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LaSalle Generating Station
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ComEd

April 28, 2000

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Unit 2
Facility Operating License No. NPF-18
NRC Docket No. 50-374

Subject: Supplement to a Request for Technical Specification Change to Revise MCPR Safety Limit for LaSalle County Station, Unit 2.

(1) Letter from R. M. Krich to USNRC, "Application for Amendment to Appendix A, Technical Specifications, Minimum Critical Power Ratio," dated February 28, 2000.

(2) Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors/Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors: Methodology for Analysis of Assembly Channel Bowing Effects/NRC Correspondence, XN-NF-524(P)(A) Revision 2 and Supplement 1 Revision 2, Supplement 2, Advanced Nuclear Fuels Corporation November 1990. (Technical Specification (TS) 6.6.A.6.b.(3))

(3) ANFB Critical Power Correlation, ANF-1125(P)(A) and Supplements 1 and 2, Advanced Nuclear Fuels Corporation, April 1990. (TS 6.6.A.6.b.(1))

(4) ANFB Critical Power Correlation Determination of ATRIUM 9B Additive Constant Uncertainties, ANF-1125(P)(A), Supplement 1, Appendix E, Siemens Power Corporation, September 1998. (TS 6.6.A.6.b.(25))

A001

(5) ANFB Critical Power Correlation Application for CoResident Fuel, EMF-1125(P)(A), Supplement 1, Appendix C, Siemens Power Corporation, August 1997. (TS) 6.6.A.6.b.(24))

In Reference 1, Commonwealth Edison (ComEd) Company requested approval of a license amendment for a Technical Specifications (TS) change to revise the Minimum Critical Power Ratio (MCPR) safety limit for LaSalle County Station, Unit 2. The Unit 2 MCPR safety limit TS change was requested to support operating Unit 2 at uprated power conditions up to the installed capacity of the unit. Installed capacity is considered the capability of the unit to operate at a proposed power level, without major modifications to the turbine generator.

A telephone conference call was held on April 20, 2000 with the NRC project manager and a technical reviewer, to discuss questions related to the review of ComEd's proposed TS change. This letter provides additional information received since our Reference 1 submittal and the supplemental information requested during this telephone conference call.

ComEd submitted in Reference 1, a proposed TS change to the Unit 2 MCPR safety limit to support operation at uprated power conditions. The Unit 2 submittal was based on the recent NRC approval of a Unit 1 MCPR safety limit change submittal, which was analyzed at uprated power conditions and 24-month operating cycle, as confirmatory calculations for Unit 2 at the proposed uprated power were not completed. Since the Reference 1 submittal, Siemens Power Corporation (SPC) has completed the confirmatory Unit 2 calculations. The MCPR safety limit calculations for the current Unit 2 mid-cycle (L2C8) operation was performed assuming a 5% power uprate. The MCPR safety limit calculation used rod patterns that were based on L2C8's operation at the licensed power level of 105% of current rated thermal power. SPC's calculations demonstrate that a Unit 2 MCPR safety limit of 1.09 for two loop operation and a MCPR safety limit of 1.10 for single loop operation ensure that less than 0.1% of the rods are predicted to experience boiling transition during normal operation and any anticipated operational occurrence. The results of the calculations demonstrate that the proposed TS changes to the Unit 2 MCPR safety limits of 1.11 for two loop operation and 1.12 for single loop operation, are conservative.

The SPC MCPR safety limit methods are described in Reference 2, which use the Advanced Nuclear Fuels Corporation (ANFB) critical power correlation described in Reference 3. The MCPR safety limit is established to ensure that 99.9% of the fuel rods in the core are expected to avoid boiling

transition during the limiting transient event. The MCPR safety limit is determined through a statistical convolution of the uncertainties associated with the parameters used in calculating MCPR. These include fuel monitoring and plant measurement uncertainties associated with core monitoring (such as feedwater flow, core flow, and radial bundle power). The MCPR safety limit is calculated based on parameters dependent on the fuel and core design (i. e., loading pattern, control rod patterns, cycle exposure). The current core, L2C8, is a mixed core of SPC ATRIUM 9B and General Electric (GE) 9 fuel. The methodology described in Reference 2 specifically incorporates the use of the NRC approved ANFB uncertainties for ATRIUM 9B fuel (Reference 4), and the NRC approved methodology for applying the ANFB critical power correlation and associated uncertainties to the co-resident GE 9 fuel (Reference 5).

