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NL-04-1045

August 26, 2004

Docket Nos.: 50-424 50-425

U. S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, D. C. 20555-0001

> Vogtle Electric Generating Plant Response to NRC Questions Regarding the 2002 Unit 2 (2R9) and the 2003 Unit 1 (1R11) <u>Steam Generator Tube Inspection Reports</u>

Ladies and Gentlemen:

On April 29, 2004, Southern Nuclear Operating Company (SNC) received eight questions by telecon from the staff concerning the Vogtle Electric Generating Plant (VEGP) 2002 Unit 2 (2R9) and the 2003 Unit 1 (1R11) Steam Generator Tube Inspection Reports. The SNC response to these questions is enclosed.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

Jeffrey T. Gasser

JTG/DRG

Enclosure: SNC Response to NRC Questions Regarding VEGP 2002 Unit 2 (2R9) and VEGP 2003 Unit 1 (1R11) Steam Generator Tube Inspection Reports

cc: <u>Southern Nuclear Operating Company</u> Mr. J. B. Beasley, Jr., Executive Vice President Mr. W. F. Kitchens, General Manager – Plant Vogtle RType: CVC7000

> <u>U. S. Nuclear Regulatory Commission</u> Dr. W. D. Travers, Regional Administrator Mr. C. Gratton, NRR Project Manager – Vogtle Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

Enclosure

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Vogtle Electric Generating Plant Response to NRC Questions Regarding the 2002 Unit 2 (2R9) and the 2003 Unit 1 (1R11) Steam Generator Tube Inspection Reports

1. NRC Question

Most of the three letter indication codes used in your report are defined in the EPRI guidelines but not all, for example: "MBS", "TRA" and "BDE". Provide a definition for these codes and explain how these are used at Vogtle Units 1 and 2.

SNC Response

Southern Nuclear Operating Company (SNC) obtains the services of Westinghouse Electric to perform the steam generator (SG) eddy current examination. Westinghouse uses procedures to control the inspection, and they employ codes in addition to the EPRI codes to facilitate their inspection program. The codes referenced above are used in the Westinghouse program procedures and described:

- MBS Manufacturing buff mark indication detected by bobbin coil inspection which was confirmed as a non-flaw condition based on diagnostic testing or historical review.
- TRA Trackable anomaly is a rotating +Point coil (RPC) inspected location at which no flaw was found, however, the location is marked for tracking and monitoring for change in future inspections.
- BDE Bad data due to not testing the required extent. This constitutes an extent which required retest.

2. NRC Question

On page 4-2 of your in-service inspection report for Unit 1, you indicated that a volumetric indication was detected in tube R4C81. Please discuss the nature and cause of this indication. Please clarify whether this indication is above the secondary side of the cold leg tubesheet in the freespan or whether the indication is located approximately 10" from the tube end (i.e., in the tubesheet).

SNC Response

This volumetric indication is 9.82 inches above the top-of-tubesheet, on the cold leg side, in the tube freespan. This volumetric indication was consistent with loose parts impact or a mechanical change in the tube, e.g., cold lap breaking off. Because this was a single occurrence of this type of volumetric indication, it did not result in the declaration of a new degradation mechanism.

3. NRC Question

On page 4-2 of your in-service inspection report for Unit 1, you indicated that one tube (R1C36) was plugged due to difficulty in performing an inspection of row 1. Please describe the nature and location of the difficulty. Include in your response a discussion of whether the difficulty was service induced and the extent of it (e.g., what was the largest size probe to be passed through the tube during this outage and previous outages).

SNC Response

The location in the R1C36 tube for which the inspection was difficult was the U-bend region. The 0.520" +Point rotating probe would pass through the tube; however, due to a tight fit in this row 1 U-bend, proper rotation of the probe was prevented at the apex of the U-bend region of the tube. Because an inspection of this tube within the preceding 60 effective full power months (EFPM) had not been performed, it was plugged. The U-bend tube was previously inspected using a +Point rotating probe during the 1R7 outage in 1997, though special effort was required to complete the inspection. Completion of the inspection in the 1R11 outage was not pursued because of concerns with dose and outage duration impacts.

