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July 18, 1985

(608) 788-4000

In reply, please
refer to LAC-11015

DOCKET NO. 50-409

Mr. James G. Keppler, Regional Administrator
U. S. Nuclear Regulatory Commission
Directorate of Regulatory Operations
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

SUBJECT: DAIRYLAND POWER COOPERATIVE
LA CROSSE BOILING WATER REACTOR
PROVISIONAL OPERATING LICENSE NO. DPR-45
SPECIAL REPORT 85-01

Reference: (1) LACBWR Technical Specifications
Section 4.2.2.22, Action g.

Dear Mr. Keppler:

In accordance with the provisions of Reference (1), a Special Report is submitted covering results of sampling and analysis actions together with additional operational information for six separate occasions when reactor thermal power changed by more than 15% of Rated Thermal Power within one hour while in Operational Condition 1 and 2.

The separate occasions are discussed in sections 1, 2 and 3 as follows:

SECTION 1-----April 20, 1985
SECTION 2-----April 27, 1985
SECTION 3-----May 17, 1985
SECTION 4-----July 10, 1985
SECTION 5-----July 11, 1985
SECTION 6-----July 11, 1985

Each section provides a summary of operating data and radiological data for the time period prior to the thermal power change along with the results of the additional sampling required.

If there are any questions concerning this report, please contact us.

Sincerely,

DAIRYLAND POWER COOPERATIVE

James W. Taylor
James W. Taylor
General Manager

8507260296 850718
PDR ADOCK 05000409
S PDR

FL:PDB:sks
Attachments

PRIORITY ROUTING

FILE	SECOND
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
FILE	FILE

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AUG 22 1985
IFO

Mr. James G. Keppler, Regional Administrator
U. S. Nuclear Regulatory Commission

July 18, 1985
LAC-11015

cc: Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, DC 20555

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

Resident Inspector

INTRODUCTION

SPECIAL REPORT 85-01

LACBWR Technical Specifications, Section 4.2.2.22, Action g, requires sampling and analysis for Iodine-131, -133, and -135, as well as gross beta and gamma activity between 2 and 6 hours following a thermal power change of greater than 15% of rated thermal power within one hour. This special report is required to contain the information determined by the analysis plus additional information regarding reactor power history, fuel burnup, cleanup flow history, offgas activity levels and gross alpha activity levels.

SECTION 1

At 2052 on April 20, 1985, the reactor scrammed due to failure of a scram solenoid.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 0020, 04/21/85

Sample Results: Gross β - γ ----- .0728 $\mu\text{Ci/ml}$
I-131----- 5.38×10^{-4} $\mu\text{Ci/ml}$
I-133----- 6.36×10^{-3} $\mu\text{Ci/ml}$
I-135----- 8.41×10^{-3} $\mu\text{Ci/ml}$

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

2052, 04/18/85 - 2052, 04/20/85-----escalating slowly from 61%
to 70%.

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 1.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

2052, 04/18/85 - 2052, 04/20/85 -----41 gpm.

Primary Purification Decontamination Factors (β - γ)

Decon factors prior to the scram not available since this was the initial start-up following refueling.

0036, 04/25/85 -----882:1

(4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

1600-2400, 04/18/85	-----	141 Ci/day
0000-0800, 04/19/85	-----	114 Ci/day
0800-1600, 04/19/85	-----	148 Ci/day
1600-2400, 04/19/85	-----	156 Ci/day
0000-0800, 04/20/85	-----	176 Ci/day
0800-1600, 04/20/85	-----	183 Ci/day

(5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0252, 03/07/85	-----	7.48×10^{-8} $\mu\text{Ci/ml}$
2052, 04/20/85	-----	Rated Thermal Power Change
0032, 04/25/85	-----	7.83×10^{-8} $\mu\text{Ci/ml}$

SECTION 2

At 0721 on April 27, 1985, the reactor scrambled due to Low Reactor Water Level while transferring from 1B to 1A Reactor Feed Pump.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 1240, 04/27/85

Sample Results: Gross β - γ -----0.0618 μ Ci/ml
I-131----- 7.03×10^{-4} μ Ci/ml
I-133----- 5.88×10^{-3} μ Ci/ml
I-135----- 6.77×10^{-3} μ Ci/ml

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

0721, 04/25/85 - 0721, 04/27/85 -----escalating slowly from 76%
to 82%

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 1.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

0721, 04/25/85 - 0721, 04/27/85 ----- 41 gpm.

