SAI	01H + 0.61	EC Axial
57	45	75	SAI	01H + 0.68	EC Axial
58	46	76	SAI	01H + 0.79	EC Axial
59	47	103	SAI	TSH + 0.09	SP Axial
60	47	135	SAI	BW3 - 0.71	BW Axial
61	52	98	SAI	TSH + 0.22	EC Axial
62	52	128	SCI	TSH + 0.12	TTS Circ
63	53	99	SAI	TSH + 0.37	SP Axial
64	58	46	SCI	TSH + 0.05	TTS Circ
65	58	52	SCI	TSH - 0.10	TTS Circ
66	59	137	SAI	03H - 0.25	EC Axial
67	63	41	SAI	01H - 0.49	EC Axial
68	63	77	SAI	03H + 0.60	EC Axial
69	63	81	SAI	01H - 0.18	EC Axial
70	65	53	SCI	TSH + 0.00	TTS Circ
71	68	70	SAI	03H + 0.38	EC Axial
72	70	36	SCI	TSH + 0.00	TTS Circ

TABLE 2 (cont)
SG "B" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
73	71	107	SAI	01H + 0.41	EC Axial
74	73	55	MCI	TSH + 0.07	TTS Circ
75	73	135	SCI	TSH + 0.09	TTS Circ
76	75	73	SAI	02H + 0.79	EC Axial
77	76	66	SAI	01H + 0.24	EC Axial
78	77	69	SAI	01H - 0.19	EC Axial
79	79	83	SAI	02H + 0.32	EC Axial
80	79	101	SAI	01H - 0.54	EC Axial
81	79	129	SCI	TSH + 0.06	TTS Circ
82	80	56	SAI	01H + 0.44	EC Axial
83	80	86	SCI	TSH + 0.04	TTS Circ
84	80	88	SAI	02H + 0.60	EC Axial
85	81	119	MAI	01H + 0.69	EC Axial
86	82	54	SAI	01H - 0.37	EC Axial
87	83	41	WZI	WCH + 0.15	CE SLV
88	83	55	SAI	08H + 10.14	FS Axial
89	83	63	SAI	02H + 0.13	EC Axial
90	85	67	SAI	01H - 0.02	EC Axial
91	85	67	SAI	01H + 0.70	EC Axial
92	85	79	SAI	TSH + 0.16	SP Axial
93	85	79	SCI	TSH + 0.06	TTS Circ
94	86	70	SAI	01H + 0.63	EC Axial
95	86	116	SAI	02H - 0.56	EC Axial
96	87	37	PTP	N/A	PTP
97	87	37	PTP	N/A	PTP
98	88	50	SCI	TSH + 0.18	TTS Circ
99	88	52	SCI	TSH + 0.12	TTS Circ
100	88	54	SCI	TSH - 0.07	TTS Circ
101	89	49	WZI	WCH + 0.10	CE SLV
102	90	44	SCI	TSH + 0.00	TTS Circ
103	91	79	SCI	TSH - 0.03	TTS Circ
104	93	109	SAI	01H - 0.50	EC Axial
105	93	117	SCI	TSH + 0.20	TTS Circ
106	96	70	SAI	02H - 0.47	EC Axial
107	96	90	SCI	TSH - 0.06	TTS Circ
108	96	108	SAI	02H + 0.53	EC Axial

TABLE 2 (cont)
SG "B" REPAIR INDICATION LIST FOR 2R13

No.	Row	Line	Indication	Location	Reason for Plug
109	97	25	LPI	10H + 0.56	LPI
110	101	47	SCI	TSH + 0.16	TTS Circ
111	101	73	SCI	TSH + 0.20	TTS Circ
112	102	106	MCI	TSH + 0.09	TTS Circ
113	106	92	SAI	02H - 0.10	EC Axial
114	106	110	SAI	02H + 0.31	EC Axial
115	106	110	SAI	02H - 0.19	EC Axial
116	111	45	SAI	02H + 0.03	EC Axial
117	131	85	SAI	01H - 0.10	EC Axial
118	133	91	SAI	03H + 0.60	EC Axial
119	136	70	SAI	02H + 0.42	EC Axial

