Northern States Power Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East
Welch, Minnesota 55089

June 9, 2000

Technical Specification 4.12.E

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

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

2000 Unit 2 Steam Generator Inspection Results

In accordance with Technical Specification 4.12.E.1, the following information on steam generator tube inspection and repair is provided to the NRC Staff for information:

Following the recent inservice inspection of the Unit 2 steam generators, a total of twenty-eight (28) tubes were plugged for the first time. The percentage of tubes plugged is 6.2% in 21 steam generator and 6.4% in 22 steam generator. The inspection results are summarized in Attachment 1.

In accordance with Technical Specification 4.12.E.2, this information will be expanded upon in the Inservice Inspection Report for Unit 2 which will be submitted within 90 days of the end of the current refueling outage.

The results of the inspection of 21 Steam Generator and 22 Steam Generator were classified as Category C-3 in accordance with Technical Specification 4.12 because more than 1% of the inspected tubes in each Steam Generator were defective. The NRC Staff was informed of the Category C-3 classification by e-mail on May 8, 2000. On May 11 we conducted a telephone conference with the NRC Staff providing additional details. In accordance with Technical Specification 4.12.E.3, a 30 day special report on the Category C-3 steam generator inspection is provided as Attachment 2 to this letter.

As a result of the eddy current inspections, 5.8% (185 of 3195) of the inspected tubes in 21 Steam Generator contained new defects or poor u-bend data quality requiring

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repair. Eighteen (18) of these tubes were plugged and the remaining one hundred and sixty seven (167) tubes were left in service using the F-Star (F*) alternate repair criterion. Two (2) tubes were restored to service following successful removal of foreign material.

As a result of the eddy current inspection, 2.5% (79 of 3181) of the inspected tubes in 22 Steam Generator contained new defects or poor u-bend data quality requiring repair. Ten (10) of these tubes were plugged and sixty-nine (69) tubes were left in service using the (F*) alternate repair criterion.

Enhanced eddy current techniques and u-bend heat treatment of rows 1 and 2 u-bends were done in both steam generators in response to the Indian Point 2 u-bend leakage event.

In accordance with Technical Specification 4.12.E.4, the identification of F* tubes by Row and Column and the location and extent of degradation are included in Attachment 3 to this letter.

The voltage based repair criterion is not in use on Unit 2.

There are no tubes in service in Unit 2 which meet the Elevated F* criterion.

Attachment 4 lists the tubes pressure tested in situ to support the condition monitoring assessment.

Steam generator tubing examination and repairs were conducted from May 3, 2000 through May 25, 2000.

In this letter we have made no new Nuclear Regulatory Commission commitments. Please contact Jeff Kivi (651-388-1121) if you have any questions related to this letter.

Joel P. Sorensen

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2000 Unit 2 Steam Generator 15&30 day report.DOC

Attachments:

1. Steam Generator Plugged Tube and F* Tube Summary
2. Prairie Island Unit 2 Steam Generator Category C-3 Tube Inspection Special Report
3. F* Tube Report
4. Prairie Island Unit 2 In Situ Test List - May 2000 Refueling Outage

ATTACHMENT 1

Steam Generator Plugged Tube and F* Tube Summary

21 Steam Generator Plugged Tube and F* Tube Summary

Summary

New Indications Plugged this Outage:	18
Tubes Restored to Service this Outage:	2
Total Plugged Tubes:	211
Total F* Tubes:	862
21 Steam Generator % Plugged:	6.23%

Inspection Scope

All open tubes were examined full length with the bobbin coil, except for Row 1 and 2 U-bends prior to u-bend heat treatment.

All Row 1 and 2 u-bends were examined with the High Frequency +Point™ Coil (HFPP9) and Standard Mid Range Frequency +Point™ Coil (PP11) prior to u-bend heat treatment.

All Row 1 and 2 u-bends were examined with the magnetically biased High Frequency +Point Coil™ (HFPP9), the magnetically biased Standard Mid Range Frequency +Point™ Coil (PP11) and the bobbin coil after u-bend heat treatment.

In order to best identify those tubes which have minor degradation in the tubesheet region and in accordance with the requirements of Generic Letter 95-03, all hot leg tubes were examined with rotating probe technology (including the +Point™ coil) from tube end hot to 3 inches above the top of the tubesheet and twenty percent of the cold leg tubes were examined with rotating probe technology (including the +Point™ coil) from tube end cold to 1 inch above the top of the tubesheet with no need for expansion.

All non-quantifiable bobbin coil indications, all distorted tube support plate indications and all dents at structures (±0.5") greater than 5 volts were examined with rotating probe technology (including the +Point™ coil)

New Indications

One hundred and eighty five (185) new tubes were identified with the following types of degradation:

1. Wastage

   Three (3) tubes were plugged for thinning at the cold leg tube support plate due to single volumetric indications for which the bobbin sizing technique is unreliable due to poor signal to noise ratio.

2. Secondary Side IGA/SCC in Hot Leg Tubesheet Region

   One (1) tube was plugged due to single or multiple indications in the tubesheet crevice region indicative of secondary side IGA/SCC occurring in the tubesheet region. This one (1) tube was tested in situ with zero leakage and plugged.

3. Secondary Side IGA/SCC at Tube Support Plates

   There was no confirmation of secondary side IGA/SCC at the tube support plates.

4. Primary Water Stress Corrosion Cracking (PWSCC) at the Hot Leg Roll Transition Zone

   One hundred and fifty eight (158) new tubes contained single or multiple axial indications at the original Roll Transition Zone. Fourteen (14) tubes contained single or multiple axial indications in existing Additional Roll Expansion transition zones. One (1) tube was plugged due to spatial limitations of the re-roll tooling. One (1) tube was in situ pressure tested and then plugged. Two (2) tubes were plugged due to unsatisfactory Additional Roll Expansion profilometry results. Zero (0) tubes had unsuccessful Additional Roll Expansion caused by appearance of secondary side indications. One (1) tube was plugged due to apparent damage from the rolling tool. One hundred and sixty seven (167) tubes became F* tubes after successful Additional Roll Expansions.

5. Primary Water Stress Corrosion Cracking (PWSCC) at the Row 1 and 2 u-bends

   One (1) tube was plugged due to an indication of tube degradation in the row 1 u-bends. Zero (0) tubes contained indications of tube degradation in the row 2 u-bends.

   Seven (7) additional tubes (two (2) of which occurred after u-bend heat treatment) were plugged due to concerns with eddy current data quality in the u-bend region.

6. Other

One (1) tube was plugged due to a single volumetric indication at a hot leg tube support plate for which the degradation mechanism is indeterminate.

Two (2) tubes were returned to service following successful removal of a washer lodged on top of the fourth tube support plate.

Possible PWSCC Near the Tube End

There were one hundred and thirty four (134) axial indications near tube ends, all on the hot leg side. Of these, there were one hundred and eleven (111) tubes which contained only indications at the tube end and were classified as F* tubes.

Maximum Length of Roll Transition Zone Indications

The maximum length of new indications in the Roll Transition Zone was one tube at 0.29 inches.

Visual Tube Plug Inspection

A visual inspection was done of all installed tube plugs. No abnormalities were observed.

Post Maintenance Visual Tube Leak Inspection

A visual inspection for tube leakage was conducted at all new re-rolls following the reroll repairs with the secondary side pressurized to greater than 100 psig. There were no signs of leakage.

Tube Plug Replacement

Seven (7) B&W Alloy 600 hot leg plugs required replacement due to eddy current indications. All of the remaining B&W Alloy 600 plugs were replaced with Alloy 690 plugs in both the hot leg and cold leg.

Circumferential Indications

One (1) circumferential indication was found in a row 1 tube at the hot leg tangent. This tube was pressure tested in situ at 5700 psig. The tube was leak tight at main steam line break pressure, but did leak 0.005 GPM at 3ΔP conditions. Structural and leakage integrity performance criteria were met. Review of historical eddy current data

determined that the indication could be first identified with benefit of hindsight in 1995 and had not grown significantly while in service.

Category C-3

The results of this inspection program of 21 Steam Generator were classified as Category C-3 by Technical Specification 4.12 because more than 1% (including rotating probe indications) of the inspected tubes in 21 Steam Generator were defective.

22 Steam Generator Plugged Tube and F* Tube Summary

Summary

New Indications Plugged this Outage:	10
Total Plugged Tubes:	217
Total F* Tubes:	514
22 Steam Generator % Plugged:	6.40%

Inspection Scope

All open tubes were examined full length with the bobbin coil, except for Row 1 and 2 u-bends prior to u-bend heat treatment.

All Row 1 and 2 u-bends were examined with the High Frequency +Point™ Coil (HFPP9) and Standard Mid Range Frequency +Point™ Coil (PP11) prior to u-bend heat treatment.

All Row 1 and 2 u-bends were examined with the magnetically biased High Frequency +Point™ Coil (HFPP9), the magnetically biased Standard Mid Range Frequency +Point™ Coil (PP11) and the bobbin coil after u-bend heat treatment.

In order to best identify those tubes which have minor degradation in the tubesheet region and in accordance with the requirements of Generic Letter 95-03, all hot leg tubes were examined with rotating probe technology (including the +Point™ coil) from tube end hot to 3 inches above the top of the tubesheet and twenty percent of the cold leg tubes were examined with rotating probe technology (including the +Point™ coil) from tube end cold to 1 inch above the top of the tubesheet with no need for expansion.

All non-quantifiable bobbin coil indications, all distorted tube support plate indications and all dents at structures (±0.5") greater than 5 volts were examined with rotating probe technology (including the +Point™ coil)

New Indications

Seventy-nine (79) new tubes were identified with the following types of degradation:

1. Wastage

   Five (5) tubes were plugged for thinning at the cold leg tube support plate due to single volumetric indications for which the bobbin sizing technique is unreliable due to poor signal to noise ratio.

2. Secondary Side IGA/SCC in Hot Leg Tubesheet Region

Two (2) tubes were plugged due to single or multiple indications in the tubesheet crevice region indicative of secondary side IGA/SCC occurring in the tubesheet region. One (1) of these tubes was plugged due to axial indications appearing after installation of an additional roll expansion.

3. Secondary Side IGA/SCC at Tube Support Plates

There was no confirmation of secondary side IGA/SCC at the tube support plates.

4. Primary Water Stress Corrosion Cracking (PWSCC) at the Hot Leg Roll Transition Zone

Sixty-eight (68) new tubes contained single or multiple axial indications at the original Roll Transition Zone. Two (2) tubes contained single or multiple axial indications in existing Additional Roll Expansion transition zones. One (1) tube (also discussed in 2. above) was plugged due to unsuccessful Additional Roll Expansion. Sixty-nine (69) tubes became F* tubes after successful Additional Roll Expansions.

5. Primary Water Stress Corrosion Cracking (PWSCC) at the Row 1 and 2 u-bends

There were no indications of tube degradation in the row 1 and 2 u-bends.

Three (3) tubes were plugged due to concerns with eddy current data quality in the u-bend region.

6. Other

There were no other indications requiring repair.

<u>Possible PWSCC Near the Tube End</u>

There were ninety (90) axial indications near tube ends, all on the hot leg side. Of these, there were eighty-five (85) tubes which contained only indications at the tube end and were classified as F* tubes.

<u>Maximum Length of Roll Transition Zone Indications</u>

The maximum length of new indications in the Roll Transition Zone was one tube at 0.23 inches.

Visual Tube Plug Inspection

A visual inspection was done of all installed tube plugs. One Westinghouse explosive plugs exhibited unusual boric acid residue and was replaced with a welded Alloy 690 tubesheet plug.

One B&W Alloy 600 plug exhibited unusual boric acid residue and was replaced with an Alloy 690 rolled mechanical plug.

Post Maintenance Visual Tube Leak Inspection

A visual inspection for tube leakage was conducted at all new re-rolls following the reroll repairs and welded tubesheet plug installations with the secondary side pressurized to greater than 100 psig. There were no indications of leakage

Tube Plug Removal

Four (including the one with boric acid residue) B&W Alloy 600 hot leg plugs required replacement due to eddy current indications. All of the remaining B&W Alloy 600 plugs were replaced with Alloy 690 plugs in both the hot leg and cold leg.

Circumferential Indications

No circumferential indications were found.

Category C-3

The results of this inspection program of 22 Steam Generator were classified as Category C-3 by Technical Specification 4.12 because more than 1% (including rotating probe indications) of the inspected tubes in 22 Steam Generator were defective.

ATTACHMENT 2

Prairie Island Unit 2 Steam Generator Category C-3 Tube Inspection Special Report

Prairie Island Unit 2 Steam Generators
Category C-3 Tube Inspection
Special Report

Purpose

This report fulfills the special reporting requirements of Prairie Island Technical Specification 4.12.E.3. This report is required whenever the steam generator tube inservice inspection finds more than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective. This report summarizes the inspection results, the causes of degradation, the condition monitoring assessment, and the operational assessment.

Summary

As a result of the eddy current inspections, 5.8% (185 of 3195) of the inspected tubes in 21 Steam Generator contained defects or poor u-bend data quality requiring repair. Eighteen (18) of these tubes were plugged and the remaining one hundred and sixty seven (167) tubes were left in service using the F-Star (F*) alternate repair criteria. Two (2) tubes were restored to service following successful removal of foreign material.

As a result of the eddy current inspection, 2.5% (79 of 3181) of the inspected tubes in 22 Steam Generator contained defects or poor u-bend data quality requiring repair. Ten (10) of these tubes were plugged and sixty-nine (69) tubes were left in service using the (F*) alternate repair criteria.

Background

Table 1 provides data on the Prairie Island Nuclear Generating Plant that is significant for the steam generators.

Table 1: PRAIRIE ISLAND PLANT DATA

Location: On Mississippi River near Red Wing Minnesota
Nuclear Steam Supply System: Westinghouse 2-Loop 560 MWE
Steam Generators: Westinghouse Model 51
Mill-Annealed Alloy 600 Tubing
Open Tubesheet Crevices - 2.75 inch hard roll at bottom of tube
Circulating Water: Mississippi River/Cooling Towers
Secondary Systems Tubing: Stainless Steel/Carbon Steel
Startup Dates: Unit 1 - December 16, 1973
Unit 2 - December 21, 1974
Effective Full Power Years as of End of Previous Cycle:
Unit 1 (EOC 19) - 20.8 EFPY's
Unit 2 (EOC 19) - 21.6 EFPY's
HOT LEG TEMPERATURE: 590 degrees Fahrenheit

The current status of each steam generator at Prairie Island is shown in the attached Table 2: "Prairie Island Steam Generator Tube Plug and Sleeve Status."