Primary Purification Decontamination Factors (β - γ)

0036, 04/25/85 ----- 882:1
0044, 04/29/85 ----- 1157:1

- (4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

0000-0800, 04/25/85 ----- 123 Ci/day
0800-1600, 04/25/85 ----- 124 Ci/day
1600-2400, 04/25/85 ----- 125 Ci/day
0000-0800, 04/26/85 ----- 128 Ci/day
0800-1600, 04/26/85 ----- 140 Ci/day
1600-2400, 04/26/85 ----- 140 Ci/day

- (5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0032, 04/25/85 ----- 7.83×10^{-8} μ Ci/ml
0721, 04/27/85 -----Rated Thermal Power Change
0042, 04/29/85 ----- 2.48×10^{-7} μ Ci/ml

SECTION 3

At 0405 on May 17, 1985, the reactor scrammed due to a low Control Rod Drive gas or oil signal.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 0725, 05/17/85

Sample Results: Gross β - γ ----- .139 $\mu\text{Ci/ml}$
I-131----- 1.15×10^{-3} $\mu\text{Ci/ml}$
I-133----- 1.22×10^{-2} $\mu\text{Ci/ml}$
I-135----- 1.47×10^{-2} $\mu\text{Ci/ml}$

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

0405, 05/15/85 - 0405, 05/17/85----- ~ 97%.

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 2.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

0405, 05/15/85 - 0405, 05/17/85 ----- 42 gpm.

Primary Purification Decontamination Factors (β - γ)

0220, 05/16/85 ----- 1064:1

0144, 05/20/85 ----- 737:1

- (4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

0000-0800, 05/15/85 ----- 171 Ci/day

0800-1600, 05/15/85 ----- 170 Ci/day

1600-2400, 05/15/85 ----- 187 Ci/day

0000-0800, 05/16/85 ----- 193 Ci/day

0800-1600, 05/16/85 ----- 194 Ci/day

1600-2400, 05/16/85 ----- 192 Ci/day

- (5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0222, 05/16/85 ----- 8.45×10^{-8} $\mu\text{Ci/ml}$

0405, 05/17/85 ----- Rated Thermal Power Change

0145, 05/20/85 ----- 6.01×10^{-8} $\mu\text{Ci/ml}$

SECTION 4

At 0850 on July 10, 1985, the reactor power dropped from 97% to 47% when the 1A Forced Circulation Loop was isolated due to the closing of the 1A FCP Discharge Valve.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 1124, 07/10/85

Sample Results: Gross β - γ ----- .212 $\mu\text{Ci/ml}$
I-131----- 1.23×10^{-3} $\mu\text{Ci/ml}$
I-133----- 1.26×10^{-2} $\mu\text{Ci/ml}$
I-135----- 2.68×10^{-2} $\mu\text{Ci/ml}$

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

0850, 07/08/85 - 0850, 07/10/85----- ~ 97%.

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 3.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

0850, 07/08/85 - 0850, 07/10/85 ----- 42 gpm.

Primary Purification Decontamination Factors (β - γ)

0052, 07/08/85 ----- 1195:1

0034, 07/11/85 ----- 775:1

- (4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

0800-1600, 07/08/85 ----- 154 Ci/day

1600-2400, 07/08/85 ----- 154 Ci/day

0000-0800, 07/09/85 ----- 154 Ci/day

0800-1600, 07/09/85 ----- 156 Ci/day

1600-2400, 07/09/85 ----- 155 Ci/day

0000-0800, 07/10/85 ----- 154 Ci/day

- (5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0050, 07/08/85 ----- 8.07×10^{-8} $\mu\text{Ci/ml}$

