

INTRODUCTION

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, off-gas activity levels and gross alpha activity levels.

SECTION 1

A reactor scram occurred at 0946 hours on September 28, 1979, due to a scram solenoid burning out on CRD No. 10. A failed seal in the upper control rod drive mechanism for CRD No. 10 led to water dripping onto the scram solenoid, which caused it to burn out, resulting in a partial scram. The reactor was operating at 93% of rated thermal power (44 MWe) at the time of the scram.

GROSS B γ ACTIVITY AND IODINE ANALYSIS

Time of Sample: 1515, 9/28/79

Sample Results: Gross B γ -----7.01 x 10⁻¹ μ Ci/gram
 I¹³¹-----1.811 x 10⁻³ μ Ci/gram
 I¹³³-----1.5 x 10⁻² μ Ci/gram
 I¹³⁵-----1.388 x 10⁻² μ Ci/gram

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to the thermal power change:
 0900, 9/26/79 - 0946, 9/28/79 93%
- (2) The appropriate fuel burnup of assemblies in a symmetrical core region is depicted in Figure 1.
- (3) Cleanup Flow History starting 48 hours prior to the thermal power change:

Primary Purification Flow Rate

0900, 9/26/79 - 0946, 9/28/79 40 gpm

Primary Purification Decontamination Factors (B γ)

0303, 9/27/79 1588:1
 0047, 10/9/79 192:1

1592 191

(4) Off-Gas Activity Levels for 48 Hours Prior to Thermal Power Change:

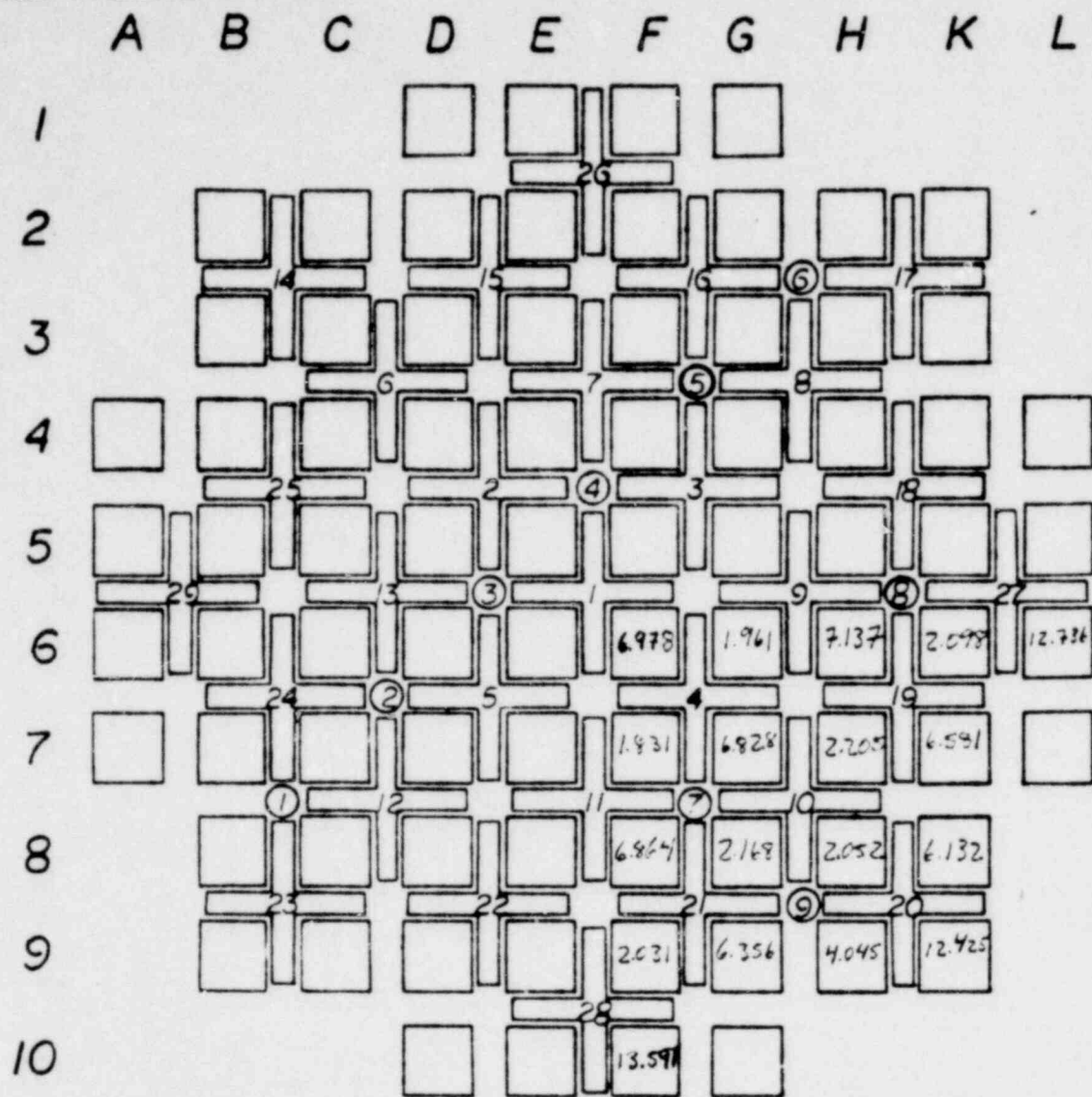
0900-1700, 9/26/79-----	260.70	μCi/sec
1700-1800, 9/26/79-----	254.18	μCi/sec
1800-1900, 9/26/79-----	293.30	μCi/sec
1900-2000, 9/26/79-----	276.99	μCi/sec
2000-2100, 9/26/79-----	325.88	μCi/sec
2100-2200, 9/26/79-----	358.46	μCi/sec
2200-2300, 9/26/79-----	260.70	μCi/sec
2300-2400, 9/26/79	0000-0200, 9/27/79----	325.88 μCi/sec
0200-0300, 9/27/79-----	278.70	μCi/sec
0300-0400, 9/27/79-----	218.04	μCi/sec
0400-0500, 9/27/79-----	223.96	μCi/sec
0500-0600, 9/27/79-----	213.30	μCi/sec
0600-0700, 9/27/79-----	189.60	μCi/sec
0700-0800, 9/27/79-----	184.86	μCi/sec
0800-0900, 9/27/79-----	194.10	μCi/sec
0900-1000, 9/27/79-----	208.92	μCi/sec
1000-1200, 9/27/79-----	194.34	μCi/sec
1200-1300, 9/27/79-----	233.21	μCi/sec
1300-1400, 9/27/79-----	189.48	μCi/sec
1400-1500, 9/27/79-----	242.92	μCi/sec
1500-1600, 9/27/79-----	233.21	μCi/sec
1600-1800, 9/27/79-----	189.60	μCi/sec
1800-1900, 9/27/79-----	184.86	μCi/sec
1900-2000, 9/27/79-----	182.49	μCi/sec
2000-2100, 9/27/79-----	184.86	μCi/sec
2100-2200, 9/27/79-----	182.49	μCi/sec
2200-2400, 9/27/79	0000-0700, 9/28/79----	184.86 μCi/sec
0700-0900, 9/28/79-----	182.49	μCi/sec
0900-0946, 9/28/79-----	190.12	μCi/sec

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

0303, 9/27/79-----	1.76 x 10 ⁻⁷	μCi/gm
0946, 9/28/79-----	Reactor Scram	
1158, 10/1/79-----	4.75 x 10 ⁻⁷	μCi/gm

1592 192

QUARTER CORE FUEL EXPOSURE ESTIMATION (GWD/MTU)
 AN INDICATION OF REGIONAL EXPOSURE AS OF SEPTEMBER 28, 1979.
 THE AVERAGE EXPOSURE: 5.996 GWD/MTU.