Causes of Major Tube Degradation

There is one major cause of the degradation of tubes in Unit 2 steam generators. Primary water stress corrosion cracking is occurring at the roll transition zones in this partial depth tubesheet expansion plant. To a minor extent, secondary side intergranular attack and stress corrosion cracking (IGA/SCC or ODSCC) is occurring in the hot leg tubesheet crevice region, also. The remaining significant degradation is wastage or thinning at the cold leg tube support plates on the outer periphery of the tube bundle. Wastage was characterized by a tube pull in 1980.

Condition Monitoring

Condition Monitoring evaluates the as found condition of the steam generator tubing against leakage and structural integrity criteria. There were no tubes identified that exceeded the structural integrity requirement of no tube burst at three times the normal operating differential pressure. Degradation mechanisms located in the tubesheet crevice region can not burst due to the constraints of the tubesheet. Axial degradation mechanisms are not expected to burst unless the indication is greater than 0.38 inches long in the free span. One circumferential indication at a row 1 u-bend tangent was pressure tested in situ and met structural and leakage integrity requirements. There

were no tubes identified by in situ pressure testing which exceeded leakage limits at main steam line break conditions.

In Situ Tests

To demonstrate adequate leakage and structural integrity, three tubes were pressure tested in situ. Tubes were selected based on largest extent and voltage of the eddy current indications. Tests were done at Main Steam Line Break (MSLB) conditions for indications in the tubesheet crevice region. Tests were done at Main Steam Line Break pressure and at three times normal operating differential pressure (3dp) for indications in free span regions. The test pressure for Main Steam Line Break conditions was 2816 psig and for 3dp conditions was 5624 psig. The list of tubes tested in situ is in Attachment 4. No tubes challenged the structural integrity criteria of 3 times normal operating differential pressure. No tubes leaked at Main Steam Line Break pressures.

Operational Assessment

Unit 2 Cycle 19 length was 475.5 EFPD. Unit 2 Cycle 20 length is planned to be 560 EFPD. Unit 2 Cycle 18 length was 538 EFPD.

The expected severity of tubing degradation at the end of cycle 20 was projected to determine if required structural and leakage integrity margins will be maintained during the next cycle of operation. The scope of this evaluation included the following forms of tubing degradation:

- Cold leg thinning
- Wear at AVB's
- Postulated Row 1 and Row 2 Axial PWSCC at U-Bends
- Circumferential PWSCC near U-Bend Tangent Points
- Axial ODSCC in the Tubesheet Crevice Region
- Axial PWSCC Near Partial Depth Expansion Transitions
- Axial PWSCC at Tube Ends

Bounding deterministic operational assessments were performed. All input was considered at 95th percentile bounding values. An evaluation of projected worst case EOC structural and leakage integrity margins shows that full cycle operation (1.534 EFPY) is warranted.

Detailed Monte Carlo simulations of projected tube degradation for postulated axial PWSCC in Row 1 and Row 2 u-bends confirmed the conservative nature of the bounding deterministic approach when all input is considered at 95th percentile bounding levels. Circumferential PWSCC at u-bends is bounded by the more conservative axial analysis. Heat Treatment of the rows 1 and 2 u-bends was conducted to provide additional assurance of u-bend integrity.

Remedial Actions

Northern States Power has participated in utility funded research on steam generator related issues beginning with the Steam Generator Owners Group II in 1982 and continuing to the present EPRI funded Steam Generator Management Project. Remedial actions to reduce and/or prevent tube degradation due to primary water stress corrosion cracking and secondary side IGA/SCC have been used by the industry with only limited success. Prairie Island has evaluated, and in most cases, implemented the following remedial actions:

Reduced Operating Temperature: Prairie Island has been a low temperature plant having operated with T_{hot} at 590 °F since startup. This has slowed, but not eliminated, growth of PWSCC and IGA/SCC in the Prairie Island steam generators. Additional temperature reduction has not been warranted.

Chemistry Control: Prairie Island has used state of the art analytical equipment since startup and has followed both the original equipment manufacturer's water chemistry guidelines as well as the EPRI secondary water chemistry guidelines. The amounts of material found from hideout return tests during shutdowns have been small. Steam generators are sludge lanced every other outage on a cycling basis with less than 80 pounds of sludge removed from the steam generator per outage. The PWSCC degradation is relatively independent of chemistry and occurs in regions of high residual stress. Plasticor repairs of the condenser tubesheets have reduced circulating water in leakage to a very low level.

High Hydrazine Control: Prairie Island maintains a hydrazine control band of 125 +/- 25 ppb.

Molar ratio control to reduce secondary side corrosion: Molar ratio control has been attempted by adjustments to steam generator blowdown resin ratios during the last operating cycle. Operating molar ratios are normally less than 1. The object of molar ratio control is to maintain the cation to anion ratio (sodium to chloride plus sulfate) at less than one so that free sodium hydroxide can not form in the crevice regions.

Conduct Crevice Flushing Operations with Boric Acid: Prairie Island implemented crevice flushing from 1986 through 1997. Boric acid and titanium dioxide inhibitors were added during the crevice flushing procedure.

On-line addition of Boric Acid: Following the report of favorable laboratory results in 1986, Prairie Island began on-line addition of boric acid in Unit 1 in March 1987. The effectiveness of this remedial action remains controversial within the industry (EPRI IGA/SCC workshops in May 1991 and December 1992). Prairie Island will

continue to use boric acid until such time as an inhibitor of equal or greater effectiveness is justified for on-line use. One of the recommended boric acid practices, low power soaks, has not been implemented at Prairie Island. There are very few tubes that have indications of OD IGA/SCC in Unit 2.

Use of other chemical inhibitors: At the present time, NSP supports EPRI research for other chemical inhibitors. Our current evaluations center around the use of titanium compounds to inhibit the growth of IGA/SCC. A titanium chelate, TYZOR LA Titanate has been added since January 1994.

Preventive sleeving: Sleeving is one method of reducing the probability of tube leak outages. The down side of preventive sleeving is the inability to follow the degradation mechanism and the reduction in the ability to examine tube support plate intersections above the sleeves. NSP has made the strategic decision to sleeve on an as-needed basis, to insure that we are able to best follow the tube support plate problems and to reduce our overall cost of steam generator repair and maintenance. Sleeving has not been required in Unit 2 due to the high success with additional roll expansions and the F* Repair Criteria.

F* Repair Criteria: The F-Star Alternate Repair Criteria allows tubes to remain in service with indications below the F* distance. Additional Roll Expansion adds a new F* distance to the steam generator tubing and allows additional tubes to remain in service which have degradation in the lower tubesheet crevice region.

Detailed Inspection Plans: Although not a recommendation for remedial actions, but rather a current inspection guideline, 100% of the full length of all tubes in service is routinely examined at Prairie Island. This was started in 1982. In addition, all tubes with indications that can not be quantified, such as NQI's, DSI's, MBM's (in the tubesheet) are examined with the rotating coil probe due to its higher sensitivity. Repair decisions, in those cases, are based on the RPC results.

Table 2: Prairie Island Steam Generator Tube Degradation and Repair Status

Type of Degradation[1]	11 SG	12 SG	21 SG	22 SG
Cold Leg TSP Thinning	58	33	80	143
Antivibration Bar Wear	24	3	9	31
Tubesheet Sec Side IGA/SCC Only	16	751	26	8
Roll Transition Zone PWSCC Only	30	400	803	450
RTZ PWSCC and Sec Side IGA/SCC	2	47	17	1
Hot Leg Tube Support Plate	22	42	0	0
Voltage Based ARC TSP Distorted Indications	315	144	0	0
U-Bend PWSCC	1	2	2	0
Loose Parts	8	0	4	2
Free Span & Top of Tubesheet	16	18	5	6
Tube End Axial Indications	250	4	112	85
Other	4	3	15	5
ET Data Quality	0	0	7	3
Total Tubes Defective	**747**	**1453**	**1073**	**731**
% Tubes Defective	**22%**	**43%**	**32%**	**22%**

Type of Repair				
Tubes Plugged	156	348	211	217
Voltage Based Repair Criteria	315	144	0	0
Tubesheet Sleeves (IGA/SCC)[2,3]	0	969	0	0
F*0 Alternate Repair Criteria	250	4	111	85
F*1 ARC w/ Additional Roll Expansions	6	6	717	398
F*2 ARC w/ Additional Roll Expansions	0	0	34	31
EF* ARC w/ Additional Roll Expansions	19	0	0	0
Total Tubes Repaired	747	1477	1073	731
% Equivalent Plugged	**4.60%**	**11.29%**	**6.23%**	**6.40%**
% Equivalent Plugged per Unit	***7.95%***		***6.31%***	

[1]Except for sleeved tubes, only one degradation classification given per tube

[2]Includes 26 preventive sleeves installed in 1988 in 12 SG

[3]28 Sleeves = 1 plug

ATTACHMENT 3

F* Tube Report

21 Steam Generator F* Tubes, May, 2000						
GEN	LEG	ROW	COL	INDICATION	LOCATION & EXTENT	STATUS
21	H	1	2	SAI	TRH -2.50 TO-2.44	F*0
21	H	3	3	SAN	TRH -2.62 TO-2.55	F*0
21	H	1	4	SAN	TRH -2.64 TO-2.40	F*0
21	H	1	6	SAN	TRH -2.57 TO-2.41	F*0
21	H	3	6	MAN	TRH -2.22 TO-2.07	F*0
21	H	1	7	SAN	TRH -2.55 TO-2.48	F*0
21	H	2	7	MAN	TRH -2.64 TO-2.33	F*0
21	H	7	7	SAN	TRH -2.74 TO-2.51	F*0
21	H	2	8	SAN	TRH -2.58 TO-2.38	F*0
21	H	5	8	SAN	TRH -2.22 TO-2.09	F*0
21	H	4	9	SAN	TRH -2.66 TO-2.52	F*0
21	H	2	10	SAN	TRH -2.22 TO-2.09	F*0
21	H	15	10	SAN	TRH -2.19 TO-2.04	F*0
21	H	25	10	SAN	TRH -2.37 TO-2.17	F*0
21	H	1	11	MAN	TRH -2.58 TO-2.42	F*0
21	H	3	11	MAN	TRH -2.66 TO-2.50	F*0
21	H	23	11	SAI	TRH -2.28 TO-2.23	F*0
21	H	27	11	SAI	TRH -2.51 TO-2.36	F*0
21	H	29	11	SAI	TRH -2.40 TO-2.28	F*0
21	H	2	12	SAN	TRH -2.49 TO-2.36	F*0
21	H	5	12	SAI	TRH -2.45 TO-2.34	F*0
21	H	7	12	SAN	TRH -2.61 TO-2.54	F*0
21	H	15	12	SAN	TRH -2.61 TO-2.48	F*0
21	H	28	12	MAN	TRH -2.36 TO-2.26	F*0
21	H	1	13	MAN	TRH -2.49 TO-2.15	F*0
21	H	6	13	SAN	TRH -2.39 TO-2.26	F*0
21	H	7	13	MAN	TRH -2.45 TO-2.26	F*0
21	H	1	14	MAN	TRH -2.54 TO-2.32	F*0
21	H	7	15	SAN	TRH -2.37 TO-2.08	F*0
21	H	27	15	SAN	TRH -2.79 TO-2.56	F*0
21	H	2	16	SAN	TRH -2.39 TO-2.22	F*0
21	H	3	16	SAN	TRH -2.59 TO-2.36	F*0
21	H	5	16	SAN	TRH -2.57 TO-2.44	F*0
21	H	13	16	SAN	TRH -2.46 TO-2.32	F*0
21	H	15	16	SAN	TRH -2.51 TO-2.35	F*0
21	H	18	16	MAN	TRH -2.51 TO-2.33	F*0
21	H	2	17	SAN	TRH -2.59 TO-2.44	F*0
21	H	5	17	SAI	TRH -2.60 TO-2.53	F*0
21	H	7	17	MAN	TRH -2.51 TO-2.25	F*0
21	H	33	18	SAN	TRH -2.53 TO-2.44	F*0

21	H	7	19	SAN	TRH	-2.45	TO-2.30	F*0
21	H	8	19	SAI	TRH	-2.51	TO-2.34	F*0
21	H	26	19	SAN	TRH	-2.55	TO-2.37	F*0
21	H	25	20	MAN	TRH	-2.55	TO-2.31	F*0
21	H	33	20	MAN	TRH	-2.46	TO-2.24	F*0
21	H	33	21	SAI	TRH	-2.50	TO-2.20	F*0
21	H	7	22	SAN	TRH	-2.45	TO-2.11	F*0
21	H	4	24	SAI	TRH	-2.55	TO-2.45	F*0
21	H	7	24	SAN	TRH	-2.37	TO-2.24	F*0
21	H	8	24	SAN	TRH	-2.47	TO-2.36	F*0
21	H	33	24	SAN	TRH	-2.43	TO-2.20	F*0
21	H	1	25	SAI	TRH	-2.49	TO-2.42	F*0
21	H	24	25	MAI	TRH	-2.43	TO-2.33	F*0
21	H	33	25	SAN	TRH	-2.46	TO-2.32	F*0
21	H	31	28	SAI	TRH	-2.36	TO-2.24	F*0
21	H	33	30	SAN	TRH	-2.47	TO-2.31	F*0
21	H	17	32	SAI	TRH	-2.44	TO-2.37	F*0
21	H	1	34	SAN	TRH	-2.49	TO-2.43	F*0
21	H	33	34	SAI	TRH	-2.51	TO-2.47	F*0
21	H	1	35	SAN	TRH	-2.49	TO-2.36	F*0
21	H	25	41	SAN	TRH	-2.57	TO-2.36	F*0
21	H	1	47	MAN	TRH	-2.45	TO-2.16	F*0
21	H	21	47	MAI	TRH	-2.39	TO-2.32	F*0
21	H	23	61	SAI	TRH	-2.37	TO-2.29	F*0
21	H	24	61	SAN	TRH	-2.11	TO-2.01	F*0
21	H	27	61	MAN	TRH	-2.38	TO-2.27	F*0
21	H	1	62	SAN	TRH	-2.56	TO-2.47	F*0
21	H	15	62	SAN	TRH	-2.49	TO-2.30	F*0
21	H	17	62	SAN	TRH	-2.38	TO-2.23	F*0
21	H	23	62	MAI	TRH	-2.35	TO-2.25	F*0
21	H	33	62	SAI	TRH	-2.25	TO-2.19	F*0
21	H	25	63	SAN	TRH	-2.39	TO-2.30	F*0
21	H	29	63	SAN	TRH	-2.39	TO-2.30	F*0
21	H	1	64	MAN	TRH	-2.65	TO-2.39	F*0
21	H	15	64	SAN	TRH	-2.43	TO-2.39	F*0
21	H	32	64	SAI	TRH	-2.50	TO-2.39	F*0
21	H	1	65	SAN	TRH	-2.57	TO-2.42	F*0
21	H	18	65	SAI	TRH	-2.32	TO-2.26	F*0
21	H	26	65	MAN	TRH	-2.41	TO-2.31	F*0
21	H	30	65	SAI	TRH	-2.46	TO-2.41	F*0
21	H	1	66	MAN	TRH	-2.60	TO-2.40	F*0
21	H	2	66	SAI	TRH	-2.23	TO-2.17	F*0
21	H	25	66	SAN	TRH	-2.77	TO-2.66	F*0