0850, 07/10/85 ----- Rated Thermal Power Change

0032, 07/11/85 ----- $< 4.48 \times 10^{-8}$ $\mu\text{Ci/ml}$

SECTION 5

At 1000 on July 11, 1985, the reactor power dropped from ~ 50% to ~ 30% when the 1A Forced Circulation Loop was isolated due to the closing of the 1A FCP Discharge Valve.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 1310, 07/11/85

Sample Results: Gross β - γ ----- .158 $\mu\text{Ci/ml}$
I-131----- 8.32×10^{-4} $\mu\text{Ci/ml}$
I-133----- 8.52×10^{-3} $\mu\text{Ci/ml}$
I-135----- 1.83×10^{-2} $\mu\text{Ci/ml}$

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

1000, 07/09/85 - 0850, 07/10/85 ----- ~ 97%
0850, 07/10/85 -----dropped to 45%
0850, 07/10/85 - 1000, 07/11/85---escalating slowly from 45% to 50%.

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 3.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

1000, 07/09/85 - 1000, 07/11/85 ----- 42 gpm.

Primary Purification Decontamination Factors (β - γ)

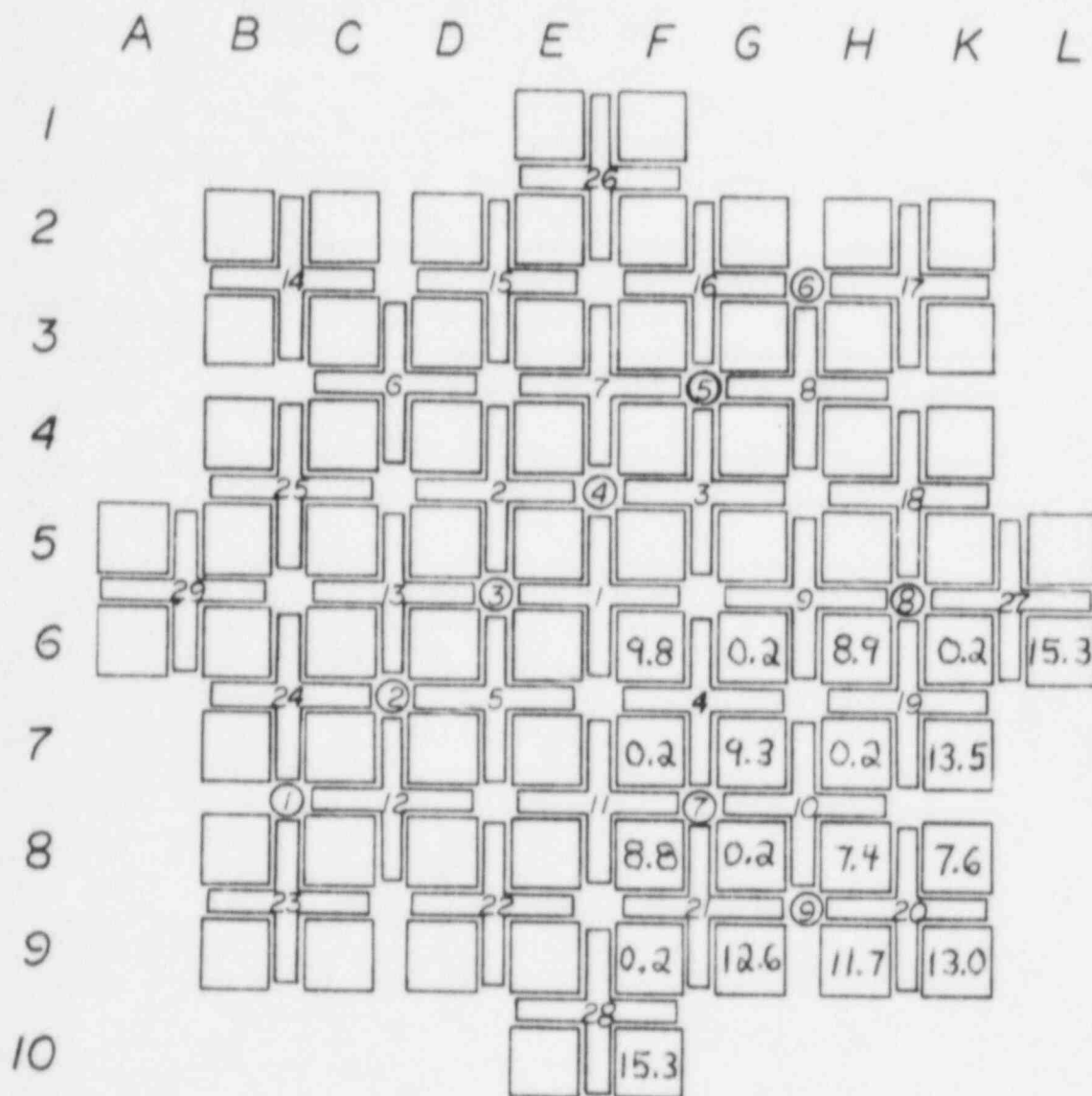
0034, 07/11/85 ----- 775:1
0223, 07/15/85 ----- 1470:1