4. <u>NRC Question</u>

Table 1 of your Units 1 and 2 reports indicate various indications reported as differential free-span signals and distorted support signals. Regarding these indications, please address the following:

- I. Can these indications be traced back to the baseline inspection? If so, have they shown any change? If change has been observed, please explain what has caused these indications to change.
- II. If these are new indications that are service induced and not traceable, discuss the nature of these indications. For example, please discuss whether a flaw was present at this location and if so, provide the size (length, depth, percent degraded area) and nature of the indication (primary water stress corrosion cracking, outside diameter stress corrosion cracking, etc.).

SNC Response

- I. There have been changes traced back to the baseline inspection. These changes have been dispositioned with a rotating coil inspection; however, the cause of the changes in the signals cannot be specified. The greatest number of signal changes typically occur early in life and are usually associated with time at temperature; however, changes do occur over the life of the steam generators. Potential causes of these signal changes are scale buildup on the tube, sludge buildup on support plates, sludge rocks, or other factors.
- II. New differential indications have been detected at Vogtle, but it cannot be ascertained if these new differential indications are service-induced. However, no flaws were found in these new differential indications.

5. <u>NRC Question</u>

On page 4-5 of your in-service inspection report for Unit 2, you indicated that two tubes were plugged. The first tube (R43C83) was plugged due to a 45% wear indication and the second tube (R44C48) was administratively plugged with a 39% indication. The staff reviewed the table attached with the report to gain more insight regarding the tubes but noticed that this table is different from the one provided with the Unit 1 report. This table is titled "U2R7 History Percent Indications with Current U2R9 Results," which the staff assumes is not the table that lists all the as found indications. Discuss the nature of the eddy current signals at these locations and your assessment as to what could have cause wear at these locations. In addition, if the table in the Unit 2 report does not list all imperfections, please submit a modified table.

SNC Response

The staff is correct that the table "U2R7 History Percent Indications with Current U2R9 Results," which was attached to the Inservice Inspection Summary Report for 2R9, does not list all of the as-found indications of imperfections and associated through-wall penetration. The information which meets these criteria is provided in the attached Table 1, "SG-1 Listing of U2R9 Percent Indications," and Table 2, "SG-4 Listing of U2R9 Percent Indications."

The attached tables list volumetric eddy current indications which are attributed to wear removal of tube material, characterized as follows:

- AVB wear This is wear into the tube by anti-vibration bars.
- Foreign object wear Two volumetric indications attributed to foreign object wear were identified and sized at less than the Technical Specification plugging limit. No possible loose parts were identified with respect to these tubes; therefore, no foreign objects could be characterized with respect to this wear.

6. NRC Question

Discuss whether any indications other than wear were found in the inspection. If any cracks were found, discuss how they were detected, the size (length, depth, percent degraded area, voltage) and nature (primary water stress corrosion cracking, outside diameter stress corrosion cracking, etc.) of the flaw, and any additional testing performed to assess the integrity of the tube (e.g., ultrasonic testing, in-situ pressure testing).

SNC Response

No flaw indications other than wear were found in the inspection.

7. NRC Question

In Unit 1, you inspected 100% of the dents in the straight length that were greater than 5 volts. In Unit 2, you inspected 100% of the dents in the U-bend that were greater than 5 volts. Discuss why no dents greater than 5 volts were examined in the U-bend area of Unit 1 and why no dents greater than 5 volts were examined in the straight lengths of Unit 2.

SNC Response

Vogtle inspects 100% of the dents and dings with the bobbin every outage in the steam generators scheduled for inspection, with the exception of the row 1 and row 2 U-bends which are inspected with the +Point rotating coil on a 50% sampling basis. Rotating coil inspections are performed on the dents and dings greater than 5 volts in either the U-bends or in the straight leg of the tube each outage. These inspections are appropriate for steam generators which have never experienced corrosion in the U-bends or straight leg portion of the tube.

8. <u>NRC Question</u>

On page 4-1 of your in-service inspection report for Unit 1, you indicated that as part of your inspection scope you performed a quatrefoil blockage assessment and an evaluation of the Phosphate Chemistry Excursion that occur during cycle 11. Discuss the nature of these assessments/evaluations (e.g., scope, reason) and the results.