21	H	17	67	SAI	TRH -1.49 TO-1.43	F*0
21	H	1	68	SAN	TRH -2.35 TO-2.29	F*0
21	H	8	68	SAN	TRH -2.27 TO-2.21	F*0
21	H	27	68	SAN	TRH -2.16 TO-2.04	F*0
21	H	1	69	SAN	TRH -2.41 TO-2.26	F*0
21	H	15	69	SAN	TRH -2.52 TO-2.43	F*0
21	H	24	69	MAN	TRH -2.40 TO-2.26	F*0
21	H	24	70	SAI	TRH -2.36 TO-2.32	F*0
21	H	25	70	SAN	TRH -2.49 TO-2.35	F*0
21	H	30	70	SAN	TRH -2.63 TO-2.53	F*0
21	H	17	71	SAN	TRH -2.21 TO-2.18	F*0
21	H	23	71	SAI	TRH -2.35 TO-2.29	F*0
21	H	31	71	SAN	TRH -2.50 TO-2.32	F*0
21	H	27	72	SAN	TRH -2.59 TO-2.52	F*0
21	H	31	72	SAN	TRH -2.59 TO-2.40	F*0
21	H	25	73	SAN	TRH -2.45 TO-2.39	F*0
21	H	1	75	SAN	TRH -2.48 TO-2.36	F*0
21	H	16	75	SAI	TRH -2.15 TO-2.11	F*0
21	H	1	76	SAN	TRH -2.39 TO-2.27	F*0
21	H	6	76	SAN	TRH -2.31 TO-2.21	F*0
21	H	16	76	SAN	TRH -2.44 TO-2.14	F*0
21	H	26	76	SAI	TRH -2.36 TO-2.30	F*0
21	H	27	76	MAN	TRH -2.44 TO-2.34	F*0
21	H	1	77	SAN	TRH -2.47 TO-2.22	F*0
21	H	1	78	SAN	TRH -2.47 TO-2.37	F*0
21	H	20	79	SAN	TRH -2.58 TO-2.47	F*0
21	H	21	79	SAN	TRH -2.46 TO-2.33	F*0
21	H	6	93	SAI	TRH -2.42 TO-2.35	F*0
21	H	14	3	MAD	1BH -1.63	F*1
21	H	6	4	SAD	1BH -1.16	F*1
21	H	7	4	SAD	1BH -1.00	F*1
21	H	1	8	MAD	1BH -1.31	F*1
21	H	5	9	SAD	1BH -1.37	F*1
21	H	7	9	MAD	1BH -1.22	F*1
21	H	1	10	MAD	1BH -1.39	F*1
21	H	4	10	SAD	1BH -1.39	F*1
21	H	5	10	SAD	1BH -1.10	F*1
21	H	12	10	SAD	1BH -1.25	F*1
21	H	20	10	SAD	1BH -1.33	F*1
21	H	2	11	SAD	1BH -0.90	F*1
21	H	4	11	MAN	1BH -1.27 TO-1.14	F*1
21	H	5	11	MAN	1BH -1.36 TO-1.24	F*1
21	H	13	11	SAD	1BH -0.79	F*1

21	H	14	11	MAD	1BH -1.12	F*1
21	H	1	12	SAD	1BH -1.32	F*1
21	H	9	12	SAD	1BH -1.33	F*1
21	H	11	12	SAD	1BH -1.06	F*1
21	H	14	12	MAN	1BH -1.27 TO-0.88	F*1
21	H	22	12	SAD	1BH -1.40	F*1
21	H	2	13	MAN	1BH -1.25 TO-0.77	F*1
21	H	4	13	SAN	1BH -1.32 TO-1.22	F*1
21	H	13	13	SAD	1BH -1.40	F*1
21	H	14	13	SAD	1BH -1.33	F*1
21	H	2	14	SAN	1BH -3.64 TO-3.41	F*1
21	H	4	14	MAD	1BH -1.22	F*1
21	H	5	14	SAD	1BH -2.14	F*1
21	H	6	14	SAD	1BH -1.30	F*1
21	H	7	14	SAN	1BH -3.70 TO-3.59	F*1
21	H	9	14	MAN	1BH -1.35 TO-1.19	F*1
21	H	11	14	MAN	1BH -1.21 TO-1.06	F*1
21	H	1	15	MAN	1BH -1.16 TO-1.04	F*1
21	H	2	15	SAD	1BH -1.38	F*1
21	H	5	15	SAD	1BH -1.17	F*1
21	H	8	15	SAD	1BH -1.21	F*1
21	H	10	15	SAD	1BH -1.37	F*1
21	H	11	15	SAD	1BH -0.89	F*1
21	H	13	15	MAN	1BH -1.44 TO-0.99	F*1
21	H	15	15	SAD	1BH -0.90	F*1
21	H	16	15	MAN	1BH -1.14 TO-0.93	F*1
21	H	18	15	MAN	1BH -1.32 TO-1.19	F*1
21	H	26	15	SAD	1BH -0.85	F*1
21	H	1	16	SAD	1BH -1.34	F*1
21	H	4	16	MAN	1BH -1.29 TO-1.15	F*1
21	H	7	16	SAD	1BH -0.80	F*1
21	H	8	16	MAD	1BH -1.20	F*1
21	H	10	16	SAD	1BH -0.88	F*1
21	H	12	16	MAD	1BH -1.23	F*1
21	H	14	16	MAD	1BH -1.35	F*1
21	H	17	16	SAD	1BH -1.28	F*1
21	H	24	16	MAD	1BH -1.39	F*1
21	H	29	16	MAN	1BH -1.19 TO-1.06	F*1
21	H	1	17	MAN	1BH -1.33 TO-1.00	F*1
21	H	6	17	SAD	1BH -0.92	F*1
21	H	11	17	SAD	1BH -1.32	F*1
21	H	13	17	SAD	1BH -1.31	F*1
21	H	14	17	SAN	1BH -1.24 TO-1.09	F*1

21	H	18	17	SAD	1BH -1.27	F*1
21	H	19	17	SAD	1BH -1.32	F*1
21	H	25	17	MAD	1BH -1.75	F*1
21	H	1	18	MAD	1BH -1.21	F*1
21	H	2	18	SAD	1BH -0.89	F*1
21	H	3	18	SAN	1BH -1.39 TO-1.25	F*1
21	H	4	18	MAN	1BH -1.40 TO-1.11	F*1
21	H	5	18	MAN	1BH -1.41 TO-0.98	F*1
21	H	13	18	SAD	1BH -1.29	F*1
21	H	18	18	MAD	1BH -0.82	F*1
21	H	19	18	SAD	1BH -1.29	F*1
21	H	20	18	SAD	1BH -0.85	F*1
21	H	27	18	SAD	1BH -1.19	F*1
21	H	1	19	MAN	1BH -1.45 TO-1.02	F*1
21	H	2	19	SAD	1BH -1.39	F*1
21	H	4	19	SAD	1BH -1.20	F*1
21	H	6	19	SAD	1BH -1.25 TO-1.21	F*1
21	H	9	19	MAD	1BH -1.20	F*1
21	H	14	19	SAN	1BH -0.90 TO-0.81	F*1
21	H	16	19	SAD	1BH -1.20	F*1
21	H	17	19	MAD	1BH -0.86	F*1
21	H	19	19	MAN	1BH -0.95 TO-0.86	F*1
21	H	22	19	MAD	1BH -0.93	F*1
21	H	23	19	SAD	1BH -1.06	F*1
21	H	24	19	SAD	1BH -0.90	F*1
21	H	25	19	MAD	1BH -1.25	F*1
21	H	27	19	MAD	1BH -1.10	F*1
21	H	31	19	MAD	1BH -1.30	F*1
21	H	33	19	SAD	1BH -1.38	F*1
21	H	4	20	SAD	1BH -0.95	F*1
21	H	6	20	SAD	1BH -0.90	F*1
21	H	7	20	MAN	1BH -1.37 TO-0.97	F*1
21	H	9	20	SAD	1BH -1.16	F*1
21	H	13	20	MAN	1BH -1.36 TO-1.01	F*1
21	H	16	20	SAD	1BH -1.20	F*1
21	H	17	20	MAN	1BH -1.34 TO-1.24	F*1
21	H	18	20	SAD	1BH -1.29	F*1
21	H	19	20	MAD	1BH -1.40	F*1
21	H	27	20	MAN	1BH -1.21 TO-1.02	F*1
21	H	29	20	MAN	1BH -1.19 TO-1.04	F*1
21	H	34	20	SAD	1BH -1.34	F*1
21	H	2	21	SAD	1BH -1.27	F*1
21	H	6	21	MAN	1BH -1.32 TO-1.25	F*1

21	H	8	21	SAD	1BH -1.15	F*1
21	H	9	21	MAN	1BH -1.32 TO-1.10	F*1
21	H	11	21	SAD	1BH -1.21	F*1
21	H	14	21	SAD	1BH -1.29	F*1
21	H	16	21	MAN	1BH -1.21 TO-1.09	F*1
21	H	17	21	MAN	1BH -1.42 TO-1.30	F*1
21	H	20	21	MAD	1BH -0.88	F*1
21	H	23	21	MAD	1BH -1.41	F*1
21	H	24	21	MAN	1BH -1.37 TO-1.03	F*1
21	H	26	21	SAD	1BH -1.25	F*1
21	H	27	21	SAD	1BH -1.47	F*1
21	H	28	21	SAD	1BH -0.85	F*1
21	H	31	21	SAD	1BH -1.27	F*1
21	H	1	22	MAN	1BH -1.36 TO-0.98	F*1
21	H	2	22	MAN	1BH -1.18 TO-1.07	F*1
21	H	4	22	MAN	1BH -1.20 TO-1.11	F*1
21	H	5	22	SAD	1BH -0.84	F*1
21	H	8	22	MAN	1BH -1.25 TO-1.10	F*1
21	H	10	22	SAD	1BH -0.90	F*1
21	H	13	22	MAD	1BH -1.20	F*1
21	H	14	22	MAN	1BH -1.11 TO-1.05	F*1
21	H	16	22	MAN	1BH -1.29 TO-1.16	F*1
21	H	17	22	MAN	1BH -1.38 TO-1.26	F*1
21	H	20	22	SAD	1BH -0.88	F*1
21	H	21	22	MAD	1BH -1.31	F*1
21	H	24	22	MAD	1BH -0.85	F*1
21	H	26	22	MAD	1BH -0.87	F*1
21	H	32	22	SAD	1BH -1.39	F*1
21	H	1	23	MAD	1BH -1.00	F*1
21	H	3	23	MAN	1BH -1.40 TO-0.92	F*1
21	H	6	23	MAN	1BH -1.27 TO-1.19	F*1
21	H	8	23	MAD	1BH -1.30	F*1
21	H	9	23	SAD	1BH -1.29	F*1
21	H	10	23	SAD	1BH -0.87	F*1
21	H	12	23	MAD	1BH -1.21	F*1
21	H	14	23	MAN	1BH -1.26 TO-1.13	F*1
21	H	16	23	MAN	1BH -1.27 TO-1.15	F*1
21	H	17	23	MAD	1BH -1.30	F*1
21	H	19	23	MAN	1BH -1.25 TO-1.18	F*1
21	H	23	23	MAD	1BH -1.22	F*1
21	H	24	23	MAD	1BH -0.83	F*1
21	H	25	23	MAD	1BH -0.78	F*1
21	H	30	23	MAD	1BH -0.97	F*1

21	H	31	23	SAD	1BH -1.23	F*1
21	H	3	24	SAD	1BH -1.47	F*1
21	H	5	24	MAN	1BH -1.28 TO-1.12	F*1
21	H	6	24	MAN	1BH -1.26 TO-1.12	F*1
21	H	9	24	SAN	1BH -1.22 TO-1.12	F*1
21	H	12	24	MAN	1BH -1.24 TO-1.09	F*1
21	H	15	24	SAD	1BH -0.89	F*1
21	H	19	24	MAD	1BH -0.82	F*1
21	H	20	24	MAD	1BH -1.34	F*1
21	H	28	24	SAD	1BH -0.93	F*1
21	H	30	24	MAD	1BH -1.31	F*1
21	H	35	24	SAD	1BH -0.83	F*1
21	H	6	25	MAD	1BH -1.20	F*1
21	H	7	25	SAD	1BH -1.30	F*1
21	H	8	25	SAD	1BH -1.49	F*1
21	H	9	25	SAN	1BH -0.81 TO-0.73	F*1
21	H	14	25	MAD	1BH -1.29	F*1
21	H	16	25	SAN	1BH -1.25 TO-1.11	F*1
21	H	30	25	MAD	1BH -1.39	F*1
21	H	38	25	MAD	1BH -0.89	F*1
21	H	4	26	SAD	1BH -1.32	F*1
21	H	5	26	SAD	1BH -1.27	F*1
21	H	10	26	MAD	1BH -0.91	F*1
21	H	13	26	MAD	1BH -1.27	F*1
21	H	15	26	MAD	1BH -0.85	F*1
21	H	17	26	SAN	1BH -1.29 TO-1.20	F*1
21	H	18	26	SAD	1BH -1.32	F*1
21	H	28	26	SAD	1BH -0.93	F*1
21	H	4	27	MAD	1BH -0.93	F*1
21	H	6	27	SAD	1BH -0.87	F*1
21	H	8	27	SAN	1BH -1.26 TO-1.17	F*1
21	H	13	27	SAD	1BH -1.28	F*1
21	H	17	27	MAN	1BH -1.37 TO-1.06	F*1
21	H	26	27	MAD	1BH -1.27	F*1
21	H	27	27	MAD	1BH -1.30	F*1
21	H	28	27	SAN	1BH -1.20 TO-1.10	F*1
21	H	31	27	MAD	1BH -0.79	F*1
21	H	32	27	SAN	1BH -1.12 TO-1.02	F*1
21	H	37	27	MAD	1BH -0.90	F*1
21	H	1	28	MAN	1BH -1.42 TO-0.85	F*1
21	H	3	28	MAN	1BH -1.36 TO-0.99	F*1
21	H	5	28	MAN	1BH -1.27 TO-1.16	F*1
21	H	6	28	SAD	1BH -1.30	F*1

