TU ELECTRIC

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Ref. # NRCB 96-01

April 30, 1996

C. Lance Terry
Group Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
SUPPLEMENTAL RESPONSE TO NRC BULLETIN NO. 96-01:
CONTROL ROD INSERTION PROBLEMS

REF: 1) TU Electric letter logged TXX-96096 from C.L. Terry to the NRC dated April 8, 1996.

Gentlemen:

TU Electric responded to NRC Bulletin 96-01 via Reference 1. Requested Action (3) from the bulletin required that TU Electric measure and evaluate at each outage of sufficient duration during calendar year 1996 (end of cycle, maintenance, etc.) the control rod drop times and rod recoil data for all control rods, and if appropriate plant conditions exist where the vessel head is removed, measure and evaluate drag forces for all rodded fuel assemblies.

Requested Action (4) from the bulletin required that for each reactor trip during calendar year 1996, TU Electric verify that all control rods promptly fully inserted (bottomed) and obtain other available information to assess the operability and any performance trend of the rods.

TU Electric obtained rod drop times, rod recoil data, and drag force data at the end of cycle for Unit 2, Cycle 2 during the second refueling outage for Unit 2. The results have been included in Attachment 1. During the rod drop time testing, each Rod Control Cluster Assembly (RCCA) exhibited a minimum of two recoils and no significant outliers were noted in the drag force data.

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In addition, TU Electric obtained rod drop times and rod recoil data for Unit 1, Cycle 5 following the April 11, 1996 manual reactor trip and subsequent forced outage on Unit 1. The results are included in Attachment 1. Following the manual reactor trip on April 11, 1996, all control rods promptly fully inserted (bottomed), and other indications demonstrated continued control rod operability. During the rod drop time testing, each RCCA exhibited a minimum of two recoils.

Sincerely,

C. L. Terry

GLM/glm
Attachment

cc: Mr. L. J. Callan, Region IV
Ms. L. Smith, Region IV
Resident Inspectors, CPSES

