NUCLEAR ENERGY BUSINESS OPERATIONS • GENERAL ELECTRIC COMPANY
SAN JOSE, CALIFORNIA 95125

GENERAL ELECTRIC

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TITLE LOCA ANALYSIS REPORT FOR DRESDEN UNITS 2, 3 AND QUAD CITIES 1,2 NUCLEAR POWER STATIONS

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ERRATA And ADDENDA SHEET

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NOTE: Correct all copies of the applicable publication as specified below.

ITEM	REFERENCES (SECTION, PAGE PARAGRAPH, LINE)	INSTRUCTIONS (CORRECTIONS AND ADDITIONS)
1.	Page v/vi	Replace with new page v/vi
2.	Page 3-2	Replace with new page 3-2
3.	Page 4-3	Replace with new page 4-3
4.	Page 4-15/4-16	Replace with new pages 4-15 and 4-16 (Change brackets in right-hand margin indicate areas where report has been revised.)

LIST OF TABLES

*Barrier fuel for the Barrier Fuel Demonstration Program

Table 1 (Continued)

Fuel Parameters: (Continued)

	Fuel Type	Fuel Bundle Geometry	Peak Technical Specification Linear Heat Generation Rate (kW/ft)	Design Axial Peaking Factor	Initial Minimum Critical Power Ratio
L.	P8DGB284**	8x8	13.4	1.57	1.2
M.	P8DGB263L**	8x8	13.4	1.57	1.2
N.	P8DGB263H**	8x8	13.4	1.57	1.2
O.	P8DGB298**	8x8	13.4	1.57	1.2
P.	P8DRB265L/ P8DGB265L**	8x8	13.4	1.57	1.2
Q.	BP8DRB283H	8x8	13.4	1.57	1.2
R.	BP8DRB282	8x8	13.4	1.57	1.2

**Barrier fuel for the Barrier Fuel Demonstration Program

4.5 RESULTS OF THE CHASTE ANALYSIS

This code is used, with suitable inputs from the other codes, to calculate the fuel cladding heatup rate, peak cladding temperature, peak local cladding oxidation, and core-wide metal-water reaction for large breaks. The detailed fuel model in CHASTE considers transient gap conductance, clad swelling and rupture, and metal-water reaction. The empirical core spray heat transfer and channel wetting correlations are built into CHASTE, which solves the transient heat transfer equations for the entire LOCA transient at a single axial plane in a single fuel assembly. Iterative applications of CHASTE determine the maximum permissible planar power where required to satisfy the requirements of 10CFR50.46 acceptance criteria.

The CHASTE results presented are:

- Peak Cladding Temperature versus time
- Peak Cladding Temperature versus Break Area
- Peak Cladding Temperature and Peak Local Oxidation versus Planar Average Exposure for the most limiting break size
- Maximum Average Planar Heat Generation Rate (MAPLHGR) versus Planar Average Exposure for the most limiting break size

A summary of the analytical results is given in Table 2. Table 3 lists the figures provided for this analysis. The MAPLHGR values for each fuel type for D2,3/QC1,2 are presented in Tables 4A through 4R.]

4.6 METHODS

In the following sections, it will be useful to refer to the methods used to analyze DBA, large breaks, and small breaks. For jet-pump reactors, these are defined as follows:

a. DBA Methods. LAMB/SCAT/SAFE/DBA-REFLOOD/CHASTE. Break size: DBA.

Table 4Q

MAPLHGR VERSUS AVERAGE PLANAR EXPOSURE

PLANT: Quad Cities 1,2 FUEL TYPE: BP8DRB283H]

Average Planar Exposure (MWd/t)	MAPLHGR (kW/ft)	PCT (°F)	Oxidation Fraction
200	11.2	2128	0.028
1,000	11.2	2121	0.028
5,000	11.7	2157	0.030
10,000	12.0	2192	0.033
15,000	12.0	2199	0.033
20,000	11.9	2195	0.033
25,000	11.4	2132	0.027
30,000	10.8	2051	0.038
35,000	10.3	1956	0.031
40,000	9.6	1841	0.009
45,000	9.0	1764	0.007

NOTE: Credit taken for the effects of pre-pressurization of the fuel rods.

Table 4R

MAPLHGR VERSUS AVERAGE PLANAR EXPOSURE

PLANT: Quad Cities 1,2 FUEL TYPE: BP8DRB282

Average Planar Exposure (MWd/t)	MAPLHGR (kW/ft)	PCT (°F)	Oxidation Fraction
200	11.2	2131	0.029
1,000	11.2	2128	0.028
5,000	11.8	2178	0.032
10,000	12.0	2188	0.032
15,000	12.1	2199	0.033
20,000	11.9	2192	0.033
25,000	11.4	2129	0.027
30,000	10.8	2047	0.038
35,000	10.3	1957	0.031
40,000	9.6	1840	0.009
45,000	8.9	1761	0.007

ATTACHMENT 4

NO SIGNIFICANT HAZARDS CONSIDERATION

Commonwealth Edison has evaluated the proposed Technical Specification amendment and determined that it does not represent a significant hazards consideration. Based on the criteria for defining a significant hazards cosideration established in 10 CFR 50.92(c), operation of Quad Cities Unit 2 in accordance with the proposed amendments will not:

1) involve a significant increase in the probability or consequences of an accident previously evaluated because:

   a) the amendments involve restrictions on the reactor power distribution during normal operation which of itself cannot initiate an accident and therefore does not increase the probability of an accident and

   b) these restrictions on power distribution are based on a reanalysis or re-evaluation of accident in accordance with NRC approved methods and are specifically provided to ensure that the consequences of accidents (LOCA) remain within the existing accident criteria established for Quad Cities.

2) create the possibility of a new or different kind of accident from any accident previously evaluated for the same rease on (1)a. above and

3) involve a significant reduction in the margin of safety since the amendments are specifically intended to ensure that the 10 CFR 50.46 ECCS criteria continue to be protected during operation.

In addition, the Commission itself has determined that fuel which is not significantly different from a previously accepted design conforms with the standards of 10 CFR 50.92 as indicated by example (i.) on page 14870, Volume 48, Number 67 of the Federal Register, dated April 1983.

In consideration of the above, Commonwealth Edison expects that NRC approval of these amendments should not be predicted on satisfactory resolution of public comments or intervention as provided by 10 CFR 50.91(a)(4).

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