Legend:

BW – Batwing Support
 CE - Combustion Eng.
 Circ - Circumferential Indication
 EC - Egg Crate Support
 FS – Free Span Indication
 LPI - Loose Part Indication
 MAI - Multiple Axial Indication
 MCI - Multiple Circ. Indication
 PTP - Preventative Tube Plug
 SAI - Single Axial Indication
 SCI - Single Circ. Indication
 SLV - Sleeve Indication
 SP - Sludge Pile Indication
 SVI - Single Volumetric Indication
 TTS - Top of Tube Sheet
 Vol - Volumetric Indication
 WCH – Weld Center Height
 WZI - Weld Zone Indication

TABLE 3
SG "A" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
1	3	125	SAI	01H + 0.63	EC Axial
2	3	127	SAI	02H - 0.56	EC Axial
3	4	58	SAI	01H - 0.96	EC Axial
4	8	152	SAI	01H + 0.76	EC Axial
5	9	125	SAI	04H + 0.35	EC Axial
6	10	2	SAI	03H + 0.74	EC Axial
7	10	158	MAI	02H - 0.58	EC Axial
8	10	158	MAI	02H - 0.50	EC Axial
9	13	137	SCI	TSH + 0.13	TTS Circ
10	15	59	SAI	01H + 0.42	EC Axial
11	19	125	SAI	03H + 0.65	EC Axial
12	19	125	SAI	03H - 0.07	EC Axial
13	20	46	SAI	03H - 0.46	EC Axial
14	20	128	SAI	04H + 0.02	EC Axial
15	21	41	SAI	03H - 0.50	EC Axial
16	30	44	SAI	04H + 9.51	FS Axial
17	30	44	SAI	04H + 8.71	FS Axial
18	30	110	SAI	02H - 0.72	EC Axial
19	30	132	SAI	TSH + 0.23	SP Axial
20	30	138	SAI	04H - 0.53	EC Axial
21	31	15	SAI	05H + 0.83	EC Axial
22	36	136	SAI	01H + 0.67	EC Axial
23	40	32	SAI	01H - 0.04	EC Axial
24	40	44	SAI	01H + 0.24	EC Axial
25	40	72	SAI	01H - 0.32	EC Axial
26	42	10	SAI	02H + 0.89	EC Axial
27	42	138	SAI	01H + 0.48	EC Axial
28	43	81	SAI	01H - 0.23	EC Axial
29	44	56	SCI	TSH + 0.06	TTS Circ
30	46	130	SAI	02H - 0.55	EC Axial
31	47	73	SAI	01H - 0.13	EC Axial
32	48	58	SAI	01H + 0.08	EC Axial
33	49	23	SAI	02H + 0.16	EC Axial
34	49	25	SAI	03H + 0.14	EC Axial
35	49	47	SAI	TSH + 0.12	SP Axial
36	50	58	SAI	01H + 0.05	EC Axial

TABLE 3 (cont)
SG "A" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
37	51	29	SAI	01H + 0.01	EC Axial
38	51	31	SAI	03H + 0.47	EC Axial
39	51	81	SAI	01H - 0.74	EC Axial
40	52	78	SAI	01H + 0.37	EC Axial
41	54	60	MCI	TSH - 0.01	TTS Circ
42	54	84	MAI	01H + 0.32	EC Axial
43	54	84	MAI	01H + 0.59	EC Axial
44	54	92	SAI	01H + 0.20	EC Axial
45	56	60	MCI	TSH + 0.05	TTS Circ
46	57	59	SCI	TSH + 0.00	TTS Circ
47	59	45	SCI	TSH + 0.03	TTS Circ
48	59	47	SAI	01H + 0.14	EC Axial
49	60	50	SCI	TSH + 0.00	TTS Circ
50	60	106	SAI	02H - 0.32	EC Axial
51	62	42	MAI	01H + 0.03	EC Axial
52	63	101	SAI	06H + 25.21	FS Axial
53	66	90	SAI	05H + 20.32	FS Axial
54	66	90	SAI	05H + 26.57	FS Axial
55	68	60	SCI	TSH + 0.02	TTS Circ
56	70	118	SAI	01H + 0.65	EC Axial
57	71	71	SAI	02H + 0.27	EC Axial
58	72	58	SCI	TSH - 0.16	TTS Circ
59	73	105	SAI	03H + 0.30	EC Axial
60	74	122	SAI	01H + 0.63	EC Axial
61	77	83	SAI	01H - 0.38	EC Axial
62	80	120	SAI	01H - 0.15	EC Axial
63	82	48	SAI	02H - 0.56	EC Axial
64	134	76	SAI	01H + 0.42	EC Axial
65	136	82	SAI	03H - 0.02	EC Axial