Comanche Peak - Unit 2, Cycle 02

Rod Bank	Core Loc	Assm ID	Fuel Type	Startup BOC Burnup (MWD/MTU)	Startup BOC Time (sec)	End of Cycle (2/23/96) Burnup (MWD/MTU)	End of Cycle (2/23/96) Time (sec)	Delta (sec)
CBA	H6	CC43	Westinghouse "Standard" Zirc-4	10766	1.44	32071	1.48	0.04
CBA	K8	CC09	Westinghouse "Standard" Zirc-4	10547	1.41	31438	1.47	0.06
CBA	F8	CC34	Westinghouse "Standard" Zirc-4	10902	1.44	32051	1.48	0.04
CBA	H10	CC58	Westinghouse "Standard" Zirc-4	10904	1.46	31851	1.47	0.01
CBB	K2	CC40	Westinghouse "Standard" Zirc-4	11853	1.42	28589	1.44	0.02
CBB	F2	CC41	Westinghouse "Standard" Zirc-4	11366	1.43	28180	1.44	0.01
CBB	P6	CC52	Westinghouse "Standard" Zirc-4	11273	1.46	28139	1.49	0.03
CBB	B6	CC37	Westinghouse "Standard" Zirc-4	11578	1.44	28246	1.45	0.01
CBB	P10	CC60	Westinghouse "Standard" Zirc-4	11456	1.44	28227	1.46	0.02
CBB	B10	CC07	Westinghouse "Standard" Zirc-4	11670	1.44	28717	1.50	0.06
CBB	K14	CC24	Westinghouse "Standard" Zirc-4	11580	1.43	28324	1.45	0.02
CBB	F14	CC20	Westinghouse "Standard" Zirc-4	11321	1.44	28166	1.47	0.03
CBC	H2	CC50	Westinghouse "Standard" Zirc-4	10560	1.46	29151	1.45	-0.01
CBC	K6	BB55	Westinghouse "Standard" Zirc-4	14895	1.44	32595	1.46	0.02
CBC	F6	BB29	Westinghouse "Standard" Zirc-4	14723	1.42	23269	1.44	0.02
CBC	P8	CC38	Westinghouse "Standard" Zirc-4	10527	1.44	28877	5	0.01
CBC	B8	CC39	Westinghouse "Standard" Zirc-4	10778	1.46	29305	1.49	0.03
CBC	K10	BB47	Westinghouse "Standard" Zirc-4	14824	1.44	32318	1.46	0.02
CBC	F10	BB28	Westinghouse "Standard" Zirc-4	14703	1.44	32285	1.47	0.03
CBC	K15	CC14	Westinghouse "Standard" Zirc-4	10548	1.44	28746	1.47	0.03
CBD	M4	CC36	Westinghouse "Standard" Zirc-4	8988	1.43	29684	1.45	0.02
CBD	D4	CC17	Westinghouse "Standard" Zirc-4	9045	1.43	29779	1.44	0.01
CBD	H8	BB01	Westinghouse "Standard" Zirc-4	16111	1.46	33280	1.49	0.03
CBD	M12	CC35	Westinghouse "Standard" Zirc-4	8795	1.43	29537	1.45	0.02
CBD	D12	CC48	Westinghouse "Standard" Zirc-4	8982	1.43	29728	1.46	0.03
SBA	M2	CC29	Westinghouse "Standard" Zirc-4	8490	.6	21094	1.48	0.02
SBA	D2	CC44	Westinghouse "Standard" Zirc-4	8426	1.45	20341	1.46	0.01
SBA	P4	CC49	Westinghouse "Standard" Zirc-4	8544	1.44	20806	1.45	0.01
SBA	B4	CC53	Westinghouse "Standard" Zirc-4	8369	1.44	20800	1.46	0.02
SBA	P12	CC45	Westinghouse "Standard" Zirc-4	8573	1.43	20812	1.45	0.02
SBA	B12	CC06	Westinghouse "Standard" Zirc-4	8330	1.44	21005	1.47	0.03
SBA	M14	CC26	Westinghouse "Standard" Zirc-4	8304	1.43	20597	1.49	0.06
SBA	D14	CC27	Westinghouse "Standard" Zirc-4	8620	1.44	20952	1.48	0.04
SBB	J3	CC62	Westinghouse "Standard" Zirc-4	14393	1.43	34240	1.43	0.00
SBB	G3	CC21	Westinghouse "Standard" Zirc-4	14399	1.45	34104	1.45	0.00
SBB	N7	CC64	Westinghouse "Standard" Zirc-4	14487	1.45	33964	1.45	0.00
SBB	C7	CC08	Westinghouse "Standard" Zirc-4	14191	1.43	33941	1.48	0.05
SBB	N9	CC25	Westinghouse "Standard" Zirc-4	14555	1.46	34038	1.46	0.00
SBB	C9	CC42	Westinghouse "Standard" Zirc-4	14139	1.44	33777	1.45	0.01
SBB	J13	CC28	Westinghouse "Standard" Zirc-4	14166	1.45	33701	1.46	0.01
SBB	G13	CC54	Westinghouse "Standard" Zirc-4	14611	1.44	34288	1.46	0.02
SBC	E3	CC32	Westinghouse "Standard" Zirc-4	12689	1.43	31580	1.45	0.02
SBC	N5	CC19	Westinghouse "Standard" Zirc-4	12387	1.43	31451	1.46	0.03
SBC	C11	CC05	Westinghouse "Standard" Zirc-4	12833	1.44	31990	1.50	0.06
SBC	L13	CC57	Westinghouse "Standard" Zirc-4	12585	1.46	31557	1.44	-0.02
SBD	L3	CC02	Westinghouse "Standard" Zirc-4	12644	1.43	31838	1.46	0.03
SBD	C5	CC18	Westinghouse "Standard" Zirc-4	12797	1.45	31925	1.46	0.01
SBD	N11	CC47	Westinghouse "Standard" Zirc-4	12579	1.42	31737	1.44	0.02
SBD	E13	CC23	Westinghouse "Standard" Zirc-4	12583	1.43	31991	1.48	0.05
SBE	H4	CC12	Westinghouse "Standard" Zirc-4	11631	1.44	32527	1.48	0.04
SBE	M8	CC22	Westinghouse "Standard" Zirc-4	11278	1.44	31779	1.46	0.02
SBE	D8	CC13	Westinghouse "Standard" Zirc-4	11683	1.43	32284	1.46	0.03
SBE	H12	CC10	Westinghouse "Standard" Zirc-4	11282	1.44	31778	1.46	0.02
			Average Rod Drop Time:		**1.44**		**1.46**	
			Standard Deviation:		**0.012**		**0.017**	