In addition, ComEd is enclosing the core maps for Unit 2 Cycle 8. These maps provide data on fuel types and the loading patterns, including the cycles in which each fuel type was inserted into the core.

The no significant hazards consideration submitted in Reference 1 remains unchanged by the supplemental information provided.

Should you have any questions concerning this letter, please contact Mr. Frank A. Spangenberg, III, Regulatory Assurance Manager, at (815) 357-6761, extension 2383.

Respectfully,

Charles G. Pardee
Site Vice President
LaSalle County Station

Attachment: Core Maps for Unit 2 Cycle 8

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – LaSalle County Station

STATE OF ILLINOIS	)	
IN THE MATTER OF	)	
COMMONWEALTH EDISON COMPANY	)	
LASALLE COUNTY STATION - UNIT 2	)	Docket No. 50-374

Subject: Supplement to a Request for Technical Specification Change to Revise MCPR Safety Limit for LaSalle County Station, Unit 2.

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

Charles G. Pardee
Site Vice President
LaSalle County Station

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 28th day of April, 2000.
My Commission expires on 10-1, 2000.

OFFICIAL SEAL
DEBRA J. FEENEY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES10-1-2000

Debra J. Feeney
Notary Public

ATTACHMENT
Core Maps
LaSalle County Station, Unit 2, Cycle 8

Figure 1
LaSalle Unit 2 Cycle 8
Core Loading Plan

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	
60									YJ0604	YJ0660	YJ0652	YJ0669	YJ0489	YJ0633	YJ0666	60
58								YJ0615	YJ5922	YJ5906	YJ5930	YJ5938	28B249	YJA264	YJA360	58
56						YJ0599	YJ0602	YJA274	YJA323	28B129	YJ5757	YJ5813	YJA285	28B130	YJ5828	56
54						YJ0594	YJA253	YJA277	28B133	28A001	YJ5827	YJ5932	28B134	28A002	YJ5841	54
52					YJ0673	YJ0681	YJA320	28A026	28B138	YJ5853	28A005	28B139	28A006	YJ5845	28A007	52
50			YJ0686	YJ0643	YJ0632	YJ0641	28B143	28A011	YJA325	28A020	28B145	YJ5754	YJA288	28B155	YJA359	50
48			YJ0654	YJA287	YJA279	28B149	YJ5791	YJA390	28B150	YJA348	YJ5850	YJ5862	28A015	YJA260	YJ5858	48
46		YJ0613	YJA280	YJA313	28A035	28A017	YJA387	YJ5915	YJ5811	28B154	YJ5840	YJ5848	YJA409	28A012	YJ5875	46
44	YJ0617	YJ5928	YJA286	28B159	28B160	YJA275	28B161	YJ5808	28B162	YJ5920	28A019	YJA269	28B144	YJA408	28A021	44