TABLE 3 (cont)
SG "A" REPAIR INDICATION LIST FOR 2P99

Legend:

Circ - Circumferential Indication
EC - Egg Crate Support
FS - Free Span Indication
MAI - Multiple Axial Indication
MCI - Multiple Circ. Indication
SAI - Single Axial Indication
SCI - Single Circ. Indication
SP - Sludge Pile Indication
TTS - Top of Tube Sheet

TABLE 4
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
1	1	51	SAI	03H + 0.26	EC Axial
2	1	51	SAI	04H + 0.04	EC Axial
3	1	137	SAI	01H - 0.35	EC Axial
4	2	34	SAI	02H - 0.45	EC Axial
5	3	57	SAI	01H - 0.74	EC Axial
6	3	141	SAI	01H + 0.33	EC Axial
7	4	20	SAI	01H - 0.52	EC Axial
8	4	28	SAI	01H - 0.74	EC Axial
9	4	150	SAI	01H - 0.44	EC Axial
10	4	150	SAI	01H + 0.82	EC Axial
11	4	156	SAI	02H - 0.19	EC Axial
12	4	156	SAI	02H + 0.76	EC Axial
13	5	3	SAI	01H + 0.01	EC Axial
14	5	21	SAI	03H + 0.02	EC Axial
15	5	153	SAI	07H + 0.42	EC Axial
16	6	116	SAI	01H - 0.12	EC Axial
17	6	136	SAI	01H - 0.39	EC Axial
18	6	138	MAI	01H + 0.73	EC Axial
19	6	138	MAI	01H + 0.65	EC Axial
20	6	140	SAI	02H - 0.49	EC Axial
21	7	61	SAI	02H + 0.56	EC Axial
22	7	113	SAI	01H + 0.62	EC Axial
23	7	119	SAI	01H - 0.06	EC Axial
24	7	119	SAI	01H + 0.20	EC Axial
25	8	128	SAI	01H + 0.80	EC Axial
26	8	134	SAI	01H + 0.53	EC Axial
27	8	148	SAI	01H + 0.72	EC Axial
28	9	115	SAI	01H + 0.42	EC Axial
29	9	115	SAI	01H - 0.47	EC Axial
30	9	125	SAI	01H + 0.43	EC Axial
31	9	127	SAI	01H - 0.32	EC Axial
32	9	127	SAI	01H + 0.95	EC Axial
33	10	16	SAI	02H + 0.04	EC Axial
34	10	148	SAI	01H + 0.80	EC Axial
35	10	150	MAI	01H + 0.71	EC Axial
36	10	150	MAI	01H + 0.35	EC Axial