21	H	9	28	SAN	1BH -1.39 TO-0.87	F*1
21	H	11	28	SAD	1BH -0.77	F*1
21	H	14	28	SAN	1BH -1.20 TO-1.13	F*1
21	H	15	28	SAN	1BH -1.25 TO-1.16	F*1
21	H	16	28	MAN	1BH -1.28 TO-1.14	F*1
21	H	18	28	MAD	1BH -1.23	F*1
21	H	19	28	MAN	1BH -1.57 TO-0.97	F*1
21	H	20	28	SAD	1BH -1.25	F*1
21	H	21	28	MAN	1BH -1.48 TO-1.03	F*1
21	H	23	28	MAN	1BH -1.43 TO-0.97	F*1
21	H	32	28	SAD	1BH -0.96	F*1
21	H	38	28	MAN	1BH -1.19 TO-1.07	F*1
21	H	4	29	MAN	1BH -1.25 TO-1.15	F*1
21	H	5	29	SAD	1BH -0.89	F*1
21	H	7	29	MAN	1BH -1.20 TO-1.13	F*1
21	H	8	29	MAD	1BH -1.27	F*1
21	H	9	29	SAD	1BH -0.90	F*1
21	H	10	29	MAD	1BH -1.31	F*1
21	H	16	29	MAN	1BH -1.26 TO-1.11	F*1
21	H	18	29	SAN	1BH -1.43 TO-1.01	F*1
21	H	19	29	MAD	1BH -1.30	F*1
21	H	23	29	MAD	1BH -1.26	F*1
21	H	26	29	SAD	1BH -1.22	F*1
21	H	27	29	MAD	1BH -1.27	F*1
21	H	31	29	MAD	1BH -1.29	F*1
21	H	35	29	SAD	1BH -0.86	F*1
21	H	1	30	MAD	1BH -1.42	F*1
21	H	3	30	MAD	1BH -1.26	F*1
21	H	4	30	MAI	1BH -0.39 TO-0.27	F*1
21	H	6	30	MAN	1BH -1.26 TO-1.07	F*1
21	H	8	30	SAN	1BH -1.20 TO-1.10	F*1
21	H	21	30	MAD	1BH -1.25	F*1
21	H	26	30	SAD	1BH -0.79	F*1
21	H	29	30	MAD	1BH -0.88	F*1
21	H	2	31	MAD	1BH -1.00	F*1
21	H	3	31	MAN	1BH -1.00 TO-0.93	F*1
21	H	4	31	MAN	1BH -1.42 TO-0.87	F*1
21	H	6	31	SAN	1BH -0.86 TO-0.73	F*1
21	H	10	31	SAD	1BH -1.26	F*1
21	H	22	31	SAD	1BH -1.27	F*1
21	H	23	31	SAN	1BH -1.19 TO-1.13	F*1
21	H	26	31	SAD	1BH -0.84	F*1
21	H	32	31	SAD	1BH -1.36	F*1

21	H	34	31	MAD	1BH -0.82	F*1
21	H	35	31	SAD	1BH -0.90	F*1
21	H	37	31	MAD	1BH -1.23	F*1
21	H	1	32	MAN	1BH -1.42 TO-0.99	F*1
21	H	6	32	MAN	1BH -1.44 TO-0.96	F*1
21	H	8	32	SAD	1BH -0.97	F*1
21	H	25	32	SAD	1BH -1.26	F*1
21	H	26	32	SAD	1BH -1.18	F*1
21	H	27	32	SAD	1BH -1.27	F*1
21	H	30	32	SAN	1BH -1.35 TO-1.11	F*1
21	H	32	32	SAN	1BH -1.23 TO-1.13	F*1
21	H	36	32	MAD	1BH -0.90	F*1
21	H	3	33	MAN	1BH -1.24 TO-1.10	F*1
21	H	4	33	SAD	1BH -1.30	F*1
21	H	7	33	MAN	1BH -1.24 TO-1.07	F*1
21	H	8	33	MAN	1BH -1.21 TO-1.10	F*1
21	H	11	33	SAD	1BH -1.24	F*1
21	H	21	33	MAN	1BH -1.25 TO-1.08	F*1
21	H	22	33	SAD	1BH -1.27	F*1
21	H	23	33	SAD	1BH -0.88	F*1
21	H	24	33	SAD	1BH -1.31	F*1
21	H	27	33	MAN	1BH -1.22 TO-1.14	F*1
21	H	2	34	SAD	1BH -1.27	F*1
21	H	3	34	SAN	1BH -1.22 TO-1.09	F*1
21	H	8	34	MAN	1BH -1.23 TO-1.09	F*1
21	H	10	34	MAN	1BH -1.25 TO-1.12	F*1
21	H	23	34	MAN	1BH -1.25 TO-1.16	F*1
21	H	27	34	SAD	1BH -0.87	F*1
21	H	28	34	SAD	1BH -0.88	F*1
21	H	34	34	MAN	1BH -1.18 TO-1.06	F*1
21	H	4	35	MAD	1BH -0.95	F*1
21	H	5	35	MAD	1BH -1.18	F*1
21	H	8	35	MAN	1BH -1.23 TO-1.13	F*1
21	H	11	35	SAD	1BH -1.28	F*1
21	H	13	35	MAN	1BH -1.14 TO-1.00	F*1
21	H	21	35	MAD	1BH -1.21	F*1
21	H	29	35	SAD	1BH -1.29	F*1
21	H	31	35	SAD	1BH -1.36	F*1
21	H	3	36	SAD	1BH -1.32	F*1
21	H	4	36	MAD	1BH -1.27	F*1
21	H	6	36	MAN	1BH -1.20 TO-1.09	F*1
21	H	7	36	SAD	1BH -1.27	F*1
21	H	8	36	MAN	1BH -1.24 TO-1.08	F*1

21	H	20	36	MAN	1BH -1.29 TO-1.16	F*1
21	H	22	36	SAN	1BH -1.32 TO-1.22	F*1
21	H	23	36	MAD	1BH -1.30	F*1
21	H	29	36	SAD	1BH -1.31	F*1
21	H	35	36	MAD	1BH -0.86	F*1
21	H	36	36	SAD	1BH -0.90	F*1
21	H	4	37	SAD	1BH -1.33	F*1
21	H	6	37	MAN	1BH -1.18 TO-1.07	F*1
21	H	8	37	MAN	1BH -1.02 TO-0.92	F*1
21	H	9	37	SAD	1BH -0.90	F*1
21	H	10	37	SAD	1BH -0.90	F*1
21	H	13	37	MAN	1BH -1.18 TO-1.03	F*1
21	H	21	37	SAN	1BH -1.16 TO-1.09	F*1
21	H	22	37	SAD	1BH -0.80	F*1
21	H	27	37	MAD	1BH -1.25	F*1
21	H	28	37	MAD	1BH -0.84	F*1
21	H	33	37	SAD	1BH -0.88	F*1
21	H	1	38	MAD	1BH -1.25	F*1
21	H	3	38	MAN	1BH -1.02 TO-0.88	F*1
21	H	4	38	MAN	1BH -1.21 TO-1.11	F*1
21	H	5	38	SAD	1BH -1.35	F*1
21	H	7	38	MAN	1BH -1.13 TO-0.99	F*1
21	H	8	38	MAD	1BH -0.93	F*1
21	H	9	38	MAN	1BH -1.06 TO-0.96	F*1
21	H	13	38	SAN	1BH -1.19 TO-1.10	F*1
21	H	23	38	MAD	1BH -0.91	F*1
21	H	24	38	SAD	1BH -1.18	F*1
21	H	30	38	MAD	1BH -1.11	F*1
21	H	31	38	SAD	1BH -1.25	F*1
21	H	2	39	SAD	1BH -1.36	F*1
21	H	4	39	MAN	1BH -1.20 TO-0.97	F*1
21	H	9	39	SAD	1BH -1.24	F*1
21	H	12	39	SAN	1BH -1.19 TO-1.08	F*1
21	H	15	39	SAD	1BH -0.91	F*1
21	H	19	39	SAD	1BH -1.29	F*1
21	H	20	39	SAN	1BH -1.22 TO-1.12	F*1
21	H	21	39	SAN	1BH -1.24 TO-1.16	F*1
21	H	22	39	SAD	1BH -1.28	F*1
21	H	25	39	MAN	1BH -1.11 TO-1.06	F*1
21	H	30	39	MAD	1BH -1.17	F*1
21	H	35	39	SAD	1BH -1.13	F*1
21	H	36	39	SAD	1BH -1.43	F*1
21	H	3	40	MAD	1BH -1.26	F*1

21	H	6	40	MAD	1BH -1.30	F*1
21	H	10	40	MAN	1BH -1.22 TO-1.07	F*1
21	H	12	40	MAD	1BH -1.30	F*1
21	H	30	40	SAD	1BH -0.80	F*1
21	H	33	40	SAD	1BH -1.20	F*1
21	H	37	40	MAD	1BH -1.14	F*1
21	H	2	41	SAD	1BH -0.93	F*1
21	H	3	41	SAD	1BH -1.31	F*1
21	H	4	41	MAN	1BH -1.42 TO-0.84	F*1
21	H	5	41	MAN	1BH -1.12 TO-1.05	F*1
21	H	7	41	MAN	1BH -1.14 TO-1.05	F*1
21	H	8	41	MAD	1BH -1.27	F*1
21	H	11	41	SAD	1BH -1.37	F*1
21	H	12	41	MAN	1BH -1.19 TO-0.99	F*1
21	H	14	41	MAN	1BH -0.88 TO-0.10	F*1
21	H	23	41	SAD	1BH -0.98	F*1
21	H	33	41	MAD	1BH -1.20	F*1
21	H	2	42	MAN	1BH -1.32 TO-1.11	F*1
21	H	3	42	MAD	1BH -1.22	F*1
21	H	5	42	MAD	1BH -0.92	F*1
21	H	7	42	SAN	1BH -1.15 TO-1.09	F*1
21	H	8	42	MAD	1BH -1.23	F*1
21	H	9	42	SAD	1BH -1.23	F*1
21	H	10	42	SAD	1BH -1.28	F*1
21	H	15	42	MAN	1BH -1.19 TO-1.09	F*1
21	H	16	42	SAD	1BH -1.31	F*1
21	H	17	42	SAN	1BH -0.85 TO-0.79	F*1
21	H	21	42	SAD	1BH -1.33	F*1
21	H	24	42	SAD	1BH -1.25	F*1
21	H	25	42	SAD	1BH -0.85	F*1
21	H	28	42	SAD	1BH -1.05	F*1
21	H	36	42	MAD	1BH -1.37	F*1
21	H	5	43	SAN	1BH -1.22 TO-1.13	F*1
21	H	7	43	MAN	1BH -1.10 TO-1.02	F*1
21	H	8	43	SAN	1BH -1.26 TO-1.06	F*1
21	H	9	43	MAN	1BH -1.25 TO-0.92	F*1
21	H	12	43	SAN	1BH -0.87 TO-0.81	F*1
21	H	21	43	SAD	1BH -1.23	F*1
21	H	23	43	MAN	1BH -1.26 TO-1.03	F*1
21	H	24	43	MAN	1BH -1.47 TO-0.80	F*1
21	H	30	43	SAD	1BH -0.80	F*1
21	H	32	43	SAD	1BH -1.10	F*1
21	H	1	44	MAD	1BH -1.32	F*1

21	H	3	44	SAD	1BH -1.30	F*1
21	H	4	44	MAD	1BH -1.25	F*1
21	H	8	44	SAD	1BH -0.90	F*1
21	H	9	44	MAD	1BH -1.25	F*1
21	H	12	44	MAN	1BH -0.95 TO-0.87	F*1
21	H	13	44	SAD	1BH -0.93	F*1
21	H	21	44	SAD	1BH -1.30	F*1
21	H	22	44	SAD	1BH -0.90	F*1
21	H	24	44	MAN	1BH -1.42 TO-0.98	F*1
21	H	1	45	SAD	1BH -1.36	F*1
21	H	3	45	MAN	1BH -1.45 TO-0.85	F*1
21	H	6	45	SAD	1BH -1.18	F*1
21	H	9	45	SAN	1BH -1.20 TO-1.10	F*1
21	H	10	45	MAD	1BH -0.89	F*1
21	H	13	45	MAN	1BH -1.49 TO-0.92	F*1
21	H	14	45	SAN	1BH -0.88 TO-0.82	F*1
21	H	16	45	SAD	1BH -1.30	F*1
21	H	21	45	MAD	1BH -1.26	F*1
21	H	23	45	SAD	1BH -1.33	F*1
21	H	30	45	MAN	1BH -1.22 TO-1.11	F*1
21	H	34	45	SAD	1BH -1.07	F*1
21	H	3	46	MAN	1BH -1.35 TO-0.92	F*1
21	H	4	46	MAN	1BH -1.21 TO-1.14	F*1
21	H	5	46	SAD	1BH -1.13	F*1
21	H	6	46	MAD	1BH -1.55	F*1
21	H	8	46	MAN	1BH -1.28 TO-1.11	F*1
21	H	14	46	MAN	1BH -1.28 TO-1.07	F*1
21	H	15	46	SAD	1BH -0.93	F*1
21	H	16	46	MAD	1BH -1.36	F*1
21	H	17	46	SAD	1BH -1.25	F*1
21	H	19	46	SAD	1BH -1.18	F*1
21	H	21	46	SAD	1BH -1.25	F*1
21	H	22	46	SAD	1BH -1.24	F*1
21	H	24	46	SAI	1BH -0.45 TO-0.29	F*1
21	H	27	46	SAD	1BH -0.85	F*1
21	H	28	46	MAD	1BH -1.28	F*1
21	H	3	47	MAD	1BH -1.41	F*1
21	H	4	47	MAN	1BH -1.28 TO-1.08	F*1
21	H	8	47	SAN	1BH -1.26 TO-1.13	F*1
21	H	9	47	SAD	1BH -0.75	F*1
21	H	11	47	MAD	1BH -1.18	F*1
21	H	12	47	SAN	1BH -0.83 TO-0.70	F*1
21	H	13	47	MAN	1BH -1.31 TO-0.89	F*1