42	YJ0639	YJ5943	28B167	28A025	YJ5790	28A041	YJA402	28B169	YJ5912	28B170	YJA411	28A027	YJ5734	28B137	YJA259	42
40	YJ0640	YJ5914	YJ5812	YJ5833	28A031	28B175	YJ5826	YJ5821	28A032	YJA363	YJ5888	YJ5935	28B176	YJA382	YJ5737	40
38	YJ0659	YJ5942	YJ5800	YJ5921	28B179	YJ5820	YJ5832	YJ5797	YJA293	28A051	YJ5910	YJ5923	YJA361	28A036	YJ5822	38
36	YJ0487	28B251	YJA318	28B181	28A039	YJA294	28A040	YJA374	28B168	YJ5792	28B182	YJA365	28A042	YJ5834	28A043	36
34	YJ0603	YJA249	28B185	28A049	YJ5810	28B186	YJA255	28A050	YJA373	28B153	YJA371	28A052	YJ5744	28A053	YJA383	34
32	YJ0601	YJA355	YJ5799	YJ5798	28A059	YJA380	YJ5844	YJ5908	28A060	YJA276	YJ5796	YJ5809	28A061	YJA369	YJ5913	32
30	YJ0575	YJA354	YJ5775	YJ5774	28A065	YJA412	YJ5732	YJ5902	28A066	YJA272	YJ5772	YJ5761	28A067	YJA414	YJ5874	30
28	YJ0577	YJA252	28B189	28A071	YJ5762	28B190	YJA332	28A072	YJA391	28B219	YJA397	28A074	YJ5763	28A075	YJA385	28
26	YJ0473	28B253	YJA344	28B193	28A081	YJA299	28A082	YJA392	28B204	YJ5786	28B194	YJA401	28A084	YJ5742	28A085	26
24	YJ0521	YJ5884	YJ5776	YJ5885	28B197	YJ5851	YJ5740	YJ5773	YJA298	28A073	YJ5900	YJ5887	YJA419	28A092	YJ5724	24
22	YJ0538	YJ5894	YJ5764	YJ5741	28A095	28B199	YJ5748	YJ5755	28A096	YJA405	YJ5893	YJ5939	28B200	YJA420	YJ5719	22
20	YJ0537	YJ5867	28B203	28A099	YJ5784	28A083	YJA366	28B205	YJ5892	28B206	YJA351	28A101	YJ5777	28B235	YJA267	20
18	YJ0567	YJ5882	YJA303	28B211	28B212	YJA316	28B213	YJ5760	28B214	YJ5866	28A105	YJA327	28B230	YJA421	28A107	18
16		YJ0563	YJA311	YJA333	28A091	28A111	YJA393	YJ5895	YJ5714	28B220	YJ5736	YJ5730	YJA413	28A116	YJ5871	16
14			YJ0530	YJA304	YJA310	28B225	YJ5785	YJA388	28B226	YJA407	YJ5718	YJ5716	28A113	YJA340	YJ5722	14
12			YJ0498	YJ0541	YJ0550	YJ5816	28B229	28A115	YJA334	28A106	28B231	YJ5723	YJA305	28B221	YJA399	12
10					YJ0509	YJ0539	YJA341	28A100	28B236	YJ5725	28A119	28B237	28A120	YJ5733	28A121	10
8						YJ0588	YJA321	YJA324	28B241	28A125	YJ5749	YJ5878	28B242	28A126	YJ5859	8
6						YJ0573	YJ0576	YJA326	YJA335	28B245	YJ5756	YJ5765	YJA302	28B246	YJ5750	6
4								YJ0565	YJ5886	YJ5904	YJ5880	YJ5945	28B255	YJA257	YJA347	4
2									YJ0578	YJ0522	YJ0528	YJ0505	YJ0471	YJ0551	YJ0518	2
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	