TABLE 4 (cont)
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
37	10	150	SAI	03H + 0.37	EC Axial
38	11	13	SAI	03H + 0.01	EC Axial
39	11	135	SAI	03H - 0.24	EC Axial
40	11	143	SAI	01H - 0.08	EC Axial
41	11	143	SAI	01H + 0.69	EC Axial
42	11	155	SAI	02H + 0.75	EC Axial
43	12	30	SAI	01H + 0.53	EC Axial
44	12	56	SAI	02H + 0.80	EC Axial
45	12	62	SAI	01H + 0.48	EC Axial
46	12	106	SAI	01H - 0.40	EC Axial
47	12	106	SAI	01H + 0.47	EC Axial
48	12	148	SAI	02H + 0.16	EC Axial
49	13	31	SAI	02H - 0.48	EC Axial
50	13	55	SAI	01H - 0.12	EC Axial
51	13	57	SAI	01H + 0.78	EC Axial
52	14	112	SAI	04H + 0.59	EC Axial
53	16	116	SAI	05H + 0.61	EC Axial
54	16	118	SAI	01H + 0.78	EC Axial
55	16	140	SAI	02H + 0.68	EC Axial
56	16	140	SAI	03H + 0.46	EC Axial
57	16	140	SAI	03H + 0.31	EC Axial
58	17	49	SAI	06H + 0.15	EC Axial
59	18	126	SAI	01H + 0.73	EC Axial
60	20	52	SAI	01H + 0.45	EC Axial
61	20	132	SAI	02H - 0.07	EC Axial
62	21	109	SAI	01H + 0.67	EC Axial
63	23	55	SAI	02H - 0.35	EC Axial
64	23	143	SAI	01H - 0.32	EC Axial
65	23	143	SAI	01H + 0.81	EC Axial
66	23	143	SAI	02H - 0.04	EC Axial
67	24	24	SAI	01H + 0.26	EC Axial
68	24	136	SAI	03H + 0.28	EC Axial
69	25	3	SVI	02H + 0.77	EC Vol
70	26	40	SAI	02H + 0.63	EC Axial
71	26	144	SAI	01H - 0.39	EC Axial
72	27	127	SAI	02H + 0.67	EC Axial

TABLE 4 (cont)
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
73	27	127	SAI	04H + 0.65	EC Axial
74	28	36	SAI	02H + 0.43	EC Axial
75	28	36	SAI	02H - 0.19	EC Axial
76	28	44	SAI	01H - 0.58	EC Axial
77	29	123	SAI	04H + 0.49	EC Axial
78	31	49	SAI	01H + 0.20	EC Axial
79	31	125	SAI	01H - 0.27	EC Axial
80	32	24	SAI	01H + 0.41	EC Axial
81	32	46	SAI	02H + 0.38	EC Axial
82	32	100	SAI	01H + 0.28	EC Axial
83	32	108	SAI	01H + 0.17	EC Axial
84	32	108	SAI	01H - 0.58	EC Axial
85	32	108	SAI	01H - 0.10	EC Axial
86	32	148	SAI	03H + 0.52	EC Axial
87	33	71	SAI	01H - 0.12	EC Axial
88	33	71	SAI	01H + 0.23	EC Axial
89	33	109	SAI	01H - 0.45	EC Axial
90	33	117	SAI	05H + 0.54	EC Axial
91	34	52	SAI	06H + 0.51	EC Axial
92	34	130	SAI	02H + 0.52	EC Axial
93	35	33	SAI	03H + 0.36	EC Axial
94	36	36	SAI	02H - 0.15	EC Axial
95	36	116	SAI	01H + 0.25	EC Axial
96	36	116	SAI	01H + 0.87	EC Axial
97	36	116	SAI	01H + 0.65	EC Axial
98	37	95	SAI	01H - 0.48	EC Axial
99	38	110	MAI	01H + 0.51	EC Axial
100	38	110	MAI	01H + 0.72	EC Axial
101	38	114	SAI	02H + 0.23	EC Axial
102	38	144	SAI	03H - 0.59	EC Axial
103	39	111	SAI	01H + 0.79	EC Axial
104	40	56	SAI	03H + 0.49	EC Axial
105	40	116	SAI	01H + 0.70	EC Axial
106	40	116	SAI	01H + 0.54	EC Axial
107	42	38	SAI	01H + 0.65	EC Axial
108	42	38	SAI	01H + 0.09	EC Axial