↓
 PLANT
 NORTH

IN CORE FLUX MONITORS ○

1592 193

POOR ORIGINAL

FIGURE 1

SECTION 2

A reactor scram occurred at 0255 hours on November 9, 1979, due to an unexpected restriction in freedom of movement of the turbine-governor initial pressure regulator. The reactor was operating at 85% of rated thermal power (42 MWe) at the time of the scram.

GROSS B_Y ACTIVITY AND IODINE ANALYSIS

Time of Sample: 0633, 11/9/79

Sample Results: Gross B_Y-----1.43 μCi/gram
 I¹³¹-----1.826 x 10⁻³ μCi/gram
 I¹³³-----1.139 x 10⁻² μCi/gram
 I¹³⁵-----2.362 x 10⁻² μCi/gram

ADDITIONAL INFORMATION

- (1) Reactor Thermal Power Level starting 48 hours prior to the thermal power change:
 0300, 11/7/79 - 0255, 11/9/79 85%
- (2) The appropriate fuel burnup of assemblies in a symmetrical core region is depicted in Figure 2.
- (3) Cleanup Flow history starting 48 hours prior to the thermal power change:

Primary Purification Flow Rate

0300, 11/7/79 - 0255, 11/9/79 40 gpm

Primary Purification Deceleration Factors (B_Y)

0120, 11/8/79 962:1

0213, 11/12/79 861:1

1592 194

(4) Off-G.s Activity Levels for 48 Hours Prior to Thermal Power Change:

