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DUKE POWER

April 22, 1997

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

April 11

Subject: Catawba Nuclear Station, Units 1 and 2
Dockets Nos. 50-413 and 50-414
Request for Additional Information Regarding the
Operating License Amendment for the Steam
Generator Tube Rupture Evaluation
(TAC Nos. M98107, M98108)

Per phone conference on April 21, 1997, the NRC requested clarification of details regarding the additional information submitted by Duke Power to the NRC in letters dated April 2, 1997, April 10, 1997 and April 16, 1997 for the Steam Generator PORV Technical Specification Amendment. The proposed amendment revises Section 3/4.7.1.6 of the Technical Specifications to require four instead of three steam generator power operated relief valves (PORVs) and Section 15.6.3 of the Updated Final Safety Analysis Report (UFSAR) to require four instead of three PORVs and allow credit for local manual operation of the PORVs. The additional information requested is provided in the enclosure and should supply the clarification necessary to complete the amendment request.

We request that you review the additional information on a schedule consistent with the urgency of the original request. If you need additional clarification of the response to the questions or have additional questions please contact Martha Purser at (803)-831-4015.

Sincerely,

A handwritten signature in dark ink, appearing to read 'William R. McCollum, Jr.'.

William R. McCollum, Jr.

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xc (with attachments):

L.A. Reyes, Regional Administrator, Region II

P.S. Tam, Senior Project Manager, ONRR

R.J. Freudenberger, Senior Resident Inspector, CNS

Clarification of Request for Additional Information for

Catawba Unit1 and Unit 2

Regarding Proposed Amendments for the Steam Generator PORVs

Reference: Phone Conference with the state NRR branch on April 21, 1997 and April 14, 1997 regarding letters from Duke Power to NRC dated April 2, 1997, April 10, 1997 and April 16, 1997.

Request: Please provide time dependent data and assumptions for Steam Generator Tube Rupture Dose Analysis.

Response:

The radiation doses of a steam generator (S/G) tube rupture (SGTR) with a failure which leaves a power operated relief valve on only one intact S/G available for operation from within the control room has been analyzed. The time dependent thermal hydraulic input used to calculate radiation doses following this SGTR are presented in Table 1.

Table 1
SGTR Thermal-Hydraulic Input Data

Time Span (Min)	Break Flow (lbm/min)	Flash Fraction	Steaming Rate (lbm/min)
0 - 20.15	3600	0.18023	64110
20.15 - 22.5	3558	0.26361	20625
22.5 - 25.5	3312	0.26361	16287
25.5 - 28.5	3222	0.24683	10397
28.5 - 31.5	3162	0.11714	9108
31.5 - 34.5	3162	0.11552	8450
34.5 - 37.5	3138	0.11333	7987
37.5 - 38.138	3138	0.11111	7788
38.138 - 39.5	3138	0.11111	7324
39.5 - 41.5	3090	0.11091	7324
41.5 - 43.5	3090	0.10864	7151
43.5 - 45.5	3060	0.10884	6993
45.5 - 47.5	3102	0.10663	4042
47.5 - 49.5	3090	0.10584	4042

Table 1, Continued			
Time Span (Min)	Break Flow (lbm/min)	Flash Fraction	Steaming Rate (lbm/min)
49.5 - 51.5	3054	0.10544	3915
51.5 - 53.5	3054	0.10425	3915
53.5 - 55.5	3024	0.10325	3805
55.5 - 57.5	3024	0.10226	2949
57.5 - 59.5	2916	0.09729	2885
59.5 - 61.5	2892	0.06672	2885
61.5 - 63.5	2790	0.05581	2830
63.5 - 65.5	2772	0.04753	2830
65.5 - 66.5	2730	0.04329	2781
66.5 - 67.5	2682	0.03913	2781
67.5 - 68.833	2628	0.03477	2781
68.833 - 70	2562	0.03477	2737
70 - 72	2562	0.03021	2737
72 - 74	2178	0.01959	2737
74 - 76	2280	0.01629	2737
76 - 76.785	2250	0.02016	2675
76.785 - 80	2232	0.02016	2675
80 - 82	2286	0.01067	2675
82 - 84	2058	0.00892	2626
84 - 86	792	0.00137	2626
86 - 88	1746	0	2626
88 - 90	1830	0	2584
90 - 92	1914	0	2584
92 - 94	1806	0	2584
94 - 96	1542	0	2546
96 - 98	1398	0	2546
98 - 100	1104	0	2546
100 - 102	966	0	2546
102 - 104	684	0	2502
104 - 106	528	0	2502
106 - 355	0	0	392.8

Additional information is given as follows: Letdown flow of 76 GPM is assumed for the first 20 minutes of the transient. The coolant inventory is put at 481,637 lbm. Integrated break flow is 285,000 lbm. The releases of steam from the ruptured S/G was found to be 1,281,000 lbm before trip and 491,500 lbm after trip. The figures presented here for integrated break flow and steam releases from the ruptured S/G supersede the corresponding information enclosed with the letter from W.R. McCollum to the USNRC, April 2, 1997.