TABLE 4 (cont)
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
109	42	78	SAI	01H + 0.80	EC Axial
110	42	142	SAI	01H + 0.54	EC Axial
111	44	72	SAI	01H + 0.05	EC Axial
112	45	69	SAI	02H - 0.30	EC Axial
113	45	89	SAI	01H + 0.68	EC Axial
114	46	126	SAI	01H + 0.57	EC Axial
115	47	91	SAI	01H + 0.33	EC Axial
116	47	93	SAI	01H - 0.04	EC Axial
117	47	93	SAI	01H - 0.40	EC Axial
118	47	145	SAI	02H + 0.55	EC Axial
119	48	52	MAI	01H + 0.45	EC Axial
120	48	52	MAI	01H + 0.30	EC Axial
121	48	96	SAI	01H - 0.35	EC Axial
122	49	19	SAI	04H + 0.66	EC Axial
123	49	77	SAI	01H + 0.73	EC Axial
124	52	36	SAI	01H + 0.59	EC Axial
125	52	82	SAI	01H + 0.22	EC Axial
126	52	82	SAI	01H - 0.10	EC Axial
127	53	83	SAI	01H + 0.01	EC Axial
128	53	109	SAI	01H - 0.62	EC Axial
129	55	95	SAI	01H + 0.11	EC Axial
130	57	83	SAI	01H + 0.40	EC Axial
131	58	106	SAI	01H - 0.76	EC Axial
132	58	106	SAI	01H + 0.48	EC Axial
133	60	44	SAI	02H + 0.02	EC Axial
134	60	108	SAI	01H + 0.71	EC Axial
135	60	108	SAI	01H + 0.27	EC Axial
136	61	115	SAI	02H + 0.59	EC Axial
137	62	36	SAI	03H + 0.74	EC Axial
138	63	115	SAI	01H + 0.11	EC Axial
139	63	123	SAI	02H + 0.39	EC Axial
140	65	97	SAI	02H - 0.51	EC Axial
141	65	119	SAI	01H - 0.62	EC Axial
142	65	125	SAI	02H - 0.65	EC Axial
143	66	28	SAI	02H - 0.65	EC Axial
144	67	57	SAI	01H + 0.73	EC Axial

TABLE 4 (cont)
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
145	67	111	SAI	01H - 0.39	EC Axial
146	67	119	SAI	01H - 0.11	EC Axial
147	68	44	SAI	03H + 0.03	EC Axial
148	68	112	SAI	02H + 0.01	EC Axial
149	72	72	SAI	02H - 0.34	EC Axial
150	74	66	SAI	01H + 0.52	EC Axial
151	75	45	SAI	02H - 0.40	EC Axial
152	75	85	SAI	03H + 0.68	EC Axial
153	75	89	SAI	02H + 0.83	EC Axial
154	75	91	SAI	02H + 0.12	EC Axial
155	77	83	SAI	02H - 0.10	EC Axial
156	77	113	SAI	01H + 0.45	EC Axial
157	77	125	SAI	02H + 0.34	EC Axial
158	83	109	SAI	01H - 0.32	EC Axial
159	83	109	SAI	01H + 0.77	EC Axial
160	84	76	SAI	01H + 0.43	EC Axial
161	84	112	SAI	02H - 0.62	EC Axial
162	84	112	SAI	02H + 0.51	EC Axial
163	84	116	SAI	02H + 0.58	EC Axial
164	86	104	SAI	01H - 0.48	EC Axial
165	86	118	SAI	01H + 0.39	EC Axial
166	89	51	SAI	01H + 0.10	EC Axial
167	89	73	SAI	02H + 0.17	EC Axial
168	92	100	SAI	02H + 0.58	EC Axial
169	92	102	SAI	02H + 0.64	EC Axial
170	95	45	SAI	02H + 0.38	EC Axial
171	102	98	SAI	01H + 0.46	EC Axial
172	102	98	SAI	02H + 0.18	EC Axial
173	102	110	SAI	02H - 0.20	EC Axial
174	104	100	SAI	02H + 0.37	EC Axial
175	104	116	SAI	01H - 0.50	EC Axial
176	106	90	SAI	02H + 0.61	EC Axial
177	106	90	SAI	02H - 0.44	EC Axial
178	115	65	SAI	02H + 0.39	EC Axial
179	117	89	SAI	01H - 0.44	EC Axial

