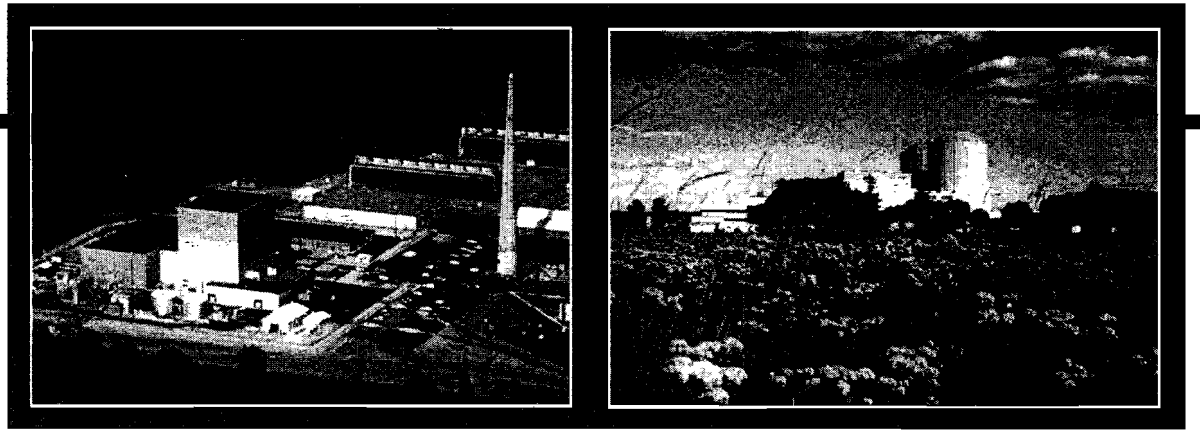
Prairie Island 2R26 Outage



NRC Phone Call and NRC Discussion Points

April 28, 2010

2R26 NRC Phone Call
April 28, 2010

- Participants:
  - Prairie Island (NSP MN)
    - Kari Den Herder (SG Engineer)
    - Sam DiPasquale (Licensing)
    - Mike Heller (SG Project Supervisor)
    - Scott Redner (ET Level III QDA)
    - Jeff Ricker (Inspection & Materials Supervisor)
    - Steve Skoyen (Engineering Programs Manager)
    - Ben Stephens (SG Program Engineer)
  - AREVA (Lynchburg)
    - Jim Begley (CMOA analyst)

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- The attached information has not been validated. In many cases, it is preliminary information from ongoing activities. To our knowledge, it is the best information available as of 10 AM on the date prior to this report and may be changed following further review and analysis.
- NRC Discussion Points are provided in italic font and are used as a template for this presentation.

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Current Status of 2R26 SG Inspection (As of 1000 on April 27, 2010)

Category	21 SG	22 SG
ET Acquisition (% completed)	80.4	75.3
ET Analysis (% completed)	71.6	69.9
# of Pluggable Tubes	12	9
# of Re-Roll Candidates	248	153
# of In Situ Candidates	0	0

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Q1: Discuss any trends in the amount of primary-to-secondary leakage observed during the recently completed cycle.

- 21 Steam Generator maximum steady state leakage by tritium was less than detectable to ≤ 1.1 gallons per day over the last cycle.
- 22 Steam Generator maximum steady state leakage by tritium was less than detectable to ≤1 gallon per day over the last cycle.
- Steam Generator Tube Leakage is similar to leakage over the last three cycles.