- (4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

0800-1600, 07/09/85 ----- 156 Ci/day
1600-2400, 07/09/85 ----- 155 Ci/day
0000-0800, 07/10/85 ----- 154 Ci/day
0800-1600, 07/10/85 ----- 42 Ci/day
1600-2400, 07/10/85 ----- 48 Ci/day
0000-0800, 07/11/85 ----- 50 Ci/day

- (5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0032, 07/11/85 ----- $< 4.48 \times 10^{-8}$ $\mu\text{Ci/ml}$
1000, 07/11/85 -----Rated Thermal Power Change
0221, 07/15/85 ----- $< 4.86 \times 10^{-8}$ $\mu\text{Ci/ml}$



↓
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Figure 1:

Quarter Core Fuel Exposure Distribution
(GWD/MTU) as of April 27, 1985. The Core
Average Exposure is 7.531 GWD/MTU.

SECTION 6

At 1420 on July 11, 1985, the reactor power dropped from ~ 45% to ~ 25% when the 1A Forced Circulation Loop was isolated due to the closing of the 1A FCP Discharge Valve.

GROSS β - γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 1717, 07/11/85

Sample Results: Gross β - γ ----- .162 μ Ci/ml
I-131----- 8.57×10^{-4} μ Ci/ml
I-133----- 9.95×10^{-3} μ Ci/ml
I-135----- 2.20×10^{-2} μ Ci/ml

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to thermal power change:

1420, 07/09/85 - 0850, 07/10/85 ----- ~ 97%
0850, 07/10/85 - 1420, 07/11/85 ----- operating
between 30% to 50% power while investigating valve problems.

- (2) The approximate fuel burnup of assemblies in a symmetrical core region is shown in Figure 3.

- (3) Cleanup Flow History starting 48 hours prior to thermal power change:

Primary Purification Flow Rate

1420, 07/09/85 - 1420, 07/11/85 ----- 42 gpm.

Primary Purification Decontamination Factors (β - γ)