SNC Response

In the quatrefoil blockage assessment, a rotating probe inspection was performed on the HL-side tube-to-tube support plate (TSP) intersection at 360 locations at TSPs 6 and 7, and numerous other locations at other TSPs. Variation from a clean intersection would be reflected in the eddy current signature. Results do not support quantification of quatrefoil blockage because there is not enough correlation between the RPC signatures and visual inspection data to support a quantified estimate of blockage. The results of this assessment are summarized below:

- No clean tube-TSP intersections were observed.
- Scale is significantly thicker at the bottom of the TSP than at the top along the tube extent going through the TSP.
- More deposits are observed in TSP intersections at TSP7 than at other TSPs.

In the evaluation of the phosphate chemistry excursion, 100% of the tubes were inspected with the bobbin probe and 50% were inspected at top of the tubesheet HL-side with the +Point probe. For a limited number of tubes, a detailed analysis and history comparison were performed in an attempt to identify any excursion signals that indicated the onset of corrosion. None were identified.

SG - 1 LISTING OF U2R9 PERCENT INDICATIONS

Vogtle 2 U2R9 GBE 20021001 10/20/2002 13:55:14 INSPDATE ROW COL INCH1 VOLTS DEG IND PER CHN LOCN INCH2 BEGT ENDT PDIA PTYPE CAL LI 2092/10/01 38 18 .33 2 PCT P2 AV6 .00 TEH TEC 18 C 12 .560 MBARH 2002/10/01 35 14 .40 ٥ PCT 16 P2 AV4 .00 TEH TEC 560 MBARH 22 Cİ 2002/10/01 17 19 20 20 20 ci ci 36 1.09 ۵ PCT P2 AV6 - . 49 TEH TEC 560 MBARH 36 17 ē PCT ΡŻ -.08 560 2002/10/01 AV6 MBARH .62 TEH TEC 2002/10/01 20 .98 0 PCT 3 TSC 2.24 TSC TSC ZPSMR 108 ci 8 9 560 2002/10/01 AV2 -.08 TEH TEC 22 22 41 28 .59 ٥ PCT 20 P2 560 MBARH C .34 .41 .36 41 20 õ PCT 560 2002/10/01 PŽ AV3 MBARH 14 TEC -.11 TEH P2 P2 22 2002/10/01 41 28 ۵ PCT 16 AV4 .03 TEH TEC 560 MBARH 20 PCT 0 · .03 2002/10/01 41 AV5 Cİ 15 TEH TEC 560 HBARH 2002/10/01 42 20 .67 0 PCT 21 P2 AV2 .00 TEH TEC .560 HBARH 22 ci 2202/10/01 22 22 .52 P2 P2 TEH 560 MBARH 22 22 44 8 PCT 18 AV4 -.08 TEC C 44 ē PCT 15 TEC 2002/10/01 AV6 TEH .569 HBARH .09 Cİ 2002/10/01 23 AV5 .560 .68 P2 . 