21	H	19	47	MAD	1BH -1.29	F*1
21	H	23	47	MAD	1BH -1.19	F*1
21	H	24	47	MAD	1BH -1.32	F*1
21	H	34	47	SAD	1BH -1.20	F*1
21	H	36	47	MAD	1BH -1.10	F*1
21	H	37	47	SAD	1BH -1.60	F*1
21	H	1	48	SAD	1BH -1.29	F*1
21	H	3	48	SAD	1BH -1.34	F*1
21	H	4	48	MAN	1BH -1.26 TO-0.90	F*1
21	H	5	48	SAD	1BH -1.36	F*1
21	H	6	48	SAN	1BH -1.24 TO-1.12	F*1
21	H	9	48	SAD	1BH -1.36	F*1
21	H	11	48	MAD	1BH -1.41	F*1
21	H	12	48	MAD	1BH -1.31	F*1
21	H	16	48	SAD	1BH -0.89	F*1
21	H	18	48	SAI	1BH -0.52 TO-0.32	F*1
21	H	22	48	MAD	1BH -1.15	F*1
21	H	28	48	SAD	1BH -0.92	F*1
21	H	1	49	MAD	1BH -0.91	F*1
21	H	4	49	MAD	1BH -1.39	F*1
21	H	7	49	MAD	1BH -1.39	F*1
21	H	11	49	MAD	1BH -1.36	F*1
21	H	12	49	MAD	1BH -1.45	F*1
21	H	13	49	MAN	1BH -1.31 TO-1.01	F*1
21	H	14	49	SAN	1BH -0.68 TO-0.45	F*1
21	H	23	49	SAD	1BH -0.88	F*1
21	H	24	49	SAD	1BH -0.87	F*1
21	H	25	49	MAD	1BH -0.88	F*1
21	H	29	49	MAD	1BH -1.26	F*1
21	H	31	49	SAD	1BH -1.26	F*1
21	H	2	50	MAN	1BH -1.43 TO-0.83	F*1
21	H	3	50	SAD	1BH -0.90	F*1
21	H	4	50	MAN	1BH -1.25 TO-0.95	F*1
21	H	5	50	MAN	1BH -1.32 TO-1.02	F*1
21	H	7	50	MAN	1BH -1.09 TO-0.75	F*1
21	H	8	50	MAD	1BH -0.93	F*1
21	H	10	50	MAN	1BH -1.21 TO-1.13	F*1
21	H	12	50	MAN	1BH -0.51 TO-0.30	F*1
21	H	18	50	MAD	1BH -1.21	F*1
21	H	19	50	MAD	1BH -0.90	F*1
21	H	21	50	SAD	1BH -1.30	F*1
21	H	24	50	MAI	1BH -0.67 TO-0.38	F*1
21	H	25	50	SAD	1BH -1.26	F*1

21	H	37	50	SAD	1BH -0.90	F*1
21	H	1	51	SAN	1BH -1.18 TO-1.05	F*1
21	H	2	51	SAD	1BH -1.36	F*1
21	H	4	51	MAN	1BH -1.10 TO-1.01	F*1
21	H	5	51	MAN	1BH -1.26 TO-1.03	F*1
21	H	6	51	MAD	1BH -1.27	F*1
21	H	8	51	MAN	1BH -1.30 TO-0.85	F*1
21	H	11	51	SAD	1BH -1.75	F*1
21	H	13	51	SAD	1BH -1.41	F*1
21	H	14	51	SAD	1BH -1.35	F*1
21	H	16	51	MAD	1BH -1.27	F*1
21	H	23	51	MAD	1BH -0.88	F*1
21	H	34	51	MAD	1BH -0.84	F*1
21	H	35	51	SAD	1BH -0.86	F*1
21	H	1	52	SAN	1BH -1.22 TO-1.10	F*1
21	H	2	52	MAN	1BH -1.37 TO-0.85	F*1
21	H	3	52	MAN	1BH -1.30 TO-1.17	F*1
21	H	4	52	SAN	1BH -1.18 TO-1.10	F*1
21	H	5	52	MAD	1BH -1.38	F*1
21	H	7	52	SAD	1BH -1.31	F*1
21	H	9	52	SAD	1BH -1.34	F*1
21	H	10	52	SAD	1BH -1.36	F*1
21	H	11	52	MAD	1BH -1.34	F*1
21	H	14	52	MAN	1BH -1.07 TO-0.46	F*1
21	H	16	52	SAD	1BH -0.88	F*1
21	H	18	52	SAD	1BH -0.90	F*1
21	H	20	52	MAD	1BH -0.89	F*1
21	H	22	52	SAD	1BH -1.27	F*1
21	H	35	52	SAD	1BH -0.90	F*1
21	H	2	53	SAD	1BH -0.93	F*1
21	H	3	53	MAD	1BH -1.40	F*1
21	H	4	53	SAN	1BH -1.19 TO-0.98	F*1
21	H	7	53	MAN	1BH -0.63 TO-0.36	F*1
21	H	10	53	SAN	1BH -1.15 TO-0.98	F*1
21	H	18	53	SAD	1BH -1.10	F*1
21	H	20	53	SAD	1BH -1.30	F*1
21	H	21	53	SAD	1BH -0.95	F*1
21	H	22	53	SAD	1BH -0.85	F*1
21	H	27	53	MAD	1BH -0.88	F*1
21	H	35	53	SAD	1BH -0.84	F*1
21	H	1	54	SAN	1BH -1.30 TO-1.18	F*1
21	H	7	54	MAN	1BH -1.29 TO-1.18	F*1
21	H	10	54	SAD	1BH -0.92	F*1

21	H	14	54	MAD	1BH -1.37	F*1
21	H	17	54	MAD	1BH -1.16	F*1
21	H	18	54	SAD	1BH -1.21	F*1
21	H	19	54	MAN	1BH -1.23 TO-1.16	F*1
21	H	21	54	MAD	1BH -1.10	F*1
21	H	29	54	MAD	1BH -1.32	F*1
21	H	34	54	MAD	1BH -1.29	F*1
21	H	7	55	SAD	1BH -1.58	F*1
21	H	10	55	MAN	1BH -1.28 TO-0.89	F*1
21	H	18	55	MAD	1BH -0.85	F*1
21	H	23	55	MAD	1BH -1.19	F*1
21	H	29	55	SAD	1BH -1.30	F*1
21	H	31	55	SAD	1BH -0.85	F*1
21	H	33	55	SAD	1BH -0.90	F*1
21	H	34	55	SAD	1BH -1.26	F*1
21	H	2	56	SAN	1BH -0.36 TO-0.30	F*1
21	H	4	56	MAD	1BH -1.54	F*1
21	H	6	56	MAN	1BH -1.19 TO-1.05	F*1
21	H	10	56	MAN	1BH -1.29 TO-0.96	F*1
21	H	13	56	SAD	1BH -0.85	F*1
21	H	18	56	SAD	1BH -1.35	F*1
21	H	27	56	SAD	1BH -0.88	F*1
21	H	34	56	MAD	1BH -0.85	F*1
21	H	1	57	SAN	1BH -1.25 TO-1.18	F*1
21	H	2	57	MAD	1BH -1.43	F*1
21	H	4	57	SAD	1BH -1.28	F*1
21	H	6	57	MAN	1BH -1.16 TO-1.04	F*1
21	H	7	57	MAD	1BH -1.36	F*1
21	H	8	57	MAN	1BH -0.65 TO-0.03	F*1
21	H	11	57	MAN	1BH -0.81 TO-0.62	F*1
21	H	13	57	MAN	1BH -1.22 TO-0.76	F*1
21	H	14	57	SAD	1BH -1.30	F*1
21	H	15	57	MAD	1BH -1.37	F*1
21	H	17	57	SAD	1BH -1.30	F*1
21	H	19	57	SAD	1BH -1.28	F*1
21	H	21	57	MAD	1BH -0.87	F*1
21	H	23	57	MAN	1BH -1.18 TO-0.99	F*1
21	H	27	57	SAD	1BH -1.11	F*1
21	H	2	58	SAD	1BH -1.39	F*1
21	H	3	58	SAD	1BH -1.00	F*1
21	H	4	58	MAD	1BH -1.41	F*1
21	H	5	58	MAN	1BH -1.32 TO-1.08	F*1
21	H	11	58	SAD	1BH -1.20	F*1

21	H	14	58	MAN	1BH -1.17 TO-1.10	F*1
21	H	16	58	MAN	1BH -1.29 TO-0.82	F*1
21	H	21	58	MAN	1BH -1.36 TO-1.18	F*1
21	H	1	59	MAD	1BH -1.37	F*1
21	H	3	59	SAD	1BH -1.29	F*1
21	H	8	59	MAN	1BH -1.37 TO-0.99	F*1
21	H	9	59	MAD	1BH -1.39	F*1
21	H	10	59	MAN	1BH -1.17 TO-1.07	F*1
21	H	11	59	MAN	1BH -1.19 TO-1.11	F*1
21	H	13	59	MAN	1BH -1.28 TO-1.01	F*1
21	H	14	59	MAN	1BH -1.33 TO-1.29	F*1
21	H	21	59	SAD	1BH -1.28	F*1
21	H	27	59	SAN	1BH -0.98 TO-0.94	F*1
21	H	28	59	SAD	1BH -1.20	F*1
21	H	3	60	MAN	1BH -1.29 TO-1.21	F*1
21	H	5	60	MAN	1BH -1.33 TO-1.13	F*1
21	H	7	60	SAN	1BH -1.18 TO-1.07	F*1
21	H	11	60	MAN	1BH -1.35 TO-0.98	F*1
21	H	14	60	MAN	1BH -1.28 TO-1.12	F*1
21	H	16	60	MAN	1BH -1.16 TO-1.02	F*1
21	H	24	60	SAD	1BH -0.93	F*1
21	H	25	60	MAN	1BH -0.99 TO-0.95	F*1
21	H	29	60	MAD	1BH -1.27	F*1
21	H	2	61	MAN	1BH -1.32 TO-1.12	F*1
21	H	3	61	MAN	1BH -1.39 TO-1.31	F*1
21	H	4	61	SAD	1BH -1.26	F*1
21	H	5	61	MAN	1BH -1.30 TO-1.27	F*1
21	H	9	61	MAN	1BH -1.20 TO-1.12	F*1
21	H	10	61	MAN	1BH -1.23 TO-1.12	F*1
21	H	13	61	SAD	1BH -0.92	F*1
21	H	17	61	MAN	1BH -1.14 TO-1.01	F*1
21	H	31	61	SVI	1BH -1.53 TO-1.33	F*1
21	H	2	62	MAN	1BH -1.27 TO-1.11	F*1
21	H	5	62	MAN	1BH -1.37 TO-1.27	F*1
21	H	8	62	MAN	1BH -1.28 TO-1.21	F*1
21	H	10	62	MAN	1BH -1.20 TO-1.08	F*1
21	H	12	62	SAN	1BH -1.25 TO-1.11	F*1
21	H	13	62	MAD	1BH -1.34	F*1
21	H	14	62	MAN	1BH -1.28 TO-1.06	F*1
21	H	21	62	SAN	1BH -1.10 TO-1.03	F*1
21	H	25	62	SAN	1BH -1.18 TO-1.07	F*1
21	H	27	62	MAD	1BH -0.83	F*1
21	H	37	62	SAD	1BH -0.90	F*1

21	H	3	63	MAN	1BH -1.30 TO-1.18	F*1
21	H	5	63	MAN	1BH -1.15 TO-1.06	F*1
21	H	7	63	SAD	1BH -1.40	F*1
21	H	8	63	MAN	1BH -1.22 TO-0.95	F*1
21	H	9	63	SAD	1BH -1.34	F*1
21	H	11	63	SAD	1BH -1.39	F*1
21	H	14	63	MAD	1BH -1.37	F*1
21	H	16	63	SAD	1BH -1.33	F*1
21	H	18	63	SAD	1BH -0.89	F*1
21	H	19	63	MAI	1BH -0.49 TO-0.40	F*1
21	H	36	63	SAD	1BH -0.89	F*1
21	H	3	64	SAN	1BH -1.23 TO-1.15	F*1
21	H	4	64	MAN	1BH -1.28 TO-1.14	F*1
21	H	5	64	MAN	1BH -1.41 TO-0.91	F*1
21	H	6	64	MAN	1BH -1.20 TO-1.07	F*1
21	H	7	64	MAN	1BH -1.20 TO-1.12	F*1
21	H	12	64	MAN	1BH -1.15 TO-1.02	F*1
21	H	14	64	MAN	1BH -1.16 TO-1.04	F*1
21	H	17	64	SAN	1BH -1.06 TO-0.91	F*1
21	H	22	64	SAD	1BH -1.35	F*1
21	H	29	64	SAD	1BH -0.80	F*1
21	H	34	64	MAD	1BH -1.22	F*1
21	H	35	64	SAD	1BH -1.28	F*1
21	H	2	65	SAD	1BH -1.42	F*1
21	H	4	65	SAD	1BH -1.40	F*1
21	H	5	65	MAN	1BH -1.20 TO-1.08	F*1
21	H	8	65	SAN	1BH -1.31 TO-1.25	F*1
21	H	12	65	MAN	1BH -1.13 TO-1.00	F*1
21	H	14	65	SAD	1BH -1.19	F*1
21	H	16	65	SAN	1BH -1.13 TO-1.02	F*1
21	H	20	65	SAD	1BH -1.00	F*1
21	H	25	65	SAD	1BH -0.79	F*1
21	H	5	66	MAN	1BH -1.25 TO-1.16	F*1
21	H	7	66	SAD	1BH -1.27	F*1
21	H	14	66	SAD	1BH -1.29	F*1
21	H	16	66	SAN	1BH -2.10 TO-2.07	F*1
21	H	17	66	SAD	1BH -1.40	F*1
21	H	18	66	SAD	1BH -1.36	F*1
21	H	19	66	SAD	1BH -0.82	F*1
21	H	21	66	SAD	1BH -1.24	F*1
21	H	35	66	SAD	1BH -1.35	F*1
21	H	1	67	MAD	1BH -1.31	F*1
21	H	3	67	MAD	1BH -1.36	F*1

21	H	5	67	MAD	1BH -1.35	F*1
21	H	6	67	SAD	1BH -1.33	F*1
21	H	8	67	SAD	1BH -0.86	F*1
21	H	11	67	SAD	1BH -1.34	F*1
21	H	16	67	SAN	1BH -3.21 TO-3.17	F*1
21	H	19	67	SAD	1BH -0.79	F*1
21	H	20	67	SAD	1BH -0.92	F*1
21	H	24	67	MAN	1BH -1.08 TO-1.00	F*1
21	H	25	67	SAN	1BH -3.83 TO-3.66	F*1
21	H	34	67	MAD	1BH -1.41	F*1
21	H	4	68	MAN	1BH -1.44 TO-0.84	F*1
21	H	5	68	MAN	1BH -1.18 TO-1.09	F*1
21	H	7	68	MAN	1BH -1.41 TO-1.13	F*1
21	H	12	68	SAI	1BH -0.48 TO-0.32	F*1
21	H	13	68	MAD	1BH -1.39	F*1
21	H	19	68	SAD	1BH -0.85	F*1
21	H	20	68	SAD	1BH -0.85	F*1
21	H	34	68	MAN	1BH -1.42 TO-1.09	F*1
21	H	4	69	MAD	1BH -1.42	F*1
21	H	5	69	SAD	1BH -1.35	F*1
21	H	8	69	SAD	1BH -1.40	F*1
21	H	11	69	SAN	1BH -1.30 TO-1.12	F*1
21	H	12	69	MAD	1BH -1.33	F*1
21	H	14	69	SAD	1BH -1.34	F*1
21	H	16	69	SAD	1BH -1.35	F*1
21	H	17	69	SAD	1BH -1.30	F*1
21	H	35	69	SAD	1BH -1.32	F*1
21	H	2	70	SAD	1BH -1.23	F*1
21	H	5	70	MAN	1BH -1.09 TO-0.98	F*1
21	H	6	70	SAD	1BH -1.41	F*1
21	H	7	70	SAD	1BH -0.86	F*1
21	H	9	70	MAD	1BH -1.20	F*1
21	H	11	70	MAD	1BH -0.87	F*1
21	H	17	70	MAD	1BH -0.78	F*1
21	H	2	71	MAN	1BH -1.00 TO-0.86	F*1
21	H	3	71	MAN	1BH -1.35 TO-0.94	F*1
21	H	4	71	MAD	1BH -0.96	F*1
21	H	5	71	MAD	1BH -1.41	F*1
21	H	9	71	SAD	1BH -1.46	F*1
21	H	10	71	MAN	1BH -1.16 TO-1.03	F*1
21	H	11	71	MAN	1BH -1.12 TO-1.04	F*1
21	H	16	71	SAD	1BH -0.87	F*1
21	H	22	71	MAD	1BH -0.86	F*1