Comanche Peak - Unit 2, Cycle 02
2RF02 Control Rod Drive Shaft UNLATCH

Rod Bank	Core Loc	Assm ID	Fuel Type	RCCA Drag Force (lbs) Dashpot Region	Out of Dashpot Region
CBA	H6	CC43	Westinghouse "Standard" Zirc-4	25	Not Available *
CBA	K8	CC09	Westinghouse "Standard" Zirc-4	45	Not Available *
CBA	F8	CC34	Westinghouse "Standard" Zirc-4	25	Not Available *
CBA	H10	CC58	Westinghouse "Standard" Zirc-4	20	Not Available *
CBB	K2	CC40	Westinghouse "Standard" Zirc-4	25	Not Available *
CBB	F2	CC41	Westinghouse "Standard" Zirc-4	20	Not Available *
CBB	P6	CC52	Westinghouse "Standard" Zirc-4	30	Not Available *
CBB	B6	CC37	Westinghouse "Standard" Zirc-4	10	Not Available *
CBB	P10	CC60	Westinghouse "Standard" Zirc-4	25	Not Available *
CBB	B10	CC07	Westinghouse "Standard" Zirc-4	15	Not Available *
CBB	K14	CC24	Westinghouse "Standard" Zirc-4	15	Not Available *
CBB	F14	CC20	Westinghouse "Standard" Zirc-4	25	Not Available *
CBC	H2	CC50	Westinghouse "Standard" Zirc-4	20	Not Available *
CBC	K6	BB55	Westinghouse "Standard" Zirc-4	15	Not Available *
CBC	F6	BB29	Westinghouse "Standard" Zirc-4	25	Not Available *
CBC	P8	CC38	Westinghouse "Standard" Zirc-4	25	Not Available *
CBC	B8	CC39	Westinghouse "Standard" Zirc-4	10	Not Available *
CBC	K10	BB47	Westinghouse "Standard" Zirc-4	15	Not Available *
CBC	F10	BB28	Westinghouse "Standard" Zirc-4	25	Not Available *
CBC	H14	CC14	Westinghouse "Standard" Zirc-4	30	Not Available *
CBD	M4	CC36	Westinghouse "Standard" Zirc-4	30	Not Available *
CBD	D4	CC17	Westinghouse "Standard" Zirc-4	15	Not Available *
CBD	H8	BB01	Westinghouse "Standard" Zirc-4	35	Not Available *
CBD	M12	CC35	Westinghouse "Standard" Zirc-4	30	Not Available *
CBD	D12	CC48	Westinghouse "Standard" Zirc-4	25	Not Available *
SBA	M2	CC29	Westinghouse "Standard" Zirc-4	20	Not Available *
SBA	D2	CC44	Westinghouse "Standard" Zirc-4	15	Not Available *
SBA	P4	CC49	Westinghouse "Standard" Zirc-4	30	Not Available *
SBA	B4	CC53	Westinghouse "Standard" Zirc-4	10	Not Available *
SBA	P12	CC45	Westinghouse "Standard" Zirc-4	25	Not Available *
SBA	B12	CC06	Westinghouse "Standard" Zirc-4	15	Not Available *
SBA	M14	CC26	Westinghouse "Standard" Zirc-4	20	Not Available *
SBA	D14	CC27	Westinghouse "Standard" Zirc-4	20	Not Available *
SBB	J3	CC62	Westinghouse "Standard" Zirc-4	30	Not Available *
SBB	G3	CC21	Westinghouse "Standard" Zirc-4	30	Not Available *
SBB	N7	CC64	Westinghouse "Standard" Zirc-4	20	Not Available *
SBB	C7	CC08	Westinghouse "Standard" Zirc-4	10	Not Available *
SBB	N9	CC25	Westinghouse "Standard" Zirc-4	30	Not Available *
SBB	C9	CC42	Westinghouse "Standard" Zirc-4	10	Not Available *
SBB	J13	CC28	Westinghouse "Standard" Zirc-4	25	Not Available *
SBB	G13	CC54	Westinghouse "Standard" Zirc-4	30	Not Available *
SBC	E3	CC32	Westinghouse "Standard" Zirc-4	30	Not Available *
SBC	N5	CC19	Westinghouse "Standard" Zirc-4	35	Not Available *
SBC	C11	CC05	Westinghouse "Standard" Zirc-4	30	Not Available *
SBC	L13	CC57	Westinghouse "Standard" Zirc-4	20	Not Available *
SBD	L3	CC02	Westinghouse "Standard" Zirc-4	35	Not Available *
SBD	C5	CC18	Westinghouse "Standard" Zirc-4	15	Not Available *
SBD	N11	CC47	Westinghouse "Standard" Zirc-4	25	Not Available *
SBD	E13	CC23	Westinghouse "Standard" Zirc-4	20	Not Available *
SBE	H4	CC12	Westinghouse "Standard" Zirc-4	30	Not Available *
SBE	M8	CC22	Westinghouse "Standard" Zirc-4	35	Not Available *
SBE	D8	CC15	Westinghouse "Standard" Zirc-4	20	Not Available *
SBE	H12	CC10	Westinghouse "Standard" Zirc-4	20	Not Available *