TABLE 4 (cont)
SG "B" REPAIR INDICATION LIST FOR 2P99

No.	Row	Line	Indication	Location	Reason for Plug
180	119	65	SAI	04H + 0.51	EC Axial
181	120	114	SAI	03H + 0.82	EC Axial
182	121	113	SAI	01H - 0.62	EC Axial
183	123	99	SAI	01H - 0.35	EC Axial
184	136	88	SAI	01H + 0.40	EC Axial

Legend:

EC - Egg Crate Support
MAI - Multiple Axial Indication
SAI - Single Axial Indication
SVI - Single Volumetric Indication
Vol - Volumetric Indication

TABLE 5
SG "A" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
1	24	48	8	BW3 - 0.47
2	31	71	31	BW1 - 1.04
3	31	71	21	BW1 + 0.99
4	31	71	27	BW3 - 0.60
5	32	96	25	BW3 - 0.33
6	33	95	26	BW3 + 0.82
7	34	50	21	BW3 - 0.65
8	35	115	11	BW3 + 0.69
9	38	84	5	BW1 - 1.23
10	42	160	12	BW1 + 0.85
11	52	90	14	BW5 - 0.07
12	56	16	14	BW1 - 0.53
13	56	120	12	BW3 + 0.86
14	57	13	14	BW5 - 1.02
15	61	69	11	BW1 + 1.04
16	63	33	16	BW1 + 0.67
17	64	34	22	BW5 + 0.16
18	64	40	21	BW1 +1.06
19	64	40	27	BW1 - 0.98
20	66	72	13	BW1 - 0.97
21	68	26	19	BW1 + 0.70
22	77	31	13	BW1 - 0.46
23	89	147	16	BW3 - 0.70
24	91	73	17	BW1 - 0.61
25	91	73	21	BW1 +0.89
26	93	27	12	BW5 + 0.00
27	96	58	19	BW1 - 0.86
28	98	78	11	BW1 - 1.28
29	99	77	23	BW3 - 0.72
30	99	81	12	BW1 + 0.94
31	100	62	14	BW2 + 0.90
32	100	74	22	BW1 + 1.00
33	101	27	12	BW3 + 1.11
34	106	32	12	BW5 - 0.99
35	111	49	14	BW2 - 1.15
36	112	38	14	BW1 - 1.05

TABLE 5 (cont)
SG "A" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
37	112	74	17	BW1 - 0.88
38	116	80	16	BW2 - 0.81
39	118	74	28	BW2 - 0.68
40	121	71	18	BW1 + 1.06
41	122	46	12	BW1 + 1.04
42	122	72	26	BW1 - 1.00
43	126	92	14	BW3 + 0.83
44	132	78	10	BW2 + 0.61
45	133	109	15	BW5 + 0.99
46	134	68	14	BW2 + 0.81
47	135	65	11	BW1 + 1.09
48	136	90	16	BW2 + 0.71
49	137	71	21	BW5 - 1.10
50	138	72	12	BW1 + 1.09
51	138	82	13	BW1 + 1.20

TABLE 6
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
1	20	14	11	BW3 - 1.11
2	24	8	12	BW1 + 0.53
3	24	8	18	BW3 + 0.94
4	24	20	20	BW3 + 0.29
5	24	26	17	BW1 + 0.51
6	24	26	9	BW3 + 0.25
7	24	60	16	BW1 + 1.53
8	27	67	20	BW5 + 0.96
9	29	101	16	BW5 + 1.04
10	29	101	27	BW5 - 0.99
11	30	68	27	BW1 - 1.04
12	30	68	15	BW1 + 1.04
13	30	100	9	BW1 + 0.90
14	31	23	21	BW3 + 0.84
15	31	155	20	BW3 + 0.80
16	34	12	12	BW3 + 0.00
17	34	48	7	BW3 - 0.44
18	34	52	11	BW1 - 0.24
19	34	52	11	BW1 + 0.60
20	34	96	22	BW5 - 0.96
21	36	66	21	BW3 - 0.60
22	37	81	21	BW1 + 0.87
23	38	26	13	BW3 + 1.00
24	38	80	20	BW1 + 0.94
25	39	85	15	BW1 + 0.93
26	39	85	16	BW5 - 0.87
27	40	86	24	BW5 - 0.95
28	40	86	8	BW5 + 1.05
29	40	86	32	BW1 + 0.97
30	42	76	16	BW3 - 0.17
31	42	84	33	BW5 - 0.89
32	42	84	33	BW5 + 1.09
33	42	144	9	BW3 - 0.15
34	43	27	21	BW3 + 0.20
35	43	27	22	BW3 + 0.61
36	43	61	10	BW5 + 1.06