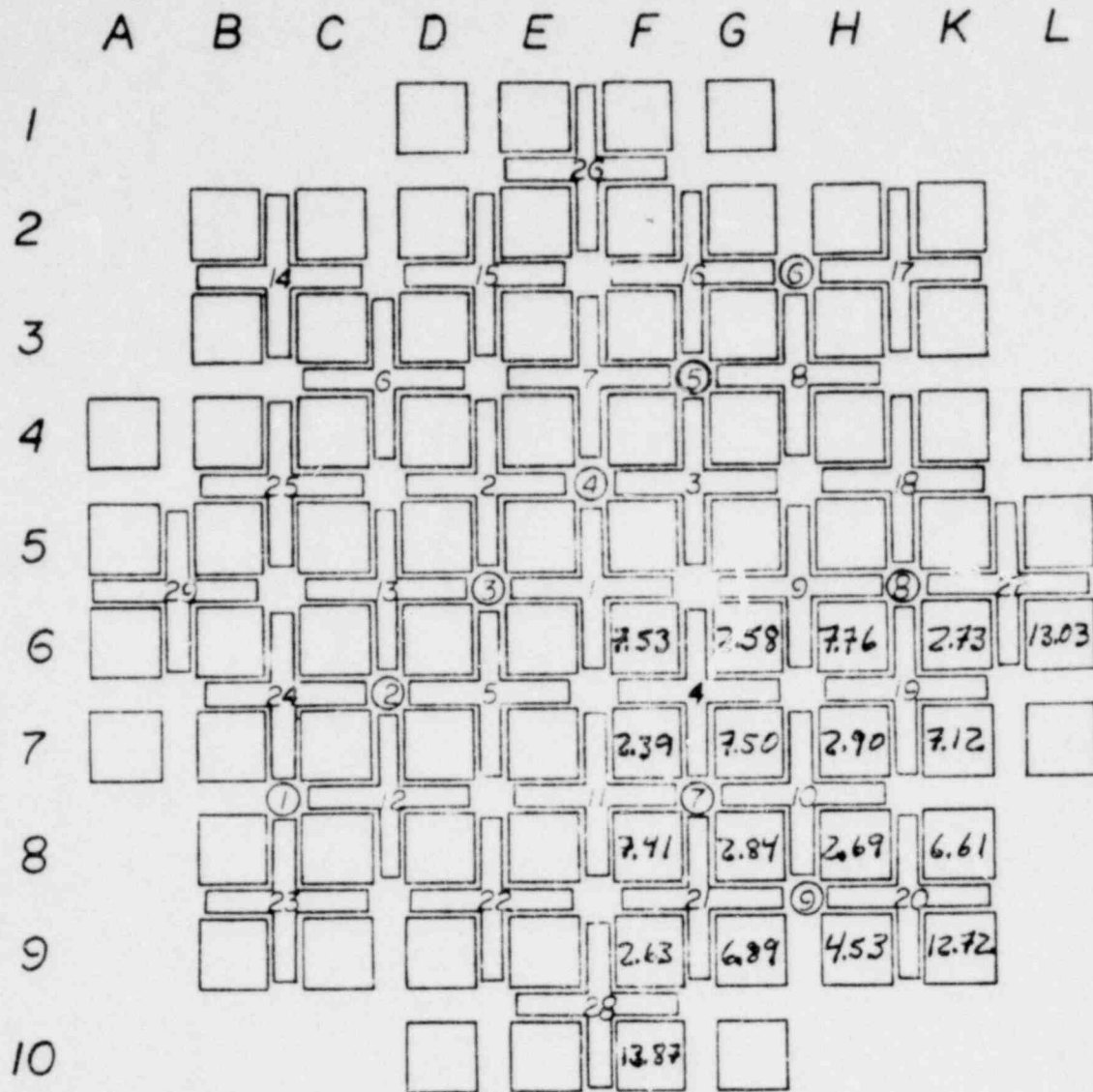
0300-1000, 11/7/79-----	207.67	μCi/sec
1000-1100, 11/7/79-----	210.69	μCi/sec
1100-1200, 11/7/79-----	207.67	μCi/sec
1200-1300, 11/7/79-----	210.69	μCi/sec
1300-1400, 11/7/79-----	207.67	μCi/sec
1400-1500, 11/7/79-----	210.69	μCi/sec
1500-1700, 11/7/79-----	207.67	μCi/sec
1700-1800, 11/7/79-----	173.12	μCi/sec
1800-1900, 11/7/79-----	207.67	μCi/sec
1900-2200, 11/7/79-----	210.69	μCi/sec
2200-2400, 11/7/79	0000-0100, 11/8/79----	207.67 μCi/sec
0100-0200, 11/8/79-----	208.01	μCi/sec
0200-0300, 11/8/79-----	166.41	μCi/sec
0300-0600, 11/8/79-----	190.23	μCi/sec
0600-0700, 11/8/79-----	187.21	μCi/sec
0700-0800, 11/8/79-----	249.61	μCi/sec
0800-0900, 11/8/79-----	214.72	μCi/sec
0900-1000, 11/8/79-----	208.01	μCi/sec
1000-1100, 11/8/79-----	249.61	μCi/sec
1100-1200, 11/8/79-----	253.64	μCi/sec
1200-1400, 11/8/79-----	208.01	μCi/sec
1400-1500, 11/8/79-----	253.64	μCi/sec
1500-1600, 11/8/79-----	286.52	μCi/sec
1600-1700, 11/8/79-----	295.91	μCi/sec
1700-2100, 11/8/79-----	291.21	μCi/sec
2100-2400, 11/8/79	0000-0100, 11/9/79----	249.61 μCi/sec
0100-0300, 11/9/79-----	274.22	μCi/sec

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

0115, 11/8/79-----	3.53 x 10 ⁻⁸	μCi/gm
0255, 11/9/79-----	Reactor Scram	
0215, 11/12/79-----	3.42 x 10 ⁻⁷	μCi/gm

1592 195

QUARTER CORE FUEL EXPOSURE ESTIMATION (GWD/MTU)
 AN INDICATION OF REGIONAL EXPOSURE AS OF NOVEMBER 9, 1979.
 THE AVERAGE EXPOSURE: 6.537 GWD/MTU.



↓
 PLANT
 NORTH

IN CORE FLUX MONITORS ○

FIGURE 2

1592 196

POOR ORIGINAL