* In accordance with Operations procedures, the Control Rod Drive Shafts were not lifted out of the dashpot region during unlatching.

Comanche Peak - Unit 1, Cycle 05

Rod Bank	Core Loc	Assm ID	Fuel Type	Startup BOC Burnup (MWD/MTU)	Startup BOC Time (sec)	11-Apr-96 Burnup (MWD/MTU)	11-Apr-96 Time (sec)	Delta (sec)
CBA	H-06	F63	Siemens "PCA-2" Zirc-4	22780	1.45	37356	1.49	0.04
CBA	H-10	F81	Siemens "PCA-2" Zirc-4	23180	1.46	37699	1.49	0.03
CBA	F-08	F53	Siemens "PCA-2" Zirc-4	23030	1.43	37645	1.48	0.05
CBA	K-08	F11	Siemens "PCA-2" Zirc-4	22803	1.48	37357	1.46	-0.02
CBB	F-02	F75	Siemens "PCA-2" Zirc-4	16316	1.49	30013	1.51	0.02
CBB	B-10	F65	Siemens "PCA-2" Zirc-4	16620	1.45	30300	1.47	0.02
CBB	K-14	F04	Siemens "PCA-2" Zirc-4	16830	1.46	30554	1.47	0.01
CBB	P-06	F40	Siemens "PCA-2" Zirc-4	16435	1.44	30184	1.45	0.01
CBB	B-06	F39	Siemens "PCA-2" Zirc-4	16169	1.43	29974	1.48	0.05
CBB	F-14	F58	Siemens "PCA-2" Zirc-4	16387	1.45	30332	1.46	0.01
CBB	P-10	F61	Siemens "PCA-2" Zirc-4	16970	1.46	30571	1.45	-0.01
CBB	K-02	F37	Siemens "PCA-2" Zirc-4	16656	1.46	30563	1.47	0.01
CBC	H-02	F20	Siemens "PCA-2" Zirc-4	20665	1.46	34055	1.47	0.01
CBC	B-08	F34	Siemens "PCA-2" Zirc-4	21081	1.44	34378	1.46	0.02
CBC	H-14	F01	Siemens "PCA-2" Zirc-4	20916	1.47	34084	1.47	0.00
CBC	P-08	F48	Siemens "PCA-2" Zirc-4	20810	1.45	33949	1.45	0.00
CBC	F-06	F13	Siemens "PCA-2" Zirc-4	20842	1.41	35651	1.47	0.06
CBC	F-10	F73	Siemens "PCA-2" Zirc-4	21092	1.43	35954	1.47	0.04
CBC	K-10	F24	Siemens "PCA-2" Zirc-4	20963	1.46	35834	1.50	0.04
CBC	K-06	F16	Siemens "PCA-2" Zirc-4	20758	1.45	35595	1.46	0.01
CBD	D-04	F27	Siemens "PCA-2" Zirc-4	19016	1.46	33606	1.45	-0.01
CBD	M-12	F55	Siemens "PCA-2" Zirc-4	19269	1.46	33966	1.45	-0.01
CBD	D-12	F02	Siemens "PCA-2" Zirc-4	19225	1.45	33950	1.45	0.00
CBD	M-04	F82	Siemens "PCA-2" Zirc-4	19273	1.49	33815	1.52	0.03
CBD	H-08	C53	Westinghouse "Standard" Zirc-4	16107	1.46	29521	1.50	0.04