80 TEH TEC HBARH 41 0 PCT 14 20 C 2002/10/01 41 23 .46 0 PCT 10 **P2** AV6 .00 TEC .569 HBARH ZØ čj TEH 2002/10/01 23 .34 0 PCT P2 AV2 - .22 TEH TEC .569 MBARH ci 44 13 20 PCT P2 P2 .560 MBARH 2002/10/01 44 23 .88 Ø 17 AV3 .09 TEH TEC 20 Ci 2002/10/01 14 AV4 20 20 44 23 .71 ۵ .00 TEH 44 23 1.60 Ö PCT 24 P2 AV5 TEC 2002/10/01 .09 TEH . 560 MBARH 2002/10/01 46 24 .36 0 PCT 15 P2 AV4 ..08 TEH TEC .560 MBARH 22 ci 25 PCT 17 P2 AV1 .08 TEC 2002/10/01 34 .53 ٥ TEH . 569 26 MBARH C .73 PCT AV4 TEH 2002/10/01 46 26 ٥ 23 P2 .00 TEC 560 MBARH 24 C 2002/10/01 41 27 .48 9 PCT 16 P2 AV5 . 00 TEH TEC .560 MBARH 26 ci 2002/10/01 44 PCT PCT 27 .23 ą 8 P2 AV2 . 60 TEH TEC .560 MBARH 26 cj 11 2002/10/01 27 .31 0 P2 AV3 . 80 TEH TEC 560 MBARH 26 C 47 27 2002/10/01 1.22 ۵ PCT 27 P2 AV2 .00 TEH TEC .560 MBARH 26 C 2002/10/01 48 PCT PCT P2 P2 27 . 29 11 AV2 .00 TEH TEC 560 MBARH 26 C 2002/10/01 27 .34 Ċ 48 0 12 AV3 . 60 TEH TEC 560 MBARH 26 2002/10/01 28 46 .18 ۵ PCT 6 P2 AV6 .03 TEH TEC 569 MBARH 26 C 2002/10/01 48 28 .48 0 PCT 16 P2 AV2 . 60 TEH TEC 569 MBARH 26 ci 25 2002/10/01 50 28 1.02 0 PCT P2 AV3 . 00 TEH MBARH TEC .560 26 ci PCT P2 26 26 2002/10/01 50 28 1.36 0 29 AV4 . 00 TEH TEC 562 MBARH C 2002/10/01 60 28 .31 ø PCT 11 P2 AV6 .08 TEC TEH .560 MBARH CI 2002/10/01 49 29 .37 0 PCT 13 P2 AV6 .65 TEH TEC 560 MBARH 26 Ci 2002/10/01 .42 .52 28 28 46 32 9 PCT 14 P2 AV3 -.11 TEH TEC 569 MRARH C 2002/10/01 46 32 a PCT 16 P2 AV4 TEH TEC 560 MBARH ci 2002/10/01 37 33 .42 0 PCT PCT 9 P2 AV3 .eo TEC 560 MBARH TEH 30 C 2002/10/01 37 33 . 9 P2 AV4 .ee TEH TEC 560 MBARH 30 ci 2002/10/01 53 33 .51 â PCT 16 P2 AV4 .83 TEH TEC 569 MBARH 28 ci 2032/10/01 53 34 .43 ۵ PCT 14 P2 AV3 .00 TEH TEC 568 MBARH 28 ci 2092/10/01 37 35 .25 Ø PCT 10 P2 AV3 .00 TEH TEC 552 MBARH 34 C 2002/10/01 47 36 .70 ø PCT 13 P2 AV1 TEH TEC .00 562 32 C MBARH 2092/10/91 39 37 .19 ø PCT 8 P2 TSH 34 82 AV4 . 00 TEC 569 MBARH С 2002/10/01 37 39 .24 9 PCT 19 **P2** AV4 .00 TEH TEC 560 MBARH C 2002/10/01 55 39 .23 9 PCT 11 P2 P2 AV2 . 00 TEH TEC 560 MBARH 32 32 Ci 2002/10/01 55 39 .32 0 PCT 13 AV3 .00 TEC TEH 560 MBARH 2002/10/01 54 54 50 50 .27 P2 P2 AV2 TEH 9 PCT 12 .00 TEC HBARH 40 569 C PCT 13 2002/10/01 0 AV3 .00 TEH TEC 560 MBARH 40 cj 2002/10/01 53 58 .26 8 PCT 11 P2 AV1 .ea TEH TEC 560 MBARH 44 cj .46 2032/10/01 58 53 9 P2 AV3 PCT 44 44 TEC TEC Ci TEH 560 MBARH PCT P2 2032/10/01 58 53 . 18 AV4 . 00 TEH 560 MBARH INSPDATE ROW COL VOLTS DEG IND PER CHN LOCN INCH1 INCH2 BEGT ENDT PDIA PTYPE CAL 11

