

Attachment  
Duke Power Company  
Oconee Nuclear Station

Oconee 2 Cycle 8  
Reload Report Revision

pages

3.2

4.1

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FIGURE 3.1. CORE LOADING DIAGRAM FOR OCONEE 2, CYCLE 8

X																
A						E12 9	G12 9	O08 9	G04 9	E04 9						
B			F13 9	10	E14 9	10	M08 9	10	E02 9	10	F03 9					
C			M06 9	10	G14 9	10	G10 9	10	G06 9	10	G02 9	10	F05 9			
D	O06 9	10	L05 9	10	B04 8B	10	F15 8B	10	B12 8B	10	E06 9	10	O10 9			
E	10	P07 9	10	F02 8B	10	A07 8B	10	A09 8B	10	B10 8B	10	P09 9	10			
F	N05 9	P05 9	10	D02 8B	10	F01 8B	D13 9	C13 8B	D03 9	A10 8B	10	D14 8B	10	P11 9	N11 9	
G	N07 9	10	L07 9	10	G01 8B	O04 9	H15 8B	10	R08 8B	O12 9	G15 8B	10	L09 9	10	N09 9	
HW	H13 9	H11 9	10	A06 8B	10	C03 8B	10	P10 8B	10	O13 8B	10	R10 8B	10	H05 9	H03 9	
K	D07 9	10	F07 9	10	K01 8B	C04 9	A08 8B	10	H01 8B	C12 9	K15 8B	10	F09 9	10	D09 9	
L	D05 9	B05 9	10	N02 8B	10	R06 8B	N13 9	O03 8B	N03 9	L15 8B	10	N14 8B	10	B11 9	D11 9	
M	10	B07 9	10	P06 8B	10	R07 8B	10	R09 8B	10	L14 8B	10	B09 9	10			
N	C06 9	10	M10 9	10	P04 8B	10	L01 8B	10	P12 8B	10	F11 9	10	C10 9			
O			L11 9	10	K14 9	10	K10 9	10	K06 9	10	K02 9	10	E10 9			
P			L13 9	10	M14 9	10	E08 9	10	M02 9	10	L03 9					
R						M12 9	K12 9	C08 9	K04 9	M04 9						
								Z								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

XX	PREVIOUS CYCLE LOCATION
X	BATCH NO.

## 4. FUEL SYSTEM DESIGN

### 4.1 Fuel Assembly Mechanical Design

The types of fuel assemblies and pertinent fuel design parameters for Oconee 2, Cycle 8, are listed in Table 4-1. All fuel assemblies are identical in concept and are mechanically interchangeable. The batch 10 fuel assemblies are of the Mark BZ design <sup>7,15</sup>. However, these batch 10 assemblies have a slightly reduced prepressurization pressure to provide a small increase in the fuel rod burnup limit. Two regenerative neutron sources will be used in Mk B4 fuel assemblies. Retainers will be used on two batch 9 fuel assemblies that contain regenerative neutron sources (RNS), and on 60 batch 10 assemblies containing BPRA's. The justification for the design and use of the BPRA retainers is described in references 3 and 4, which is also applicable to the RNS retainers of Oconee 2, Cycle 8, as justified in reference 15.

Cycle 8 retains one Advanced Cladding Pathfinder (ACP) assembly from Cycle 7. This assembly is a reconstitutable design with 12 special advanced cladding rods that was previously described in Reference 5. Eight full length control rod assemblies (CRA's) which have reached their design exposure limit and two CRA's which were damaged during refueling have been replaced with ten CRA's of a similar but improved design.

Other results presented in the FSAR<sup>1</sup> fuel assembly mechanical discussions and in previous reload reports are applicable to the reload fuel assemblies. Duke has performed generic mechanical analyses, as described below, which envelope the Cycle 8 design. All methods are consistent with the approved methodologies of reference 10 except where specifically stated.

### 4.2 Fuel Rod Design

The mechanical evaluation of the fuel rod is discussed below.