author: MYH

reviewer RSJ 12/14/98

Figure 1 (continued)
LaSalle Unit 2 Cycle 8
Core Loading Plan

	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	
60	YJ0667	YJ0634	YJ0490	YJ0680	YJ0657	YJ0663	YJ0607									60
58	YJA345	YJA266	28B250	YJ5870	YJ5931	YJ5907	YJ5925	YJ0620								58
56	YJ5829	28B131	YJA292	YJ5814	YJ5823	28B132	YJA312	YJA268	YJ0609	YJ0612						56
54	YJ5842	28A003	28B135	YJ5933	YJ5830	28A004	28B136	YJA270	YJA273	YJ0597						54
52	28A008	YJ5846	28A009	28B140	28A010	YJ5854	28B141	28A029	YJA317	YJ0646	YJ0676					52
50	YJA379	28B156	YJA289	YJ5856	28B146	28A023	YJA330	28A014	28B148	YJ5836	YJ0635	YJ0644	YJ0687			50
48	YJ5857	YJA254	28A016	YJ5863	YJ5861	YJA362	28B151	YJA381	YJ5794	28B152	YJA284	YJA290	YJ0655			48
46	YJ5940	28A013	YJA375	YJ5849	YJ5843	28B157	YJ5865	YJ5916	YJA376	28A018	28A038	YJA261	YJA283	YJ0622		46
44	28A022	YJA356	28B147	YJA281	28A024	YJ5941	28B163	YJ5819	28B164	YJA278	28B165	28B166	YJA291	YJ5929	YJ0618	44
42	YJA250	28B142	YJ5802	28A028	YJA358	28B171	YJ5919	28B172	YJA367	28A046	YJ5795	28A030	28B174	YJ5944	YJ0648	42
40	YJ5860	YJA349	28B177	YJ5936	YJ5918	YJA364	28A033	YJ5824	YJ5831	28B178	28A034	YJ5838	YJ5815	YJ5917	YJ0647	40
38	YJ5855	28A037	YJA350	YJ5924	YJ5911	28A056	YJA296	YJ5806	YJ5839	YJ5825	28B180	YJ5926	YJ5803	YJ5927	YJ0664	38
36	28A044	YJ5837	28A045	YJA368	28B183	YJ5793	28B173	YJA377	28A047	YJA295	28A048	28B184	YJA282	28B252	YJ0488	36
34	YJA384	28A054	YJ5743	28A055	YJA372	28B158	YJA378	28A057	YJA262	28B187	YJ5817	28A058	28B188	YJA265	YJ0608	34
32	YJ5937	YJA370	28A062	YJ5818	YJ5807	YJA263	28A063	YJ5909	YJ5847	YJA357	28A064	YJ5805	YJ5804	YJA346	YJ0610	32
30	YJ5877	YJA415	28A068	YJ5770	YJ5783	YJA271	28A069	YJ5903	YJ5735	YJA417	28A070	YJ5781	YJ5780	YJA352	YJ0584	30
28	YJA386	28A076	YJ5768	28A077	YJA398	28B224	YJA396	28A079	YJA339	28B191	YJ5769	28A080	28B192	YJA258	YJ0582	28
26	28A086	YJ5745	28A087	YJA404	28B195	YJ5787	28B209	YJA395	28A089	YJA300	28A090	28B196	YJA297	28B254	YJ0474	26
24	YJ5727	28A093	YJA424	YJ5934	YJ5901	28A078	YJA301	YJ5782	YJ5747	YJ5759	28B198	YJ5890	YJ5779	YJ5891	YJ0526	24
22	YJ5720	YJA423	28B201	YJ5876	YJ5898	YJA406	28A097	YJ5758	YJ5753	28B202	28A098	YJ5746	YJ5767	YJ5897	YJ0545	22
20	YJA256	28B240	YJ5778	28A102	YJA418	28B207	YJ5899	28B208	YJA403	28A088	YJ5789	28A104	28B210	YJ5868	YJ0546	20
18	28A108	YJA422	28B233	YJA328	28A110	YJ5869	28B215	YJ5771	28B216	YJA319	28B217	28B218	YJA308	YJ5883	YJ0568	18
16	YJ5872	28A117	YJA416	YJ5731	YJ5739	28B223	YJ5715	YJ5896	YJA394	28A112	28A094	YJA338	YJA314	YJ0572		16
14	YJ5729	YJA343	28A114	YJ5717	YJ5721	YJA410	28B227	YJA389	YJ5788	28B228	YJA315	YJA307	YJ0531			14
12	YJA400	28B222	YJA306	YJ5728	28B232	28A109	YJA337	28A118	28B234	YJ5864	YJ0553	YJ0542	YJ0499			12
10	28A122	YJ5801	28A123	28B238	28A124	YJ5726	28B239	28A103	YJA342	YJ0544	YJ0512					10
8	YJ5738	28A127	28B243	YJ5879	YJ5752	28A128	28B244	YJA331	YJA322	YJ0591						8
6	YJ5751	28B247	YJA309	YJ5766	YJ5852	28B248	YJA336	YJA329	YJ0583	YJ0586						6
4	YJA353	YJA251	28B256	YJ5873	YJ5881	YJ5905	YJ5889	YJ0570								4
2	YJ0519	YJ0552	YJ0472	YJ0516	YJ0533	YJ0525	YJ0581									2
	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	