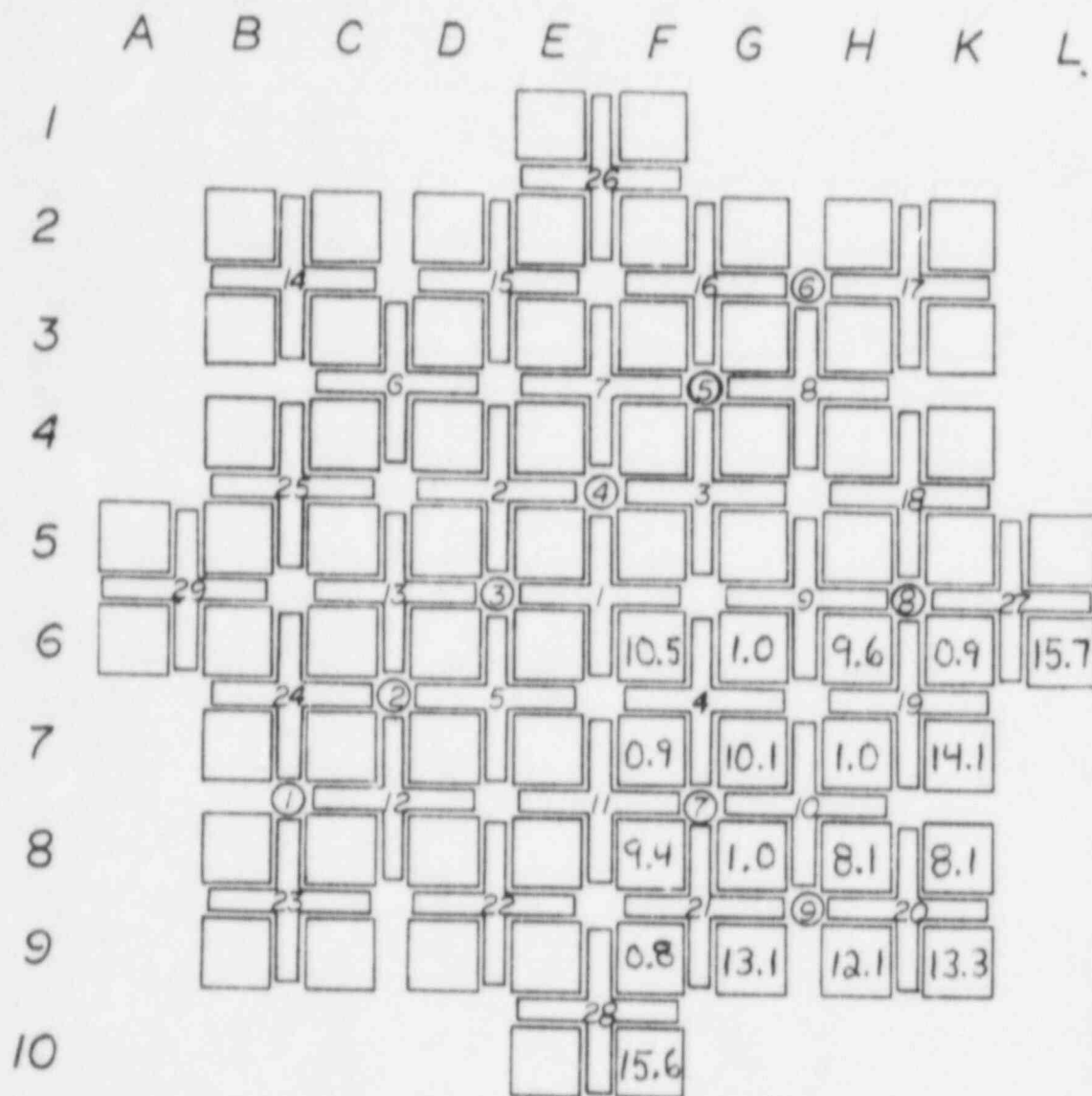
0034, 07/11/85 ----- 775:1
0223, 07/15/85 ----- 1470:1

- (4) Offgas Activity Levels Starting 48 Hours Prior to Thermal Power Change:

0800-1600, 07/09/85 ----- 156 Ci/day
1600-2400, 07/09/85 ----- 155 Ci/day
0000-0800, 07/10/85 ----- 154 Ci/day
0800-1600, 07/10/85 ----- 42 Ci/day
1600-2400, 07/10/85 ----- 48 Ci/day
0000-0800, 07/11/85 ----- 50 Ci/day

- (5) Gross Alpha Activity Level Starting With Sample Prior to Thermal Power Change:

0032, 07/11/85 ----- $< 4.48 \times 10^{-8}$ μ Ci/ml
1420, 07/11/85 ----- Rated Thermal Power Change
0221, 07/15/85 ----- $< 4.86 \times 10^{-8}$ μ Ci/ml



IN CORE FLUX MONITORS ○

Figure 2:

Quarter Core Fuel Exposure Distribution (GWD/MTU) as of May 17, 1985. The Core Average Exposure is 8.124 GWD/MTU.