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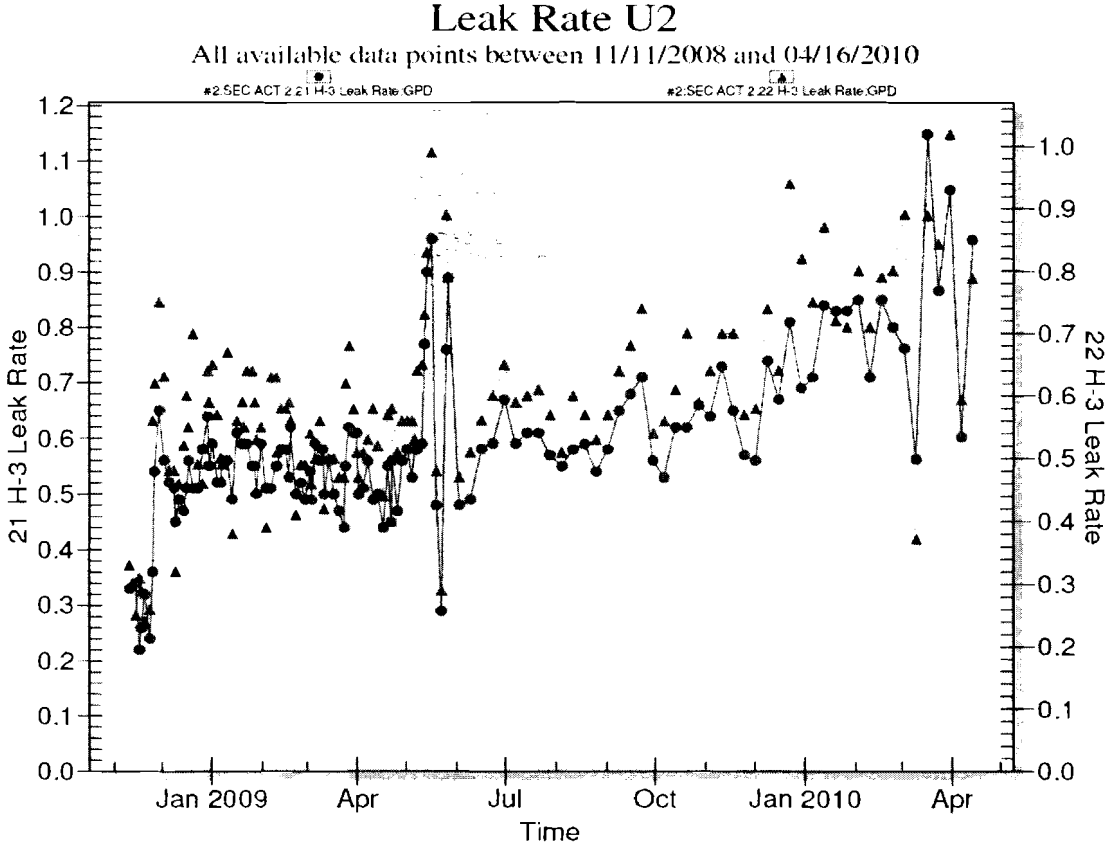

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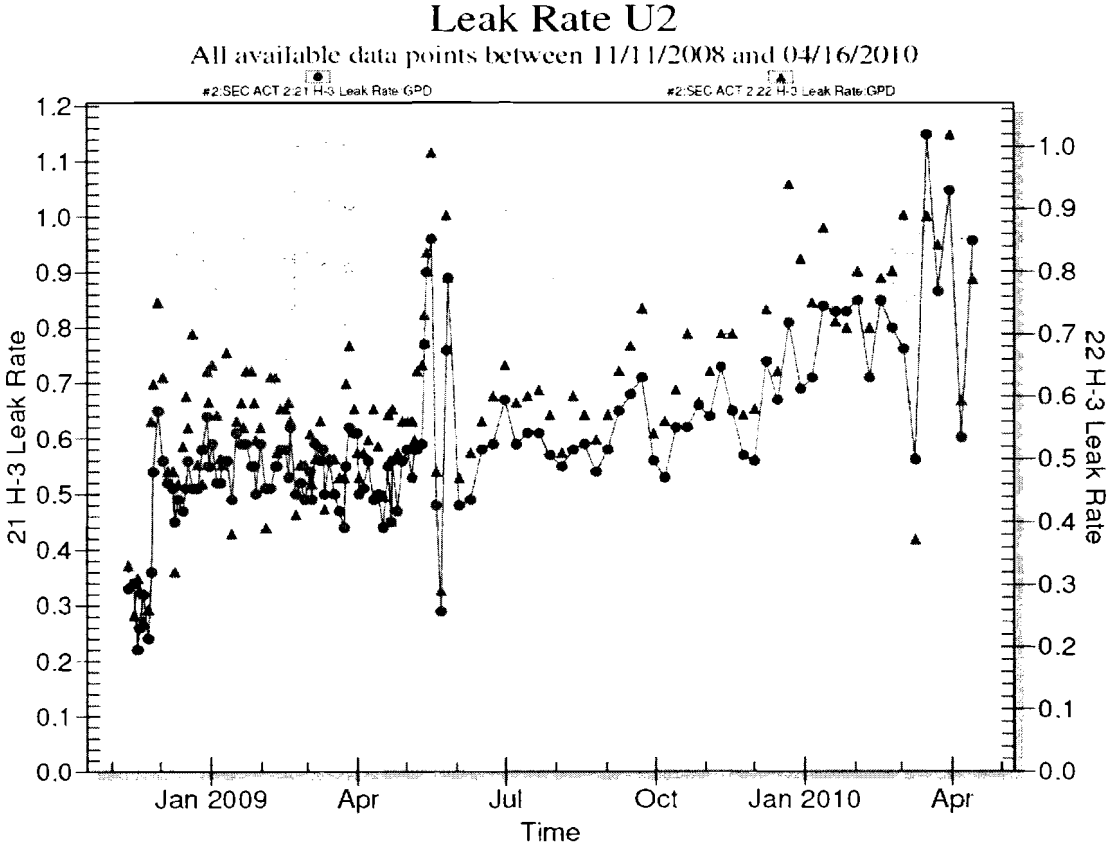