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Table 1

ogtle 2 UZR	29						G	BE 200210	01				10/	29/2002	13:55:	:14
INSPDATE	ROW		VOLTS				CHN	LOCN	INCH1	INCH2	BEGT	ENDT	PDIA	PTYPE	CAL	 L
•••••	*****		•••••	••••		••••						••••••	•••••	•••••	•••••) • • •
2092/10/01	59	68	21	Ð	PCT	9	PZ	AV1	22		TEH	TEC	.560	MBARH	82	C
2002/10/01	44	72	32	0	PCT	8	P2	AV6	60		TEH	TEC	.560	MBARH	50	C
2092/10/01	58	72	30	0	PCT	13	P2	AV1	83		TEH	TEC	.560	MBARH	82	С
2032/10/01	58	73	29	6	PCT	7	PZ	AV1	60		TEH	TEC	.560	HBARH	50	C
2092/10/01	35	74	.41	C	PCT	10	P2	AV4	00		TEH	TEC	.560	MBARH	50	C
2002/10/01	58	75	.34	0	РСТ	12	P2	AV6	03		TEH	TEC	.560	MBARH	54	C
2002/10/01	55	81	.16	0	PCT	7	P2	AV2	6 8		TEH	TEC	.560	MBARH	56	С
2002/10/01	53	89	.31	0	PCT	12	P2	AV5	83		тен	TEC	.560	MBARH	58	c
2302/10/01	50	92	.30	0	PCT	11	P2	AV2	68		TEH	TEC	.560	MBARH	58	С
2992/10/01	50	93	.26	0	PCT	18	P2	AV3	63		TEH	TEC	.560	MBARH	60	C
2002/10/01	44	94	.35	C	PCT	13	P2	AV5	60		TEH	TEC	.560	MBARH	58	C
2992/10/01	48	96	.24	0	PCT	9	P2	AV2	16		TEH	TEC	.560	MBARH	62	C
2002/10/01	47	99	.35	0	PCT	13	P2	AV2	60		TEH	TEC	.560	MBARH	64	c
2002/10/01	47	99	.22	õ	PCT	9	PZ	AV5	03		TEH	TEC	.560	MBARH	64	č
			.39	Ø	PCT	14	P2	AV2			764	TEC	.560	MBARH	62	с
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2002/10/01	43	100	.79	ŏ	PCT	21	PZ	AV4	11		TEH	TEC	.560	MBARH	62	
2002/10/01	43	100	.28	õ	PCT	11	PZ	AV5	.05		TEH	TEC	.560	HBARH	62	
2002/10/01	29	105	.31	0	PCT	12	P2	AV2	.05		TEH	TEC	.560	MBARH	68	0
2002/10/01	29	112	.25	9	PCT	10	P2	AV2	.00		TEH	TEC	.560	MBARH	66	
INSPDATE	ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	BEGT	ENDT	PDIA	PTYPE	CAL	

SG - 1 LISTING OF U2R9 PERCENT INDICATIONS

Tubes: 46 Records: 70

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56 - 4 LISTING OF U2R9 PERCENT INDICATIONS.

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, L	CAL	PTYPE	PDIA	+. тока	BEGT	INCH2	INCH1	LDCH	C31M	PER	160	DEG	VOLTS	COL	ROW	PDATE	INSP
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c	28	PBARH	.563	TEC	TEH		11	AYZ	P2	18	PCT	C	.37	14	36	10/01	2002/1
	22	PBARH	.660	TEC	TEH		.17	AV2	P2	12	PCT	¢	,22	22	45		2002/1
¢	-22	PBARH	.500 .500	TEC TEC	тен Тен		.22	AV3 AV2	P2 P2	13 11	PCT PCT	0	.25 ,29	22 23	45 45		2002/1
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C	2	HEARH	.560 .560	TEC	TEH TEH		.26	AV2 AV3	P2 P2	15 21	PCT PCT	0	.31	33 33	52 52		2002/1
:C	2	MBARH	560	TEC	TEH		.00	AV4	P2	15	PCT	Ö	. 28	.33	52	19/61	2002/1
C C	22	MƏARH Məarh	.560 .568	TEC	TEH Teh		.03. 63.	A48 446	P2 P2	34 17	PCT PCT	0	1,42	33 33	62 52		2002/1
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c	· 2	MBARH	.560	TEC	TEH		,03	ÁV4	PZ	81	PCT	0	.40	35	51		2002/1
ċ	2	MOARII	,568	TEC	TEH		.00	EVA	P2	9	PCT	Ø	. 13	35	54	12/01	2002/1
	.2	HJARH	:560	TEC	TEH		28	A75	PZ	25	PCT	0	.70	35	54	10/01	2002/1
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Ċ	46	NDARH	.560	TEC	TEH		.03,	AV5	₽2	11	FCT	C	.21	42	55	10/01	2002/:
	44	MBARH	:560	TEC	TEH		.03	AV3	P2	8	PCT	C	. 20	-43	51		20027
	- 44	MJARH MBARH		TEC TEC	TEH Teh		.E0 .E9	474 674	P2 P2	9	PCT PCT	0 Ø	.23	43 43	51 51		2002/1
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, C	2	HBARH	.560	TEC	TEH		.26	AV3	P2 -	35	FCT	6	1.47	43	53	10/01	į 2002/
	2	MJARII MJARK	.860 ,560	TEC	TEH Tek		.14 06	A74 ^A75	P2 P2	18 19	PCT PCT	0	.38 .43	43 43			2002/
C	2	həarh	.EGO	TEC	TEH		.00	VA3	P2	22	PCT	c	.57	44	44	10/01	2002/
C	45	NJARH	.569	TEC	TEN		.co	AV3	92	15	PCT	¢	.75	44	53	13/01	20027
. 0	44	NBARH	.568	TEC	TEH		63	A45	PZ	10	PCT	C	.28	45	52	10/01	2002/
0		HJARH	.567	750	TEH	********	ES	AV5	P2	8	PCT	¢	.20	45	. 56 +,	10/01	2002/
1	CAL	PTYPE		ENDT	DEGT	theliz	INCHI	LOCH					VOLTS		RCW		