TABLE 6 (cont)
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
37	43	81	16	BW5 + 0.60
38	43	83	16	BW5 - 1.00
39	44	38	11	BW3 + 0.75
40	45	67	16	BW3 - 0.56
41	45	87	22	BW3 + 0.84
42	46	96	25	BW3 + 0.75
43	46	136	11	BW3 - 0.76
44	47	55	19	BW1 + 1.13
45	51	39	16	BW3 + 0.88
46	59	31	29	BW3 + 0.50
47	60	66	18	BW1 + 0.99
48	60	134	19	BW5 + 1.02
49	61	85	17	BW5 - 0.98
50	64	44	12	BW5 + 0.88
51	64	62	16	BW1 - 0.16
52	64	94	19	BW3 + 0.89
53	66	92	26	BW3 + 0.70
54	66	156	15	BW1 + 0.78
55	67	31	8	BW1 + 0.05
56	68	94	15	BW1 - 0.07
57	68	94	26	BW3 - 0.63
58	70	14	14	BW1 - 0.94
59	71	13	17	BW1 - 0.94
60	71	47	17	BW3 - 0.05
61	71	155	18	BW5 - 1.00
62	73	81	15	BW3 - 0.03
63	74	14	18	BW5 + 0.86
64	74	18	15	BW1 + 1.05
65	74	56	20	BW3 + 0.81
66	74	60	14	BW3 - 0.55
67	74	154	17	BW3 + 0.70
68	75	15	21	BW1 - 0.97
69	75	41	14	BW3 + 0.83
70	75	45	8	BW3 - 0.30
71	75	45	9	BW3 + 0.30
72	76	18	16	BW1 + 1.02

TABLE 6 (cont)
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
73	76	34	13	BW3 + 0.13
74	76	48	10	BW3 + 0.75
75	76	60	16	BW1 + 1.00
76	76	60	11	BW3 - 0.79
77	76	146	12	BW5 + 1.02
78	77	151	20	BW5 + 0.92
79	78	146	12	BW5 - 1.02
80	79	45	10	BW3 + 0.18
81	79	55	13	BW3 - 0.23
82	82	84	21	BW1 + 0.99
83	83	65	13	BW1 + 1.23
84	84	20	9	BW5 + 1.25
85	85	19	17	BW1 + 1.61
86	85	19	24	BW5 - 1.52
87	85	149	23	BW5 + 1.62
88	87	21	17	BW4 - 0.84
89	88	20	10	BW1 + 1.04
90	88	20	18	BW4 - 0.97
91	89	23	16	BW4 - 0.90
92	89	23	14	BW5 - 1.87
93	89	43	14	BW5 + 0.92
94	89	141	13	BW1 + 0.86
95	90	24	12	BW4 - 0.90
96	90	26	12	BW4 + 0.98
97	91	23	12	BW5 - 0.70
98	91	23	18	BW4 - 0.88
99	92	146	14	BW3 - 0.70
100	93	23	20	BW4 - 1.05
101	93	23	18	BW4 + 0.90
102	93	87	30	BW1 + 1.13
103	93	101	23	BW3 + 0.94
104	93	135	13	BW2 + 0.89
105	93	141	15	BW1 + 0.97
106	93	143	20	BW2 - 0.91
107	94	38	23	BW3 - 0.84
108	95	25	18	BW5 - 0.86