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Q2: Discuss whether any secondary side pressure tests were performed during the outage and the associated results.

- **Due to very low primary to secondary leakage, no pressure tests were done to look for tube leakage.**

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Q3: Discuss any exceptions taken to the industry guidelines.

- **No exceptions were or will be taken from industry guidelines.**

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Q4: For each SG, provide a description of the inspections performed including the areas examined and the probes used, the scope of the inspection , and the expansion criteria.

- **Prairie Island 2R26 steam generator inspection plan is attached on the following sheet.**

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2R26 Steam Generator Inspection Plan

SCOPE	PROBE TYPE	S/G 21	S/G 22
Full Length ❶	Bobbin	100%	100%
Rows 1 through 4 U-Bends	MRPC	100%	100%
Rows 5 through 8 U-Bends ❷	MRPC	33%	33%
Hot Leg Tubesheet	MRPC	100%	100%
I690 Hot Leg Roll Plugs ❸	MRPC	25%	25%
Cold Leg Tubesheet	MRPC	20%	20%
Supplemental ❹	MRPC	100%	100%
Post In Situ Pressure Test	MRPC	100%	100%
Plug Visual	N/A	100%	100%
Baseline New Re-Rolls	MRPC	100%	100%

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2R26 Steam Generator Inspection Plan (cont.)

❶ Except the bend portion of row 1 through 4 u-bends.

❷ Expansion plan defined in plant procedure 2H25.1.

❸ Plug samples and cold leg tubesheet samples are considered proactive informational sample plans that are not subject to the periodicity requirements of T.S.5.5.8.d.3.

❹ ADR, CUD, DEP, DNI, TSP DNT ≥ 2.0V, Freespan DNT ≥ 5.0V, DRI, DSI, DTI, TSP INR ≥ 1.5V, MBM, NQI, PLP (Bound MRPC PLP's), PSI, Cold Leg Thinning ≥ 40% or < 40% and ≥ 1.5V.

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- ***Q5: For each area examined (e.g., tube supports, dents/dings, sleeves, etc), provide:***

  A summary of the number of indications identified to-date of each degradation mode (e.g., number of circumferential primary water stress corrosion cracking indications at the expansion transition).

  For the most significant indications in each area, provide an estimate of the severity of the indication (e.g., provide the voltage, depth, and length of the indication). In particular, address whether tube integrity (structural and accident induced leakage integrity) was maintained during the previous operating cycle.

  In addition, discuss whether any location exhibited a degradation mode that had not previously been observed at this location at this Unit (e.g., observed circumferential primary water stress corrosion cracking at the expansion transition for the first time at this unit).