SG - 4 LISTING OF UZRD PERCENT INDICATIONS

14	13:55:1	29/2002	107.				01	E 200210	G						9	UZŔ	igtle 2
. L	CAL	PTYPE	•	ENDT	BECT	INCH2	INCH1	10CK	•			DEG	VOLTS		ROW		Insp
C	48 44	MBARH MBARH	.560 .560	TEC TEC	ten Ten		.99 .22	AV1 AV2	P2 P2	B 11	РСТ РСТ		.19.	47 47	43 43		2002/1 2002/1
Ċ	44	MBARH	.550	TEC	TEH		.¢9	AV3	PZ	18	PCT	6	1.05	47	55	9/e1	2002/1
C C	40 46	PDARH PBARH	.560	TEC	TEH Teh		02. 02.	873 874	P2 P2	27 22	PCT PCT	0	,91 ,58	48 48	44 44		2002/1
č		MBARH		TEC	TEH		.00	AY6	P2	39	PCT	õ	2.13	48	41		2002/1
Ć	46 46	HDARH MBARH		TEC TEC	TEH Teh		.00 .08	AV2 AV3	Р2 Р2	11 29	PCT PCT	0	.21	48 48	57 57		2002/1
C	46	MUARH		TEC	TEH		.00	AV5	r2	27	PCT	đ	.92	48	57		2862/1
Ċ	48	HDARH	-	TEC	TEH		.00	AV3	P2	8	PCT	0	.32	53	43		2302/1
C C	50 50	MBARH	550 550	TEC TEC	TEH Teh		02. 92.	AV1 AV5	Р2 Р2	13 12	PCT PCT	С 5	.27 .25	54 54	44 43		2302/1
H	81 01	HBARH - HBARH	560 560	TEH TEH	TEC TEC		•.18 .03	AV4 AV5	Р2 Г2	19 14	РСТ РСТ	0 C	_48 _30	54 54	51 51		2202/1
н	83	HBARH	-	TEH	TEC		.00	713	P2	14 14	PCT	ċ	.28	55	52		2302/1
н	63	HIJARH		TEH	TEC		.17	AVZ	P2	15	PCT	ĉ	.32	55.	51	•	2002/1
H	83	HRACH		TEH	TEC		.12	¥43	P2	23	PCT	¢	.65	55	51		2302/1
H	83 83	HBARH	560	TEH	TEC TEC		05 02	AV3 AV4	Г2 Р2	.17 18	PCT	0	.38 .30	57 57	48 43	0/01	2202/1
.с К	83 50	HSARH		TEH TEC	TEC TEH		03, 63.	AY5 AY5	Р2 Р2	22 14	PCT PCT	о С	.69 .29	57 58	48 43		2002/1
 н	61	IBARH		TEH	TEC		.20	A13	P2	23	PCT	0	.69	58	45		2302/1
H	81	HBARH		TEH	TEC		12	A¥4	P2	13	PCT	e	.27	56	45		2002/1
H H	83 83	HBARH	.560 .550	TEH TEH	TEC TEC		63. 92.	AV1 AV3	P2 P2	17 16	PCT PCT	с Ф	.87 .83	59 59	44 44		2202/1
Н	83	HJARH	.560	TEH	TEC		.80	AY4	P2	17	PCT	¢.	.38	50	44		2002/1
(C		HOARH	.560	TEC	TEH		. 16	EVA	PZ	9	PCT	c	. 26	69	51		2002/1