21	H	4	72	SAD	1BH -1.00	F*1
21	H	5	72	SAD	1BH -1.41	F*1
21	H	8	72	MAN	1BH -1.21 TO-1.11	F*1
21	H	11	72	MAN	1BH -1.27 TO-1.14	F*1
21	H	17	72	SAD	1BH -1.39	F*1
21	H	2	73	SAD	1BH -0.95	F*1
21	H	3	73	MAN	1BH -1.36 TO-1.24	F*1
21	H	5	73	MAN	1BH -1.24 TO-1.15	F*1
21	H	10	73	SAD	1BH -1.48	F*1
21	H	11	73	MAN	1BH -1.23 TO-1.12	F*1
21	H	12	73	MAD	1BH -0.89	F*1
21	H	16	73	MAD	1BH -0.86	F*1
21	H	17	73	MAD	1BH -0.88	F*1
21	H	23	73	SAN	1BH -0.85 TO-0.80	F*1
21	H	3	74	SAN	1BH -1.39 TO-1.07	F*1
21	H	4	74	MAD	1BH -1.43	F*1
21	H	5	74	MAN	1BH -1.34 TO-1.13	F*1
21	H	9	74	MAN	1BH -1.19 TO-1.13	F*1
21	H	11	74	MAN	1BH -1.26 TO-1.13	F*1
21	H	25	74	SAD	1BH -0.85	F*1
21	H	28	74	SAN	1BH -0.97 TO-0.91	F*1
21	H	5	75	MAN	1BH -1.31 TO-1.23	F*1
21	H	8	75	MAD	1BH -0.90	F*1
21	H	7	76	MAD	1BH -1.41	F*1
21	H	9	76	MAD	1BH -1.39	F*1
21	H	18	76	SAD	1BH -0.87	F*1
21	H	3	77	MAD	1BH -0.93	F*1
21	H	6	77	MAD	1BH -1.39	F*1
21	H	7	77	SAN	1BH -1.29 TO-1.21	F*1
21	H	11	77	SAD	1BH -1.44	F*1
21	H	16	77	SAD	1BH -0.87	F*1
21	H	22	77	SAD	1BH -1.16	F*1
21	H	3	78	MAD	1BH -1.53	F*1
21	H	4	78	MAN	1BH -1.08 TO-1.04	F*1
21	H	5	78	MAD	1BH -1.44	F*1
21	H	7	78	MAN	1BH -1.44 TO-1.14	F*1
21	H	9	78	MAD	1BH -1.39	F*1
21	H	11	78	SAN	1BH -1.27 TO-1.16	F*1
21	H	4	79	SAD	1BH -1.37	F*1
21	H	7	79	MAN	1BH -1.36 TO-1.25	F*1
21	H	8	79	SAD	1BH -0.92	F*1
21	H	11	79	SAD	1BH -1.47	F*1
21	H	19	79	MAD	1BH -1.52	F*1

21	H	5	80	SAD	1BH -1.56	F*1
21	H	12	80	SAD	1BH -1.26	F*1
21	H	28	80	SAN	1BH -1.31 TO-1.20	F*1
21	H	1	81	MAD	1BH -0.90	F*1
21	H	11	81	SAD	1BH -1.45	F*1
21	H	1	82	SAD	1BH -1.40	F*1
21	H	7	82	SAD	1BH -1.52	F*1
21	H	9	82	MAD	1BH -0.88	F*1
21	H	12	82	SAD	1BH -1.44	F*1
21	H	2	83	SAN	1BH -0.94 TO-0.80	F*1
21	H	9	83	MAD	1BH -1.52	F*1
21	H	5	84	MAD	1BH -1.00	F*1
21	H	12	84	MAD	1BH -0.90	F*1
21	H	18	86	SAN	1BH -1.33 TO-1.19	F*1
21	H	4	17	SAD	2BH -3.11	F*2
21	H	3	22	SAN	2BH -0.72 TO-0.61	F*2
21	H	4	25	SAN	2BH -0.71 TO-0.30	F*2
21	H	19	25	MAD	2BH -3.03	F*2
21	H	12	27	MAI	2BH -0.62 TO-0.41	F*2
21	H	30	27	SAI	2BH -0.84 TO-0.75	F*2
21	H	13	29	SAN	2BH -3.31 TO-3.24	F*2
21	H	9	30	MAN	2BH -2.97 TO-2.87	F*2
21	H	5	36	MAN	2BH -2.49 TO-1.98	F*2
21	H	14	36	MAD	2BH -3.00	F*2
21	H	14	40	MAN	2BH -2.86 TO-1.38	F*2
21	H	10	44	MAN	2BH -3.63 TO-3.48	F*2
21	H	12	46	MAN	2BH -2.67 TO-1.82	F*2
21	H	20	46	SAD	2BH -1.50	F*2
21	H	6	47	SAN	2BH -2.89 TO-1.89	F*2
21	H	7	47	MAN	2BH -3.18 TO-2.37	F*2
21	H	18	47	MAD	2BH -3.12	F*2
21	H	10	48	SAN	2BH -2.98 TO-2.92	F*2
21	H	8	49	SAN	2BH -2.70 TO-1.73	F*2
21	H	14	50	SAN	2BH -1.97 TO-1.82	F*2
21	H	12	52	SAD	2BH -1.81	F*2
21	H	4	55	SAN	2BH -0.71 TO-0.62	F*2
21	H	11	55	SAN	2BH -0.64 TO-0.58	F*2
21	H	7	56	SAI	2BH -0.68 TO-0.45	F*2
21	H	11	56	SAI	2BH -0.75 TO-0.64	F*2
21	H	16	56	MAN	2BH -2.01 TO-1.72	F*2
21	H	2	60	MAN	2BH -3.27 TO-3.04	F*2
21	H	4	60	MAN	2BH -3.23 TO-3.10	F*2
21	H	7	61	SAN	2BH -0.80 TO-0.52	F*2

21	H	4	62	SAI	2BH -0.57 TO-0.42	F*2
21	H	8	64	SAN	2BH -0.71 TO-0.54	F*2
21	H	10	66	SAN	2BH -0.64 TO-0.55	F*2
21	H	7	67	SAN	2BH -0.72 TO-0.62	F*2
21	H	14	67	SAD	2BH -3.02	F*2
					Total Count, F*0	111
					Total Count, F*1	717
					Total Count, F*2	34

F*0 = F* TUBE WITHOUT ADDITIONAL ROLL EXPANSION
F*1 = F* TUBE WITH ONE ADDITIONAL ROLL EXPANSION
F*2 = F* TUBE WITH TWO ADDITIONAL ROLL EXPANSIONS
MAD = MULTIPLE AXIAL INDICATION, not detectable this year
SAD = SINGLE AXIAL INDICATION , not detectable this year
MAI = MULTIPLE AXIAL INDICATION
SAI = SINGLE AXIAL INDICATION
MAN = MULTIPLE AXIAL INDICATION, not changed this year
SAN = SINGLE AXIAL INDICATION , not changed this year
TRH = TOP OF ROLL HOT LEG
1BH = BOTTOM OF ADDITIONAL HARD ROLL 1
2BH = BOTTOM OF ADDITIONAL HARD ROLL 2

22 Steam Generator F* Tubes, May, 2000						
GEN	LEG	ROW	COL	INDICATION	LOCATION & EXTENT	STATUS
22	H	4	1	SAI	TRH -2.13 TO-2.06	F*0
22	H	1	7	SAN	TRH -2.41 TO-2.27	F*0
22	H	35	20	SAI	TRH -2.44 TO-2.40	F*0
22	H	1	27	SAN	TRH -2.44 TO-2.37	F*0
22	H	2	29	SAN	TRH -2.23 TO-2.17	F*0
22	H	1	32	MAN	TRH -2.27 TO-2.17	F*0
22	H	1	33	MAN	TRH -2.28 TO-2.15	F*0
22	H	1	34	SAN	TRH -2.34 TO-2.17	F*0
22	H	42	35	SAN	TRH -2.41 TO-2.30	F*0
22	H	1	36	SAN	TRH -2.34 TO-2.27	F*0
22	H	1	37	MAN	TRH -2.35 TO-2.21	F*0
22	H	1	41	MAN	TRH -2.31 TO-2.14	F*0
22	H	2	42	SAN	TRH -2.28 TO-2.15	F*0
22	H	1	43	MAN	TRH -2.32 TO-2.15	F*0
22	H	2	45	SAN	TRH -2.15 TO-2.11	F*0
22	H	9	48	SAN	TRH -2.40 TO-2.34	F*0
22	H	10	48	SAN	TRH -2.39 TO-2.30	F*0
22	H	37	48	SAN	TRH -2.30 TO-2.23	F*0
22	H	5	49	SAN	TRH -2.68 TO-2.58	F*0
22	H	7	49	SAN	TRH -2.57 TO-2.48	F*0
22	H	7	50	SAN	TRH -2.59 TO-2.46	F*0
22	H	10	50	SAN	TRH -2.63 TO-2.56	F*0
22	H	1	51	MAN	TRH -2.85 TO-2.64	F*0
22	H	3	51	SAN	TRH -2.70 TO-2.60	F*0
22	H	4	51	MAN	TRH -2.60 TO-2.50	F*0
22	H	7	51	SAN	TRH -2.55 TO-2.45	F*0
22	H	9	51	SAN	TRH -2.63 TO-2.53	F*0
22	H	1	52	MAN	TRH -2.94 TO-2.71	F*0
22	H	10	52	SAN	TRH -2.62 TO-2.51	F*0
22	H	1	53	MAN	TRH -2.71 TO-2.56	F*0
22	H	7	53	SAN	TRH -2.45 TO-2.39	F*0
22	H	37	53	SAN	TRH -2.35 TO-2.24	F*0
22	H	5	54	MAN	TRH -2.47 TO-2.36	F*0
22	H	34	55	MAI	TRH -2.39 TO-2.30	F*0
22	H	1	56	MAN	TRH -2.58 TO-2.48	F*0
22	H	2	56	SAN	TRH -2.55 TO-2.45	F*0
22	H	34	56	MAI	TRH -2.35 TO-2.26	F*0
22	H	37	57	SAN	TRH -2.46 TO-2.28	F*0
22	H	34	58	MAN	TRH -2.32 TO-2.05	F*0
22	H	26	59	MAN	TRH -2.30 TO-2.23	F*0

22	H	34	60	MAN	TRH	-2.35	TO-2.29	F*0
22	H	11	61	SAI	TRH	-2.37	TO-2.27	F*0
22	H	1	62	MAN	TRH	-2.54	TO-2.47	F*0
22	H	34	63	MAN	TRH	-2.38	TO-2.26	F*0
22	H	5	64	SAN	TRH	-2.37	TO-2.31	F*0
22	H	7	65	SAN	TRH	-2.42	TO-2.25	F*0
22	H	8	66	SAI	TRH	-2.28	TO-2.21	F*0
22	H	37	67	MAN	TRH	-2.31	TO-2.18	F*0
22	H	8	68	SAN	TRH	-2.31	TO-2.17	F*0
22	H	34	68	MAN	TRH	-2.38	TO-2.20	F*0
22	H	1	69	MAN	TRH	-2.47	TO-2.31	F*0
22	H	1	70	MAN	TRH	-2.54	TO-2.30	F*0
22	H	37	70	SAN	TRH	-2.21	TO-2.12	F*0
22	H	11	71	SAI	TRH	-2.49	TO-2.39	F*0
22	H	24	71	MAN	TRH	-2.27	TO-2.19	F*0
22	H	1	72	MAN	TRH	-2.57	TO-2.41	F*0
22	H	5	72	SAI	TRH	-2.21	TO-2.15	F*0
22	H	37	72	SAN	TRH	-2.24	TO-2.14	F*0
22	H	1	73	MAN	TRH	-2.42	TO-2.23	F*0
22	H	1	74	MAN	TRH	-2.41	TO-2.21	F*0
22	H	5	74	SAN	TRH	-2.35	TO-2.19	F*0
22	H	6	74	SAN	TRH	-2.37	TO-2.27	F*0
22	H	1	75	MAN	TRH	-2.62	TO-2.24	F*0
22	H	4	75	SAI	TRH	-2.48	TO-2.41	F*0
22	H	1	76	MAN	TRH	-2.53	TO-2.24	F*0
22	H	1	77	MAN	TRH	-2.47	TO-2.29	F*0
22	H	4	77	SAN	TRH	-2.44	TO-2.34	F*0
22	H	1	78	SAN	TRH	-2.50	TO-2.29	F*0
22	H	4	78	SAI	TRH	-2.46	TO-2.38	F*0
22	H	1	79	MAN	TRH	-2.59	TO-2.44	F*0
22	H	3	79	SAI	TRH	-2.38	TO-2.32	F*0
22	H	1	80	MAN	TRH	-2.84	TO-2.45	F*0
22	H	4	80	SAI	TRH	-2.39	TO-2.32	F*0
22	H	5	80	SAN	TRH	-2.64	TO-2.52	F*0
22	H	1	81	MAN	TRH	-2.68	TO-2.55	F*0
22	H	1	82	MAN	TRH	-2.70	TO-2.52	F*0
22	H	5	82	SAI	TRH	-2.59	TO-2.52	F*0
22	H	1	83	SAN	TRH	-2.80	TO-2.55	F*0
22	H	1	84	SAN	TRH	-2.70	TO-2.54	F*0
22	H	1	85	SAN	TRH	-2.81	TO-2.52	F*0
22	H	6	85	SAN	TRH	-2.34	TO-2.24	F*0
22	H	1	87	SAI	TRH	-2.85	TO-2.68	F*0
22	H	4	88	SAI	TRH	-2.37	TO-2.30	F*0