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PI 2R26 Analysis Status

Analysis Status (percent completed) as of 1000 on April 27, 2010:	SG 21		SG 22	
	Hot	Cold	Hot	Cold
Bobbin	100	96.1	100	96.1
U-Bend MRPC	0	N/A	0	N/A
Tubesheet Crevice MRPC	71.0	25.9	67.6	28.5
Hot Leg Roll Plug MRPC	0	N/A	0	N/A
Supplemental MRPC	0	0	0	0
Post In Situ MRPC	0	0	0	0
Plug Visual	100	100	100	100
Baseline New Re-Rolls	0	0	0	0

SG 21 Analysis Results to Date

Degradation Mode and Location (Indications) Excludes all indications below the F* and EF* Distance	#	Volt	Depth	Length	New Mech.
Volumetric Wear at New Anti-Vibration Bars (AVB)(≤ ± 1")	21	2.11	33	N/A	N
Volumetric Wear at Old AVB's (free span)(> 1")	49	2.94	43	N/A	N
Volumetric Wear at PLP's (1998 In Situ Neighbors)	2	0.70	33	N/A	N
Volumetric Thinning at Cold Leg Tube Support Plates	75	3.03/1.55	36/46	N/A	N
Volumetric Thinning at Cold Leg Top of Tubesheet	0	N/A	N/A	N/A	N
Volumetric Thinning at Hot Leg Tube Support Plates	0	N/A	N/A	N/A	N
Volumetric Thinning at Hot Leg Top of Tubesheet	0	N/A	N/A	N/A	N
Axial ODSCC at Hot Leg Sludge Pile	2	0.15/0.10	N/A	0.22/0.33	N
Axial ODSCC at Hot Leg Crevice	8	0.22	N/A	0.45	N
Axial ODSCC at Hot Leg Tube Support Plates	0	N/A	N/A	N/A	N
Axial PWSCC at Hot Leg Roll Expansions/Tube Ends	338	1.75/0.76	N/A	0.10/0.78	N
Circ. PWSCC at Hot Leg Roll Expansions/Tube Ends	1	2.42	N/A	0.17	N
Circ. ODSCC at a Re-Roll Expansion	1	0.36	N/A	38°/0.27"	Y
Axial PWSCC at U-bends	0	N/A	N/A	N/A	N
Circ. PWSCC at U-bends	0	N/A	N/A	N/A	N
ODSCC/PWSCC at Dents	0	N/A	N/A	N/A	N
ODSCC/PWSCC at Plugs	0	N/A	N/A	N/A	N

SG 22 Analysis Results to Date

Degradation Mode and Location (Indications) Excludes all indications below the F* and EF* Distance	#	Volt	Depth	Length	New Mech.
Volumetric Wear at New Anti-Vibration Bars (AVB)(≤ ± 1")	47	3.23	45	N/A	N
Volumetric Wear at Old AVB's (free span)(> 1")	32	2.71	40	N/A	N
Volumetric Wear at PLP's	0	N/A	N/A	N/A	N
Volumetric Thinning at Cold Leg Tube Support Plates	122	5.03/2.46	44/56	N/A	N
Volumetric Thinning at Cold Leg Top of Tubesheet	0	N/A	N/A	N/A	N
Volumetric Thinning at Hot Leg Tube Support Plates	0	N/A	N/A	N/A	N
Volumetric Thinning at Hot Leg Top of Tubesheet	0	N/A	N/A	N/A	N
Axial ODSCC at Hot Leg Sludge Pile	0	N/A	N/A	N/A	N
Axial ODSCC at Hot Leg Crevice	2	0.11	N/A	0.35	N
Axial ODSCC at Hot Leg Tube Support Plates	0	N/A	N/A	N/A	N
Axial PWSCC at Hot Leg Roll Expansions/Tube Ends	210	1.51/1.16	N/A	0.10/0.68	N
Circ. PWSCC at Hot Leg Roll Expansions/Tube Ends	0	N/A	N/A	N/A	N
Circ. ODSCC at a Re-Roll Expansion	0	N/A	N/A	N/A	N
Axial PWSCC at U-bends	0	N/A	N/A	N/A	N
Circ. PWSCC at U-bends	0	N/A	N/A	N/A	N
ODSCC/PWSCC at Dents	0	N/A	N/A	N/A	N
ODSCC/PWSCC at Plugs	0	N/A	N/A	N/A	N

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Analysis Status (Continued)

- Structural and accident induced leakage integrity was maintained during the previous cycle.