SBA	D-02	F46	Siemens "PCA-2" Zirc-4	23425	1.46	31448	1.47	0.01
SBA	B-12	F30	Siemens "PCA-2" Zirc-4	23198	1.47	31160	1.47	0.00
SBA	M-14	F60	Siemens "PCA-2" Zirc-4	23144	1.46	31201	1.47	0.01
SBA	P-04	F50	Siemens "PCA-2" Zirc-4	23108	1.47	31251	1.46	-0.01
SBA	B-04	F87	Siemens "PCA-2" Zirc-4	23431	1.44	31509	1.47	0.03
SBA	D-14	F68	Siemens "PCA-2" Zirc-4	23359	1.47	31444	1.48	0.01
SBA	P-12	F08	Siemens "PCA-2" Zirc-4	23691	1.48	31733	1.48	0.00
SBA	M-02	F71	Siemens "PCA-2" Zirc-4	23450	1.46	31450	1.46	0.00
SBB	G-03	F36	Siemens "PCA-2" Zirc-4	20281	1.45	34688	1.47	0.02
SBB	C-09	F41	Siemens "PCA-2" Zirc-4	20012	1.43	34462	1.48	0.05
SBB	J-13	F86	Siemens "PCA-2" Zirc-4	20203	1.44	34568	1.46	0.02
SBB	N-07	F18	Siemens "PCA-2" Zirc-4	19974	1.45	34308	1.47	0.02
SBB	C-07	F28	Siemens "PCA-2" Zirc-4	19959	1.47	34388	1.47	0.00
SBB	G-13	F66	Siemens "PCA-2" Zirc-4	20099	1.48	34485	1.48	0.00
SBB	N-09	F33	Siemens "PCA-2" Zirc-4	20211	1.45	34458	1.45	0.00
SBB	J-03	F67	Siemens "PCA-2" Zirc-4	20145	1.43	34589	1.45	0.02
SBC	E-03	F14	Siemens "PCA-2" Zirc-4	13121	1.46	28298	1.45	-0.01
SBC	C-11	F69	Siemens "PCA-2" Zirc-4	12775	1.45	28248	1.44	-0.01
SBC	L-13	F74	Siemens "PCA-2" Zirc-4	13069	1.45	28541	1.45	0.00
SBC	N-05	F54	Siemens "PCA-2" Zirc-4	13106	1.45	28329	1.46	0.01
SBD	C-05	F72	Siemens "PCA-2" Zirc-4	13223	1.43	28657	1.45	0.02
SBD	E-13	F57	Siemens "PCA-2" Zirc-4	13402	1.46	28779	1.47	0.01
SBD	N-11	F15	Siemens "PCA-2" Zirc-4	12979	1.44	28403	1.45	0.01
SBD	L-03	F79	Siemens "PCA-2" Zirc-4	13073	1.44	28392	1.46	0.02
SBE	H-04	F10	Siemens "PCA-2" Zirc-4	22759	1.45	37159	1.48	0.03
SBE	D-08	F23	Siemens "PCA-2" Zirc-4	22916	1.45	37377	1.45	0.00
SBE	H-12	F42	Siemens "PCA-2" Zirc-4	23042	1.47	37316	1.48	0.01
SBE	M-08	F12	Siemens "PCA-2" Zirc-4	22931	1.47	37242	1.44	-0.03
			Average Rod Drop Time:		**1.45**		**1.47**	
			Standard Deviation:		**0.016**		**0.017**	