н	83 50	HEARIE	.560	TEH	TEC TEH		.09.	A¥6	P2 P2	11	PCT	2 •	. 43	63	59		2002/1
C	50	HUARH HUARH	.560	TEC	TEH		97. 98.	A¥1 A¥2	PZ	15 12	PCT PCT	С С	.33 .24	64 64	39 32		2002/1
C	50 50	HSARIE	:560 ,560	TEC TEC	TEH Teh		99. 92.	544 74	P2 P2	34 14	PGT FGT	0 0	1.47	64 64	39 39		2002/1
č	50	HUARH	.560	TEC	TEH		.03	AVE	P2	:25	PCT	Ŭ	.78	64	39		2002/1
Ċ	50 50	htiarii Htiarii	.562 .568	TEC TEC	TEH TEH		. C D . C D	A¥4 A¥6 -	P2 P2	18 13	PCT PCT	9 9	.45 .26	65 65.	43 43		2002/1
н	81	HJARH	.550	TEI	TEC		•.12	AY5	PZ	19	₽¢T	¢	_47	66	45	9/01	2092/1
H	81	HBARH	.560	TEH	TEC		03	AY1	P2	13	PCT	0	.20	66	5-2		2022/1
H	61 61	THBARII HBARII	.560 .560	TEH Teh	TEC TEC		.03 .06	Дү2 Дүз	Р2 Р2	23 11	PCT PCT	0 0	.64	66 - 66	52 52		2002/1
c	50	HBARH	.500	TEC	TEN		.00	AÝ3	P 2	.21	PCT	q	.50	60	43		2032/3
C	50	M9ARH PBARH	.560 .560	TEC .	TEH Teh		.03	AV4 AV5	P2 P2	.23	PCT	ů Q	.65	69 68	43 43	0/01	2002/1
Ċ	108	ZPSHK	.560	BFC	BPC		.32	BPC	3	33	PCT	à	5.63	68	57		2002/1
c	48	ралян	.560	TEC	TEH		.22	AVS	P2	19	РСТ	0	:64	69	43	19701	2002/1
ł	85	BARN	.560	TEH	TEC		.83	AY3	P2	15	fct	0	.34	70	50	10/01	2092/1
	87	Məarh	560	TEH	TEC		.05	AV1	·P2	13	FCT	0	. 26	71	52		2002/1
	87 87		.500 .500	TEN TEH	TEC TEC		.03 .08	AY2 AY3	P2 P2	24 27	рст Рст	0	.71 :06	71 71	52 52		2002/1
ł	87	POARI	.560	тен	TEC		.05	AYS	P2	13	₽CT	ō	. 28	71	57	19/81	2002/1
	85 85	¥barh Hearh		TEH - TEH -	TEC TEC		03 .03	AYZ AY3	P2 P2	30 15	PCT PCT	82 0	2.45	72 72	52 52		2002/
	48-	MBARH		TEC	TEH		.22	AY5	P2	12	PCT		.23	73	38		2002/2
***	CAL	**************************************	*****	ENDT	BEGT	INCH2	INCH1	LOCH	CIIN	****4			· · · · · · · · · · · · · · · · · · ·	COL			

Tabl	e 2
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SG - 4 LISTING OF U2R9 PERCENT INDICATIONS