22	H	6	91	SAI	TRH -2.43 TO-2.34	F*0
22	H	6	94	MAN	TRH -2.44 TO-2.23	F*0
22	H	15	7	SAD	1BH -1.05	F*1
22	H	1	10	SAN	1BH -2.44 TO-2.31	F*1
22	H	4	14	SAN	1BH -2.32 TO-2.28	F*1
22	H	18	14	SAN	1BH -1.20 TO-1.15	F*1
22	H	2	15	SAN	1BH -2.25 TO-2.21	F*1
22	H	14	15	SAD	1BH -1.06	F*1
22	H	24	15	MAN	1BH -1.54 TO-1.24	F*1
22	H	25	15	SAD	1BH -1.49	F*1
22	H	25	16	SAD	1BH -1.07	F*1
22	H	1	17	MAN	1BH -2.40 TO-2.20	F*1
22	H	25	17	SAD	1BH -1.40	F*1
22	H	1	18	MAN	1BH -2.30 TO-2.16	F*1
22	H	4	19	SAN	1BH -2.39 TO-2.31	F*1
22	H	15	19	MAD	1BH -1.08	F*1
22	H	21	19	SVI	1BH -2.51 TO-2.31	F*1
22	H	1	20	MAN	1BH -2.29 TO-2.11	F*1
22	H	3	20	SAN	1BH -1.95 TO-1.87	F*1
22	H	14	20	SAD	1BH -0.91	F*1
22	H	1	21	MAN	1BH -2.19 TO-2.05	F*1
22	H	4	21	SAN	1BH -2.20 TO-2.10	F*1
22	H	31	21	SAD	1BH -1.40	F*1
22	H	18	22	SAN	1BH -1.39 TO-1.31	F*1
22	H	25	22	MAN	1BH -1.34 TO-1.26	F*1
22	H	28	22	SAD	1BH -1.47	F*1
22	H	33	22	SAD	1BH -1.28	F*1
22	H	16	23	SAD	1BH -1.27	F*1
22	H	22	23	SAN	1BH -1.51 TO-1.42	F*1
22	H	32	23	SAD	1BH -1.24	F*1
22	H	15	24	MAD	1BH -0.90	F*1
22	H	27	24	MAD	1BH -1.57	F*1
22	H	28	24	SAN	1BH -1.44 TO-1.33	F*1
22	H	34	24	SAD	1BH -1.02	F*1
22	H	20	25	MAD	1BH -0.96	F*1
22	H	21	25	SAD	1BH -1.51	F*1
22	H	23	25	MAN	1BH -1.48 TO-1.34	F*1
22	H	26	25	SAN	1BH -1.17 TO-1.07	F*1
22	H	31	25	SAD	1BH -1.00	F*1
22	H	32	25	SAD	1BH -1.40	F*1
22	H	33	25	SAD	1BH -1.00	F*1
22	H	1	26	SAN	1BH -0.48 TO-0.32	F*1
22	H	18	26	SAD	1BH -1.27	F*1

22	H	19	26	MAD	1BH -1.67	F*1
22	H	22	26	SAD	1BH -1.56	F*1
22	H	28	26	SAN	1BH -0.95 TO-0.91	F*1
22	H	33	26	SAD	1BH -1.33	F*1
22	H	13	27	MAD	1BH -1.29	F*1
22	H	14	27	SAD	1BH -0.95	F*1
22	H	15	27	SAD	1BH -1.59	F*1
22	H	20	27	SAD	1BH -1.52	F*1
22	H	24	27	SAD	1BH -1.35	F*1
22	H	25	27	SAD	1BH -1.22	F*1
22	H	20	28	SAD	1BH -1.21	F*1
22	H	1	29	MAD	1BH -1.35	F*1
22	H	19	29	SAD	1BH -1.72	F*1
22	H	24	29	SAD	1BH -1.57	F*1
22	H	29	29	MAI	1BH -0.76 TO-0.06	F*1
22	H	32	29	SAD	1BH -1.52	F*1
22	H	5	30	SAN	1BH -0.35 TO-0.15	F*1
22	H	32	30	MAD	1BH -1.40	F*1
22	H	35	30	SAD	1BH -1.40	F*1
22	H	3	31	MAN	1BH -1.55 TO-1.35	F*1
22	H	27	31	SAD	1BH -1.25	F*1
22	H	32	31	SAD	1BH -1.40	F*1
22	H	20	32	MAN	1BH -1.40 TO-1.28	F*1
22	H	21	32	SAD	1BH -1.36	F*1
22	H	28	32	SAD	1BH -1.17	F*1
22	H	31	32	SAN	1BH -1.52 TO-1.43	F*1
22	H	32	32	SAD	1BH -1.44	F*1
22	H	25	33	SAD	1BH -0.90	F*1
22	H	32	33	MAD	1BH -1.49	F*1
22	H	33	33	SAD	1BH -1.00	F*1
22	H	28	34	MAN	1BH -1.51 TO-1.41	F*1
22	H	33	34	SAD	1BH -0.97	F*1
22	H	12	35	MAD	1BH -1.21	F*1
22	H	13	35	MAN	1BH -1.49 TO-1.26	F*1
22	H	22	35	SAD	1BH -0.90	F*1
22	H	28	35	MAN	1BH -1.63 TO-1.40	F*1
22	H	29	35	SAD	1BH -1.27	F*1
22	H	20	36	MAD	1BH -1.47	F*1
22	H	23	36	MAN	1BH -1.47 TO-1.25	F*1
22	H	27	36	SAD	1BH -1.48	F*1
22	H	29	36	SAD	1BH -1.22	F*1
22	H	32	36	SAI	1BH -0.76 TO-0.45	F*1
22	H	2	37	SAD	1BH -1.25	F*1

22	H	20	37	SAD	1BH -1.48	F*1
22	H	23	37	SAD	1BH -1.51	F*1
22	H	24	37	SAN	1BH -1.55 TO-1.48	F*1
22	H	30	37	SAD	1BH -1.29	F*1
22	H	33	37	MAD	1BH -1.44	F*1
22	H	37	37	SAD	1BH -1.40	F*1
22	H	14	38	MAN	1BH -1.38 TO-1.31	F*1
22	H	19	38	MAN	1BH -1.37 TO-1.21	F*1
22	H	20	38	MAN	1BH -1.31 TO-1.18	F*1
22	H	37	38	SAD	1BH -1.37	F*1
22	H	33	39	SAD	1BH -1.31	F*1
22	H	1	40	MAD	1BH -1.34	F*1
22	H	12	40	SAN	1BH -1.05 TO-1.01	F*1
22	H	21	40	SAD	1BH -1.36	F*1
22	H	22	40	MAD	1BH -0.95	F*1
22	H	23	40	SAN	1BH -1.00 TO-0.98	F*1
22	H	33	40	SAD	1BH -1.00	F*1
22	H	14	41	MAN	1BH -1.40 TO-1.23	F*1
22	H	19	41	SAD	1BH -1.54	F*1
22	H	21	41	SAD	1BH -1.58	F*1
22	H	22	41	SAD	1BH -1.47	F*1
22	H	27	41	MAN	1BH -1.51 TO-1.39	F*1
22	H	28	41	SAD	1BH -0.92	F*1
22	H	29	41	SAD	1BH -1.28	F*1
22	H	33	41	MAD	1BH -1.41	F*1
22	H	37	41	MAD	1BH -1.45	F*1
22	H	1	42	SAD	1BH -1.35	F*1
22	H	13	42	SAD	1BH -1.28	F*1
22	H	21	42	MAD	1BH -0.95	F*1
22	H	22	42	SAD	1BH -1.49	F*1
22	H	24	42	SAD	1BH -1.71	F*1
22	H	29	42	SAD	1BH -1.50	F*1
22	H	33	42	MAN	1BH -1.50 TO-1.36	F*1
22	H	22	43	MAD	1BH -1.44	F*1
22	H	33	43	MAN	1BH -1.45 TO-1.31	F*1
22	H	37	43	SAN	1BH -0.39 TO-0.27	F*1
22	H	13	44	MAN	1BH -1.30 TO-1.17	F*1
22	H	14	44	SAD	1BH -1.58	F*1
22	H	17	44	SAN	1BH -1.22 TO-1.12	F*1
22	H	18	44	SAD	1BH -0.93	F*1
22	H	27	44	SAD	1BH -1.55	F*1
22	H	30	44	SAD	1BH -1.50	F*1
22	H	33	44	SAD	1BH -1.36	F*1

22	H	1	45	MAN	1BH -0.79 TO-0.74	F*1
22	H	13	45	SAN	1BH -1.36 TO-1.20	F*1
22	H	15	45	MAD	1BH -1.52	F*1
22	H	19	45	MAD	1BH -0.90	F*1
22	H	28	45	MAD	1BH -1.57	F*1
22	H	12	46	SAD	1BH -1.38	F*1
22	H	17	46	MAN	1BH -1.33 TO-1.23	F*1
22	H	19	46	SAN	1BH -1.48 TO-1.39	F*1
22	H	26	46	MAN	1BH -1.52 TO-1.23	F*1
22	H	12	47	SAD	1BH -1.43	F*1
22	H	20	47	SAD	1BH -0.93	F*1
22	H	28	47	SAD	1BH -0.99	F*1
22	H	2	48	MAN	1BH -1.16 TO-1.06	F*1
22	H	3	48	MAN	1BH -1.17	F*1
22	H	21	48	SAN	1BH -1.06 TO-0.97	F*1
22	H	22	48	SAD	1BH -1.52	F*1
22	H	23	48	MAN	1BH -1.49 TO-1.21	F*1
22	H	28	48	MAN	1BH -1.59 TO-1.26	F*1
22	H	29	48	SAD	1BH -1.59	F*1
22	H	1	49	SAN	1BH -0.93 TO-0.87	F*1
22	H	4	49	SAD	1BH -1.28	F*1
22	H	10	49	SAD	1BH -1.35	F*1
22	H	11	49	MAD	1BH -1.36	F*1
22	H	12	49	SAN	1BH -0.26 TO-0.03	F*1
22	H	13	49	SAD	1BH -1.53	F*1
22	H	14	49	MAN	1BH -1.32 TO-0.96	F*1
22	H	18	49	MAN	1BH -1.27 TO-1.12	F*1
22	H	21	49	SAD	1BH -0.86	F*1
22	H	23	49	MAN	1BH -1.37 TO-1.07	F*1
22	H	28	49	SAN	1BH -1.45 TO-1.35	F*1
22	H	32	49	MAN	1BH -1.58 TO-1.12	F*1
22	H	41	49	SAN	1BH -1.28 TO-1.14	F*1
22	H	1	50	SAD	1BH -1.44	F*1
22	H	9	50	MAN	1BH -1.08 TO-1.05	F*1
22	H	18	50	MAD	1BH -0.94	F*1
22	H	22	50	SAD	1BH -0.99	F*1
22	H	23	50	MAN	1BH -1.02 TO-0.88	F*1
22	H	24	50	MAN	1BH -1.48 TO-1.38	F*1
22	H	25	50	SAN	1BH -2.38 TO-2.25	F*1
22	H	27	50	MAD	1BH -1.51	F*1
22	H	28	50	SAN	1BH -1.13 TO-1.03	F*1
22	H	29	50	SAD	1BH -1.60	F*1
22	H	30	50	SAD	1BH -1.22	F*1

22	H	32	50	MAN	1BH -1.43 TO-1.29	F*1
22	H	33	50	SAN	1BH -1.45 TO-1.34	F*1
22	H	34	50	SAD	1BH -1.55	F*1
22	H	35	50	SAN	1BH -1.60 TO-1.56	F*1
22	H	12	51	SAD	1BH -1.17	F*1
22	H	18	51	MAD	1BH -1.37	F*1
22	H	21	51	SAD	1BH -1.33	F*1
22	H	28	51	SAD	1BH -1.47	F*1
22	H	32	51	SAD	1BH -1.45 TO-1.32	F*1
22	H	3	52	SAD	1BH -1.35	F*1
22	H	7	52	SAD	1BH -1.03	F*1
22	H	9	52	SAD	1BH -1.15	F*1
22	H	28	52	SAD	1BH -1.44 TO-1.32	F*1
22	H	33	52	SAN	1BH -1.50 TO-1.37	F*1
22	H	13	53	MAN	1BH -1.30 TO-0.96	F*1
22	H	17	53	MAD	1BH -1.33	F*1
22	H	18	53	SAD	1BH -1.33	F*1
22	H	24	53	SAD	1BH -1.46	F*1
22	H	32	53	SAD	1BH -1.35	F*1
22	H	33	53	SAD	1BH -1.34	F*1
22	H	1	54	MAN	1BH -1.20 TO-1.00	F*1
22	H	15	54	SAD	1BH -1.07	F*1
22	H	16	54	SAI	1BH -0.62 TO-0.16	F*1
22	H	18	54	MAD	1BH -1.41	F*1
22	H	23	54	SAN	1BH -1.57 TO-1.49	F*1
22	H	24	54	SAD	1BH -1.46	F*1
22	H	25	54	SAD	1BH -1.33	F*1
22	H	27	54	SAD	1BH -1.45	F*1
22	H	34	54	SAN	1BH -1.00 TO-0.90	F*1
22	H	10	55	MAN	1BH -1.16 TO-1.03	F*1
22	H	13	55	MAN	1BH -1.44 TO-0.72	F*1
22	H	21	55	MAD	1BH -1.41	F*1
22	H	22	55	SAN	1BH -1.43 TO-1.30	F*1
22	H	23	55	SAN	1BH -1.43 TO-1.35	F*1
22	H	28	55	SVI	1BH -2.34 TO-2.17	F*1
22	H	29	55	SAN	1BH -1.40 TO-1.33	F*1
22	H	32	55	SAD	1BH -1.30	F*1
22	H	33	55	SAN	1BH -1.50 TO-1.33	F*1
22	H	4	56	MAN	1BH -1.43 TO-1.01	F*1
22	H	6	56	SAD	1BH -1.26	F*1
22	H	7	56	SAD	1BH -1.36	F*1
22	H	11	56	MAN	1BH -1.19	F*1
22	H	12	56	MAD	1BH -1.24	F*1