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Q6: Describe repair/plugging plans.

Pre Outage Predicted Repairs

SCOPE	S/G 21	S/G 22
In Situ Pressure Test	5	5
AR1 – 6" Re-Roll	194	104
AR2 – 8" Re-Roll	88	43
ARE – Elevated Re-Roll	13	2
Hot Leg Roll Plugs	20	11
Cold Leg Roll Plugs	20	11

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Planned Repairs (Based on 71% inspected)

SCOPE	S/G 21	S/G 22
In Situ Pressure Test	0	0
AR1 – 6" Re-Roll	177	135
AR2 – 8" Re-Roll	58	15
ARE – Elevated Re-Roll	13	3
Hot Leg Roll Plugs	12	9
Cold Leg Roll Plugs	12	9

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Q7: Describe in-situ pressure test and tube pull plans and results (as applicable and if available).

- We have no plans to pull tubes for Unit 2, as part of a licensed repair program.
  - Status – No tube pull is needed.

- We are planning on performing up to 10 In Situ tests based on inspection results.
  - Status – No In Situ tests are needed.

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Q8: Discuss the following regarding loose parts:
1) what inspections are performed to detect loose parts.

A) All bobbin data is evaluated for possible loose parts (PLP) and PLP wear using manual analysis by primary.

B) Secondary uses Computer Data Screening (CDS) with a PLP specific sort from TSH + 0.3" to 07H + 2.00" and from TSC + 0.3" to 07C + 2.00" and various wear detection sorts from TSH – 1.0" to TSC – 1.0".

C) Resolution tertiary review is conducted on all bobbin coil periphery tubes, two tubes deep for PLP's.

D) All MRPC data is evaluated for PLP's.

E) All bobbin PLP indications are tested with MRPC.

F) All MRPC PLP indications are bounded radially by one tube at the same elevation.

G) Any PLP that cannot be resolved with ECT are inspected from the secondary side for resolution.

H) Top of Tubesheet Remote Visual Inspection: Peripheral & In-bundle.

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Q8: Discuss the following regarding loose parts:

2) a description of any loose parts detected and their location within the SG (including the source or nature of the part, if known).

New MRPC PLP Indications:

SG	HL Top of TSH	CL Top of TSH
21	1	0
22	2	1

Based on FOSAR experience and historical lookups, the PLP indications are most likely sludge rocks. Visual confirmation will be conducted with the FOSAR inspection.

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Q8: Discuss the following regarding loose parts:
3) if the loose parts were removed from the SG.

A). SG 21 secondary side FOSAR will be done this week.

B). SG 22 secondary side FOSAR follows sludge lancing this week.

Q8: Discuss the following regarding loose parts:
4) indications of tube damage associated with the loose parts.

There is no wear associated with any of the PLP indications.

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- ***Q9: Discuss the scope and results of any secondary side inspection and maintenance activities.***
  - FOSAR results previously discussed.
  - SP 2534 Steam Generator Internals Inspection for 22 SG
    - SG Steam Drum Inspection planned this week:
      - Tube Bundle Wrapper
      - Feedwater Ring/Thermal Sleeve
      - Moisture Separation Equipment
    - SG Feedwater Nozzle ISI Inspections of:
      - Knuckle Region, Nozzle to Reducer and Reducer to Pipe Welds, Transition Cone Girth Weld, Feedwater Ring Hangers, and FAC Inspection of FW Tee
  - Top of Tubesheet Region planned after sludge lancing.

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- ***Q10: Discuss any unexpected or unusual results.***
  - No unexpected or unusual conditions detected during 2R26.

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- ***Q11: Provide the schedule for steam generator-related activities during the remainder of the current outage.***
  - ET examinations are scheduled to be completed later this week.
  - In-situ testing is not required at this time.
  - Repairs are projected to be completed by May 6.
  - Manway installation is scheduled to be completed on May 9.