TABLE 6 (cont)
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
109	95	27	12	BW2 - 0.72
110	96	24	12	BW3 - 0.44
111	96	24	24	BW4 + 0.91
112	96	24	23	BW5 - 1.06
113	96	26	17	BW1 + 1.07
114	96	68	21	BW3 - 0.80
115	97	27	21	BW5 - 1.01
116	97	29	11	BW4 + 0.86
117	97	29	13	BW5 - 0.98
118	97	35	11	BW5 + 0.95
119	98	26	23	BW1 - 0.77
120	98	28	11	BW4 + 0.91
121	98	30	25	BW4 - 0.76
122	98	32	10	BW4 - 0.71
123	98	120	17	BW2 - 0.76
124	98	128	15	BW1 + 1.00
125	99	27	22	BW4 - 0.70
126	99	27	22	BW5 - 0.88
127	99	29	14	BW5 - 0.84
128	99	115	19	BW1 + 1.05
129	100	28	10	BW4 + 0.87
130	100	30	20	BW2 + 0.86
131	100	68	10	BW1 + 0.05
132	100	112	21	BW1 + 1.03
133	101	27	25	BW5 - 1.04
134	101	39	22	BW1 + 1.00
135	102	76	13	BW5 + 0.95
136	102	140	23	BW3 - 0.87
137	103	75	14	BW1 - 0.76
138	104	30	13	BW3 + 0.70
139	104	138	17	BW3 + 0.74
140	104	138	19	BW3 - 0.86
141	105	31	30	BW2 - 0.75
142	106	76	16	BW1 - 0.90
143	106	76	21	BW1 + 1.03
144	106	124	9	BW1 - 0.79

TABLE 6 (cont)
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
145	107	37	16	BW5 - 1.02
146	110	34	13	BW3 + 0.30
147	112	36	20	BW3 - 0.81
148	112	36	19	BW3 + 0.66
149	112	84	20	BW1 + 1.08
150	114	38	16	BW5 - 1.00
151	115	75	27	BW2 - 0.81
152	115	81	20	BW1 - 1.00
153	115	89	11	BW1 + 0.46
154	115	109	12	BW5 - 0.83
155	116	124	12	BW5 - 1.01
156	117	83	13	BW1 + 0.90
157	118	84	12	BW1 + 0.90
158	123	87	19	BW1 + 1.02
159	123	99	15	BW4 + 0.88
160	123	111	9	BW5 + 1.06
161	124	92	9	BW5 - 1.00
162	125	95	16	BW3 - 0.65
163	126	48	12	BW1 + 1.13
164	126	80	6	BW1 - 0.89
165	129	115	12	BW1 - 0.94
166	131	111	16	BW5 + 0.97
167	132	94	10	BW5 + 1.04
168	133	85	11	BW5 - 0.98
169	134	84	17	BW1 - 0.98
170	134	88	12	BW2 - 0.50
171	134	94	12	BW5 + 1.12
172	134	106	20	BW5 - 1.02
173	135	69	13	BW1 - 0.99
174	135	83	11	BW5 + 0.91
175	135	85	9	BW5 - 0.94
176	135	97	9	BW1 + 1.16
177	135	103	20	BW5 + 0.95
178	136	78	14	BW1 + 1.10
179	136	90	11	BW5 + 1.05
180	136	90	9	BW5 - 0.95

TABLE 6 (cont)
SG "B" INSERVICE LIST FOR 2R13 (WEAR)

No.	Row	Line	%TW	Location
181	136	100	16	BW1 + 0.98
182	136	102	14	BW1 - 1.03
183	137	67	19	BW5 + 0.86
184	137	73	18	BW5 + 0.90
185	137	83	11	BW5 + 0.91
186	137	87	9	BW1 - 0.96
187	137	97	10	BW5 - 1.07
188	137	99	12	BW5 + 0.95
189	138	72	29	BW1 - 1.06
190	138	84	23	BW1 - 0.97
191	138	88	12	BW5 + 0.97
192	139	73	24	BW5 + 0.94
193	139	83	10	BW1 + 1.18
194	139	87	9	BW1 + 0.91
195	139	91	17	BW1 + 1.01
196	139	93	9	BW1 + 1.06
197	139	95	17	BW5 + 1.09
198	140	80	19	BW5 - 1.10
199	140	86	12	BW1 - 0.93