22	H	13	56	SAD	1BH -1.41	F*1
22	H	15	56	MAD	1BH -1.25	F*1
22	H	27	56	SAD	1BH -1.60	F*1
22	H	28	56	SAD	1BH -1.55	F*1
22	H	29	56	SAD	1BH -1.50	F*1
22	H	7	57	SAN	1BH -1.23 TO-1.13	F*1
22	H	10	57	SAD	1BH -1.24	F*1
22	H	13	57	MAD	1BH -1.31	F*1
22	H	15	57	SAD	1BH -1.06	F*1
22	H	18	57	MAD	1BH -0.92	F*1
22	H	21	57	MAN	1BH -1.15 TO-0.96	F*1
22	H	25	57	SAD	1BH -1.44	F*1
22	H	27	57	SAD	1BH -1.37	F*1
22	H	28	57	MAD	1BH -1.41	F*1
22	H	34	57	SAD	1BH -1.45	F*1
22	H	1	58	SAD	1BH -1.30	F*1
22	H	3	58	SAD	1BH -1.27	F*1
22	H	14	58	SAD	1BH -1.31	F*1
22	H	18	58	MAD	1BH -1.31	F*1
22	H	23	58	SAN	1BH -1.52 TO-1.25	F*1
22	H	37	58	SAN	1BH -1.52 TO-1.33	F*1
22	H	5	59	SAD	1BH -1.42	F*1
22	H	9	59	SAD	1BH -1.30	F*1
22	H	15	59	MAD	1BH -1.34	F*1
22	H	16	59	MAD	1BH -1.16	F*1
22	H	25	59	SAD	1BH -1.40	F*1
22	H	27	59	SAD	1BH -1.41	F*1
22	H	28	59	MAN	1BH -1.48 TO-1.33	F*1
22	H	30	59	MAN	1BH -1.49 TO-1.36	F*1
22	H	34	59	SAD	1BH -1.39	F*1
22	H	5	60	SAD	1BH -1.35	F*1
22	H	6	60	SAD	1BH -1.34	F*1
22	H	7	60	SAD	1BH -1.35	F*1
22	H	32	60	SAN	1BH -1.40 TO-1.30	F*1
22	H	37	60	SAD	1BH -1.45	F*1
22	H	7	61	MAD	1BH -1.26	F*1
22	H	12	61	SAD	1BH -1.29	F*1
22	H	20	61	SAD	1BH -1.35	F*1
22	H	22	61	MAN	1BH -1.43 TO-1.32	F*1
22	H	23	61	SAN	1BH -1.40 TO-1.20	F*1
22	H	27	61	MAI	1BH -0.46 TO-0.22	F*1
22	H	5	62	MAD	1BH -1.62	F*1
22	H	7	62	SAD	1BH -1.23	F*1

22	H	10	62	SAD	1BH -1.38	F*1
22	H	18	62	SAD	1BH -1.34	F*1
22	H	19	62	MAN	1BH -1.34 TO-1.10	F*1
22	H	23	62	MAD	1BH -1.55	F*1
22	H	24	62	SAN	1BH -1.39 TO-1.25	F*1
22	H	25	62	SAD	1BH -1.45	F*1
22	H	34	62	SAD	1BH -1.46	F*1
22	H	37	62	SAN	1BH -1.52 TO-1.40	F*1
22	H	1	63	SAD	1BH -1.24	F*1
22	H	11	63	SAD	1BH -1.30	F*1
22	H	23	63	SAD	1BH -1.16	F*1
22	H	24	63	SAD	1BH -1.38	F*1
22	H	37	63	SAN	1BH -1.49 TO-1.38	F*1
22	H	1	64	SAD	1BH -1.21	F*1
22	H	2	64	SAD	1BH -1.26	F*1
22	H	7	64	SAN	1BH -1.68 TO-1.48	F*1
22	H	9	64	SAN	1BH -1.18 TO-1.09	F*1
22	H	32	64	MAD	1BH -1.50	F*1
22	H	34	64	MAN	1BH -1.55 TO-1.42	F*1
22	H	37	64	SAD	1BH -1.18	F*1
22	H	6	65	MAD	1BH -1.27	F*1
22	H	8	65	SAD	1BH -1.18	F*1
22	H	10	65	MAN	1BH -1.21 TO-1.14	F*1
22	H	11	65	SAD	1BH -1.33	F*1
22	H	12	65	MAN	1BH -1.21 TO-1.15	F*1
22	H	15	65	MAN	1BH -1.12 TO-1.02	F*1
22	H	19	65	SAD	1BH -1.29	F*1
22	H	24	65	MAN	1BH -1.46 TO-1.33	F*1
22	H	27	65	SAN	1BH -1.53 TO-1.34	F*1
22	H	34	65	SAD	1BH -1.23	F*1
22	H	37	65	SAD	1BH -1.28	F*1
22	H	9	66	SAD	1BH -1.15	F*1
22	H	11	66	MAN	1BH -1.30 TO-1.11	F*1
22	H	12	66	MAD	1BH -1.50	F*1
22	H	13	66	SAD	1BH -1.28	F*1
22	H	21	66	MAD	1BH -1.03	F*1
22	H	24	66	SAN	1BH -1.56 TO-1.50	F*1
22	H	37	66	SAN	1BH -1.34 TO-1.29	F*1
22	H	7	67	SAD	1BH -1.31	F*1
22	H	9	67	MAN	1BH -1.23 TO-1.06	F*1
22	H	16	67	SAN	1BH -1.08 TO-1.02	F*1
22	H	24	67	MAN	1BH -1.42 TO-1.30	F*1
22	H	27	67	MAN	1BH -1.52 TO-1.33	F*1

22	H	31	67	SAD	1BH -1.00	F*1
22	H	32	67	SAD	1BH -1.22	F*1
22	H	34	67	SAD	1BH -1.48	F*1
22	H	10	68	SAD	1BH -1.24	F*1
22	H	13	68	SAD	1BH -1.17	F*1
22	H	21	68	MAD	1BH -1.33	F*1
22	H	24	68	MAN	1BH -1.43 TO-1.35	F*1
22	H	27	68	SAN	1BH -1.45 TO-1.35	F*1
22	H	31	68	SAD	1BH -0.90	F*1
22	H	32	68	SAD	1BH -1.32	F*1
22	H	37	68	MAN	1BH -1.52 TO-1.39	F*1
22	H	15	69	MAD	1BH -0.94	F*1
22	H	16	69	MAD	1BH -1.30	F*1
22	H	24	69	MAN	1BH -1.52 TO-1.42	F*1
22	H	25	69	MAN	1BH -1.46 TO-1.36	F*1
22	H	27	69	SAD	1BH -1.51	F*1
22	H	31	69	SAD	1BH -1.46	F*1
22	H	37	69	SAD	1BH -1.43	F*1
22	H	11	70	SAD	1BH -0.95	F*1
22	H	22	70	SAD	1BH -1.19	F*1
22	H	23	70	SAD	1BH -1.14	F*1
22	H	27	70	SAN	1BH -1.50 TO-1.41	F*1
22	H	31	70	SAN	1BH -1.26 TO-1.16	F*1
22	H	12	71	MAD	1BH -1.11	F*1
22	H	14	71	SAD	1BH -1.36	F*1
22	H	17	71	MAD	1BH -1.35	F*1
22	H	18	71	SAD	1BH -1.28	F*1
22	H	20	71	SAD	1BH -1.29	F*1
22	H	22	71	MAD	1BH -1.24	F*1
22	H	23	71	MAD	1BH -1.42	F*1
22	H	27	71	SAD	1BH -0.90	F*1
22	H	8	72	SAD	1BH -1.28	F*1
22	H	9	72	MAD	1BH -1.20	F*1
22	H	12	72	MAN	1BH -1.30 TO-1.14	F*1
22	H	13	72	SAD	1BH -1.37	F*1
22	H	16	72	SAD	1BH -1.37	F*1
22	H	24	72	SAI	1BH -0.30 TO-0.10	F*1
22	H	27	72	MAD	1BH -1.32	F*1
22	H	9	73	SAD	1BH -1.27	F*1
22	H	12	73	MAN	1BH -1.21 TO-1.11	F*1
22	H	14	73	MAD	1BH -1.13	F*1
22	H	15	73	MAN	1BH -1.08 TO-1.02	F*1
22	H	17	73	MAD	1BH -1.30	F*1

22	H	18	73	SAD	1BH -1.30	F*1
22	H	19	73	SAD	1BH -1.22	F*1
22	H	25	73	SAD	1BH -1.49	F*1
22	H	12	74	SAD	1BH -1.34	F*1
22	H	14	74	MAD	1BH -1.34	F*1
22	H	15	74	MAD	1BH -1.29	F*1
22	H	17	74	MAI	1BH -0.94 TO-0.31	F*1
22	H	18	74	SAD	1BH -0.94	F*1
22	H	24	74	SAD	1BH -1.54	F*1
22	H	10	75	MAD	1BH -1.24	F*1
22	H	12	75	MAD	1BH -1.22	F*1
22	H	13	75	SAN	1BH -1.10 TO-1.04	F*1
22	H	14	75	MAD	1BH -1.33	F*1
22	H	15	75	MAD	1BH -1.30	F*1
22	H	27	75	MAD	1BH -0.90	F*1
22	H	8	76	SAD	1BH -1.29	F*1
22	H	11	76	SAN	1BH -1.27 TO-1.08	F*1
22	H	13	76	SAD	1BH -1.48	F*1
22	H	17	76	MAD	1BH -1.13	F*1
22	H	22	76	SAN	1BH -0.71 TO-0.16	F*1
22	H	26	76	MAD	1BH -1.50	F*1
22	H	8	77	SAD	1BH -1.26	F*1
22	H	12	77	MAD	1BH -1.49	F*1
22	H	13	77	SAN	1BH -1.10 TO-1.07	F*1
22	H	17	77	MAD	1BH -1.10	F*1
22	H	22	77	SAN	1BH -0.90 TO-0.73	F*1
22	H	25	77	SAD	1BH -0.94	F*1
22	H	12	78	SAD	1BH -0.95	F*1
22	H	18	78	SAD	1BH -1.38	F*1
22	H	22	78	SAD	1BH -1.53	F*1
22	H	26	78	MAN	1BH -1.42 TO-1.32	F*1
22	H	12	79	SAI	1BH -0.55 TO-0.38	F*1
22	H	13	79	MAN	1BH -1.12 TO-1.07	F*1
22	H	14	79	MAN	1BH -1.04 TO-0.98	F*1
22	H	15	79	MAD	1BH -1.29	F*1
22	H	22	79	SAD	1BH -1.31	F*1
22	H	25	79	SAD	1BH -1.36	F*1
22	H	26	79	SAD	1BH -1.49	F*1
22	H	9	80	MAN	1BH -1.15 TO-1.09	F*1
22	H	10	80	MAD	1BH -1.36	F*1
22	H	12	80	MAD	1BH -1.36	F*1
22	H	13	80	MAN	1BH -1.09 TO-1.04	F*1
22	H	15	80	SAD	1BH -1.32	F*1

22	H	17	80	MAD	1BH -1.27	F*1
22	H	9	81	MAD	1BH -1.30	F*1
22	H	12	81	SAD	1BH -0.88	F*1
22	H	15	81	MAD	1BH -0.94	F*1
22	H	18	81	SAD	1BH -1.26	F*1
22	H	22	81	SAN	1BH -1.44 TO-1.34	F*1
22	H	12	82	SAD	1BH -1.30	F*1
22	H	13	82	MAD	1BH -1.00	F*1
22	H	17	82	MAD	1BH -1.30	F*1
22	H	15	83	SAD	1BH -0.90	F*1
22	H	17	83	SAD	1BH -0.86	F*1
22	H	22	83	SAD	1BH -1.44	F*1
22	H	18	84	MAD	1BH -0.92	F*1
22	H	21	22	SAD	2BH -3.51	F*2
22	H	17	28	SAD	2BH -2.12	F*2
22	H	20	29	SAD	2BH -3.16	F*2
22	H	27	30	SAN	2BH -1.94 TO-1.78	F*2
22	H	15	31	SAD	2BH -0.31	F*2
22	H	14	35	SAN	2BH -3.34 TO-3.24	F*2
22	H	19	35	SAD	2BH -3.18	F*2
22	H	37	35	SAD	2BH -0.88	F*2
22	H	19	36	SAD	2BH -3.32	F*2
22	H	18	39	SAD	2BH -3.16	F*2
22	H	14	40	SAD	2BH -3.17	F*2
22	H	12	42	SAI	2BH -0.76 TO-0.66	F*2
22	H	1	44	MAD	2BH -3.24	F*2
22	H	17	45	MAN	2BH -3.24 TO-3.08	F*2
22	H	15	46	MAD	2BH -3.28	F*2
22	H	23	46	SAN	2BH -3.40 TO-3.29	F*2
22	H	18	47	MAN	2BH -3.40 TO-3.33	F*2
22	H	21	47	SAD	2BH -3.20	F*2
22	H	18	48	SAD	2BH -2.96	F*2
22	H	27	48	SAD	2BH -3.08	F*2
22	H	3	49	SAN	2BH -0.80 TO-0.73	F*2
22	H	26	50	MAD	2BH -3.14	F*2
22	H	18	52	SAD	2BH -3.10	F*2
22	H	24	52	MAN	2BH -3.45 TO-3.28	F*2
22	H	12	53	SAN	2BH -3.08 TO-2.87	F*2
22	H	37	56	SAD	2BH -3.00	F*2
22	H	13	58	SAN	2BH -0.65 TO-0.55	F*2
22	H	9	60	SAN	2BH -1.56 TO-1.46	F*2
22	H	20	60	SAD	2BH -3.25	F*2
22	H	16	65	MAD	2BH -3.04	F*2

22	H	19	74	SAN	2BH -2.02 TO-1.85	F*2
					Total Count, F*0	85
					Total Count, F*1	398
					Total Count, F*2	31
F*0 = F* TUBE WITHOUT ADDITIONAL ROLL EXPANSION						
F*1 = F* TUBE WITH ONE ADDITIONAL ROLL EXPANSION						
F*2 = F* TUBE WITH TWO ADDITIONAL ROLL EXPANSIONS						
MAD = MULTIPLE AXIAL INDICATION, not detectable this year						
SAD = SINGLE AXIAL INDICATION , not detectable this year						
MAI = MULTIPLE AXIAL INDICATION						
SAI = SINGLE AXIAL INDICATION						
MAN = MULTIPLE AXIAL INDICATION, not changed this year						
SAN = SINGLE AXIAL INDICATION , not changed this year						
TRH = TOP OF ROLL HOT LEG						
1BH = BOTTOM OF ADDITIONAL HARD ROLL 1						
2BH = BOTTOM OF ADDITIONAL HARD ROLL 2						

ATTACHMENT 4

Prairie Island Unit 2 In Situ Test List – May 2000 Refueling Outage

SG	Row	Column	Indication	Location	Voltage	Reason	Length inch	Width deg.	Leakage Result	Max. Pressure
21	7	21	SAI	1BH +0.96" to +1.32"	1.3	ReRoll PWSCC	0.36"		0	2900
21	11	54	SAI	1BH +17.08" to +17.48"	0.17	Crevice ODSCC	0.4"		0	2900
21	1	93	SCI	01C -0.24" to +0.08"	0.48	U-Bend Circ	0.3"	66	0.005 gpm	5700