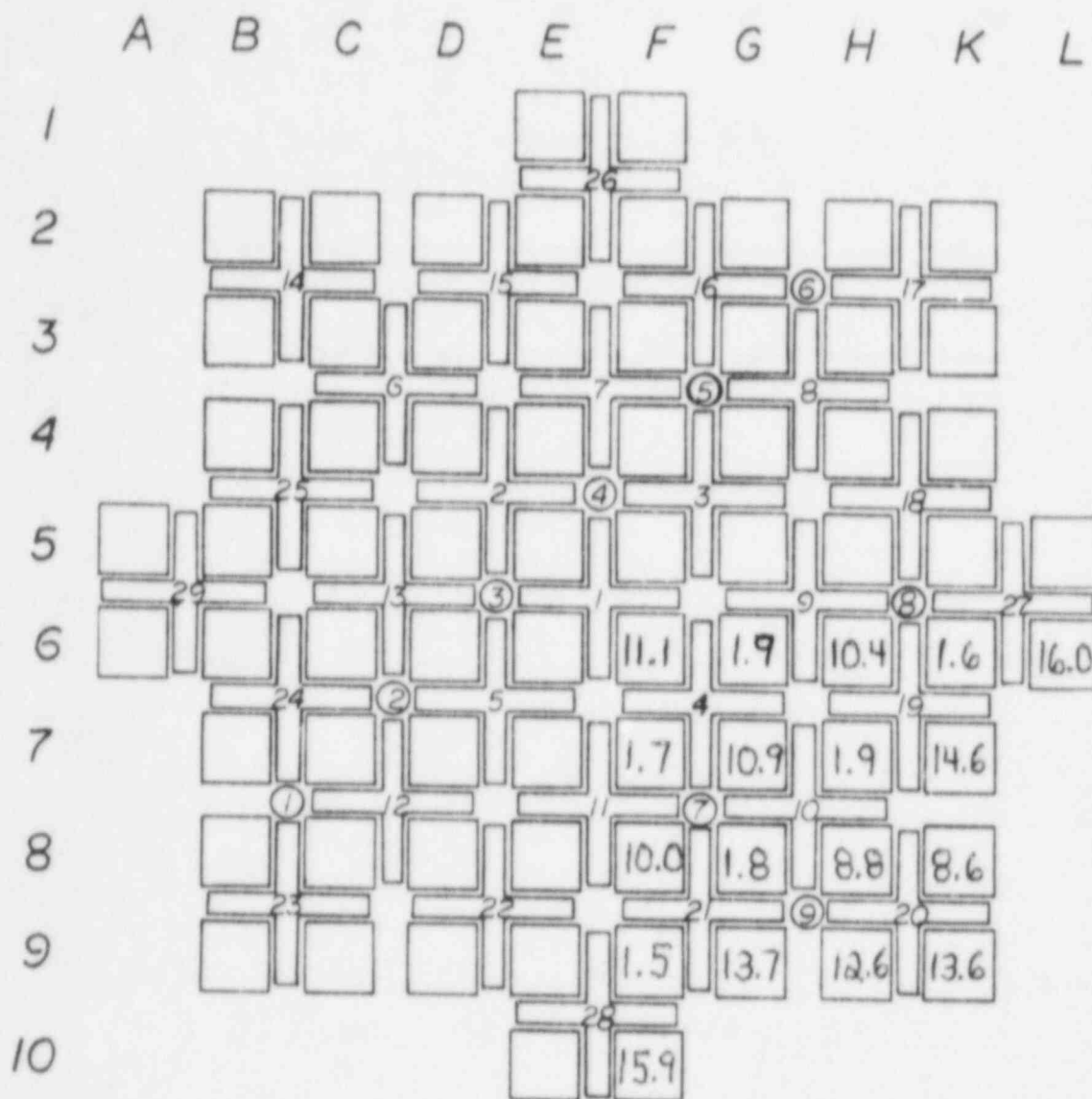


Figure 3:

Quarter Core Fuel Exposure Distribution (GWD/MTU) as of July 10, 1985. The Core Average Exposure is 8.747 GWD/MTU.