	Vogtle 2	U2R9)						C	BE 200210	001				10/	20/2002	13:55:	:14
	INSPDA	TE	ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCHI	INCH2	BEGT	ENDT	PDIA	PTYPE	CAL	
ì	2022/10/	61	57	73	.36	E	PCT	12	P2	AV2	.09.		TEH	TEC	. 560	KBARH	52	ci
,	2095/10/	81	37	74	.30	e	PCT	14	₽2	EVA	.co		тен	TEC	.560	PBARH	53	ci
	2032/10/	91	£8	75	,24	8	PCT	13	₽2	AV2	·.#3		1611	TEC	.550	HSARH	54	c
	2022/10/	C 1	43	76	.,67	8	PCT	21	₽2	٨٧5	.00		TEH	TEC	.560	HBARH	58	c
	2082/10/	81	57	76	,31	. 2	PCT	16	P2	AV5	05		TEH	TEC	.560	HBARH	54	c
	2002/10/	51	52	78	,40	8	PCT	19	P2	AV4	. ee		TEH	TEC	.560	HBARH	54	c
	2032/10/	01	57	78	.22	5	PCT	13	P 2	AVE	-,08		TEH	TEC	. 560	HBARH	54	c
	2002/10/	21	27	79	.34	- 12	PCT	7	P2	AV5	.00		тен	TEC	.560	HBARII	56	c
	2822/10/		48	79	.34	C	PCT	11	P 2	AYZ	.00		TEH TEH	TEC	- 560	HBARH HBARH	52 52	
	2032/10/		48	79	.29	0	PCT	19	P2	AY3	.00			TEC	. 550		• -	i
	2332/10/		53	89	.20	8	PCT	15	F2	AVS	.83		тен Тен		.550	HBARH	54 192	CI
	2822/10/		43	83	1.29	. D	PCT	28	P2	AY3	.00		TEH	TEC TEC	.560 .560	HBARH	52	C 1
	2022/10/		43 43	83 83	.3,66 1.11	0 2	PC1 PCT	45 26	P2 F2	A¥4 A¥5	.80		TCH	TEC	.560	- HBARH	52	č
	2002/10/	01	49	83	.46	e	PCT	14	P2	E VA	. 50		TCH	TEC	.550	HBARH	52	c
	2022/10/	01	54	83	, 29	5	PCT	18	PZ	AV5	. 20		TCH	TEC	.660	MBARH	56	¢
	2032/10/	01	55	83	.64	e	PCT	15	₽2	AY5	.05		TEN	TEC	.550	KBARH	58	C
	2032/10/	01	43	85	.31	Ċ	PCT	11	P 2	A¥4	. co		TEH	TEC	.560	KJARIE	52	c
	2032/10/	81	44	85	,25	6	PCT	9	P2	EVA	.80		TCH	TEC	.550	MJARII	5Z	c
	2032/10/	01	45	88	,26	e	PCT	14	P2	AV3	.08		TEH	TEC	.560	MBARH	54	C
ı	1 2002/10/	01	48	88	.21	6	PCT	12	P2	AV5	08		TEH	TEC	.560	MBARH	.54	c
ł	2022/10/	01	53	80	.30	ø	PCT	14	F2	AV6	83		TCH	TEC	.550	KBARH	50	c
	2332/10/	¢1	51	92	, 47	C	PCT	5	P2	AV1	·.e3		TCH	TEC	.560	HBARH	56	c
	2302/10/		49	93	.47	é	PCT	19	PZ	AV4	.08		тен	TEC	.560	PBARH	58	c
	2362/10/		49	93	.75	õ	PCT	25	P2	AVS	63		TEN	TEC	.560	MBARH	.58	Ċ
	2042/10/	¢1	'49	96	.25	9	PCT	12	P2	AV2	14		TEH	TEC	.260	MBARH	58	∵c į
	2562/10/		48	97	. 16	0	PCT PCT	9 12	P2 P2	AV2 AV3	.00 • .22		тен Тен	TEC TEC	.563 ,563	HBARH HBARH	58 58	
	2002/10/	61	46	97	(تە,	0											•••	·
	2002/10/		40 40	126 126	.19 .22	9 9	PCT PCT	7 B	F2 F2	AV1 AV3	03. 03.		TCH TEH	TEC	.560 .560	MBARH MBARH	56 56	
	2322/10/	01	32	109	,24	0	PCT	10	P2	AVG	.00		TEH	TEC	.568	MBARH	78	C
	2002/10/		31	113	.21	0	PST	9	P2	AV2	41		TEH	TEC	.569	MBARH	78	c
	+	+				•••••		*****	* * - Al'N	1.004	ENCHI	TNCH2	BEGT	ENDT	EDIA	PTYFE	CAL	+
	I INSPOA				VOLTS					LOCN		INCH2						

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Tubes: 80 Records

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