author: MYH

reviewer ASJ 12/10/98

Figure 2
LaSalle Unit 2 Cycle 8
Bundle Type Loading Plan

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	
60									10	10	10	10	11	10	10	10	10	11	10	10	10	10									60
58								10	12	12	12	12	15	1	2	2	1	15	12	12	12	12	10								58
56						10	10	1	1	15	13	13	1	15	13	13	15	1	13	13	15	1	1	10	10						56
54						10	1	1	15	14	13	12	15	14	13	13	14	15	12	13	14	15	1	1	10						54
52					10	10	1	14	15	13	14	15	14	13	14	14	13	14	15	14	13	15	14	1	10	10					52
50			10	10	10	10	15	14	1	14	15	13	1	15	2	2	15	1	13	15	14	1	14	15	13	10	10	10			50
48			10	1	1	15	13	2	15	2	13	13	14	1	13	13	1	14	13	13	2	15	2	13	15	1	1	10			48
46		10	1	1	14	14	2	12	13	15	13	13	2	14	12	12	14	2	13	13	15	13	12	2	14	14	1	1	10		46
44	10	12	1	15	15	1	15	13	15	12	14	1	15	2	14	14	2	15	1	14	12	15	13	15	1	15	15	1	12	10	44
42	10	12	15	14	13	14	2	15	12	15	2	14	13	15	1	1	15	13	14	2	15	12	15	2	14	13	14	15	12	10	42
40	10	12	13	13	14	15	13	13	14	2	12	12	15	2	13	13	2	15	12	12	2	14	13	13	15	14	13	13	12	10	40
38	10	12	13	12	15	13	13	13	1	14	12	12	2	14	13	13	14	2	12	12	14	1	13	13	13	15	12	13	12	10	38
36	11	15	1	15	14	1	14	2	15	13	15	2	14	13	14	14	13	14	2	15	13	15	2	14	1	14	15	1	15	11	36
34	10	1	15	14	13	15	1	14	2	15	2	14	13	14	2	2	14	13	14	2	15	2	14	1	15	13	14	15	1	10	34
32	10	2	13	13	14	2	13	12	14	1	13	13	14	2	12	12	2	14	13	13	1	14	12	13	2	14	13	13	2	10	32
30	10	2	13	13	14	2	13	12	14	1	13	13	14	2	12	12	2	14	13	13	1	14	12	13	2	14	13	13	2	10	30
28	10	1	15	14	13	15	1	14	2	15	2	14	13	14	2	2	14	13	14	2	15	2	14	1	15	13	14	15	1	10	28
26	11	15	1	15	14	1	14	2	15	13	15	2	14	13	14	14	13	14	2	15	13	15	2	14	1	14	15	1	15	11	26
24	10	12	13	12	15	13	13	13	1	14	12	12	2	14	13	13	14	2	12	12	14	1	13	13	13	15	12	13	12	10	24
22	10	12	13	13	14	15	13	13	14	2	12	12	15	2	13	13	2	15	12	12	2	14	13	13	15	14	13	13	12	10	22
20	10	12	15	14	13	14	2	15	12	15	2	14	13	15	1	1	15	13	14	2	15	12	15	2	14	13	14	15	12	10	20
18	10	12	1	15	15	1	15	13	15	12	14	1	15	2	14	14	2	15	1	14	12	15	13	15	1	15	15	1	12	10	18
16		10	1	1	14	14	2	12	13	15	13	13	2	14	12	12	14	2	13	13	15	13	12	2	14	14	1	1	10		16
14			10	1	1	15	13	2	15	2	13	13	14	1	13	13	1	14	13	13	2	15	2	13	15	1	1	10			14
12			10	10	10	13	15	14	1	14	15	13	1	15	2	2	15	1	13	15	14	1	14	15	13	10	10	10			12
10					10	10	1	14	15	13	14	15	14	13	14	14	13	14	15	14	13	15	14	1	10	10					10
8						10	1	1	15	14	13	12	15	14	13	13	14	15	12	13	14	15	1	1	10						8
6						10	10	1	1	15	13	13	1	15	13	13	15	1	13	13	15	1	1	10	10						6
4								10	12	12	12	12	15	1	2	2	1	15	12	12	12	12	10								4
2									10	10	10	10	11	10	10	10	10	11	10	10	10	10									2
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	

Fuel Type	Bundle Name	Number of Bundles	ID Range	First Loaded
1	GE9B-P8CWB322-11GZ-100M-150-CECO	96	YJA249-YJA344	7
2	GE9B-P8CWB320-9GZ-100M-150-CECO	80	YJA345-YJA424	7
10	GE9B-P8CWB302-9GZ-100M-150-T	93	YJ0497-YJ0688	5
11	GE9B-P8CWB300-9GZ-100M-150-T	8	YJ0465-YJ0496	5
12	GE9B-P8CWB313-9GZ-100M-150-CECO	80	YJ5866-YJ5945	6
13	GE9B-P8CWB316-9GZ-100M-150-CECO	151	YJ5714-YJ5865	6
14	SPCA9-381B-13GZ7-80M	128	28A001-28A128	8
15	SPCA9-384B-11GZ6-80M	128	28B129-28B256	8

author: MYH

reviewer ASP 12/10/98