

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

September 30, 1996

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Serial No. 96-499
NL&OS/ETS
Docket No. 50-339
License No. NPF-7

Gentlemen:

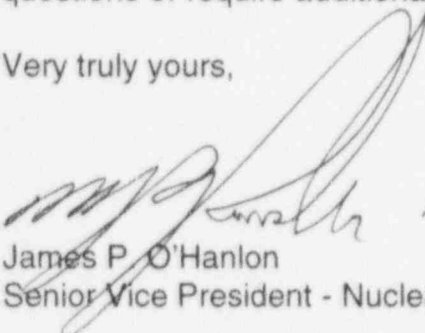
VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 2
NRC BULLETIN 96-01 ON CONTROL ROD INSERTION PROBLEMS
FUEL AND CYCLE DATA FOR CYCLE 12

On March 8, 1996, the NRC issued Bulletin 96-01, "Control Rod Insertion Problems," which requested licensees to complete several actions to determine whether control rod insertion problems were a concern at their facilities. The bulletin requested licensees to measure and evaluate control rod drop times and rod recoil data for all control rods during 1996 outages of sufficient duration. In addition, licensees were requested to submit core maps of rodded fuel assemblies indicating fuel type (materials, grid, spacers, guide tube inner diameter) and current projected end-of-cycle burnup for each rodded assembly for the current cycle. When available, the same information was requested for the next cycle.

Fuel and cycle data have been developed for North Anna Unit 2 Cycle 12 which is currently scheduled to begin operation on October 7, 1996. As requested by Bulletin 96-01, this information is being provided in Attachment 1.

This letter does not establish any new or additional commitments. Should you have any questions or require additional information, please contact us.

Very truly yours,

 FOR
James P. O'Hanlon
Senior Vice President - Nuclear

Attachment

IE57/1

9610080022 960930
PDR ADOCK 05000339
Q PDR

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Suite 2900
Atlanta, Georgia

Mr. R. D. McWhorter
NRC Senior Resident Inspector
North Anna Power Station

ATTACHMENT

VIRGINIA POWER

NORTH ANNA UNIT 2 CYCLE 12

FUEL AND CYCLE DATA

Fuel and cycle data for North Anna 2 Cycle 12 are included here in accordance with Required Response (2) of NRC Bulletin 96-01. A description of the fuel and cycle data follows:

- 1) A core map is provided which gives the identification numbers of the fuel assemblies and the corresponding types of insert components (if any) used in the fuel assemblies. The insert component types are identified on the core map.
- 2) A page is provided which identifies all the batches of fuel to be used in the North Anna 2 Cycle 12, the assembly ID notation used for each batch, and notable information about the design of each fuel batch. North Anna fuel is a 17x17 design with standard (0.374" OD versus the smaller OD rods used in 17X17 OFA assemblies) diameter rods. The grid and the fuel rod cladding materials are listed for each fuel batch. The guide thimble material is typically the same as the fuel rod cladding material, although during the implementation of low tin Zircaloy-4, the tin content of the cladding and guide thimbles could differ slightly. The guide thimble inner diameters are given for both the upper portion of the tube and the dashpot region. In conjunction with the core map (Item 1), this information will allow characterization of the type of fuel assembly under each RCCA. For convenience, fuel batches which are used in control rod locations are also identified in these lists with an asterisk.
- 3) In response to the request for current and projected EOC burnup for each rodded assembly, this attachment lists the projected assembly burnups at the beginning of the cycle and at the maximum design cycle burnup. The fuel assembly burnup data are provided on a quarter-core basis, and the rodded locations are denoted by heavy outlines.
- 4) North Anna 2 Cycle 12 is expected to begin operation around October 7, 1996. The maximum cycle design burnup is 20,900 MWD/MTU.
- 5) Both North Anna Units use Ag-In-Cd control rods. The control rods that will be used in North Anna 2 Cycle 12 are Westinghouse Enhanced Performance (chrome plated) control rods which are new beginning with Cycle 12.

North Anna 2 Cycle 12 Fuel Data

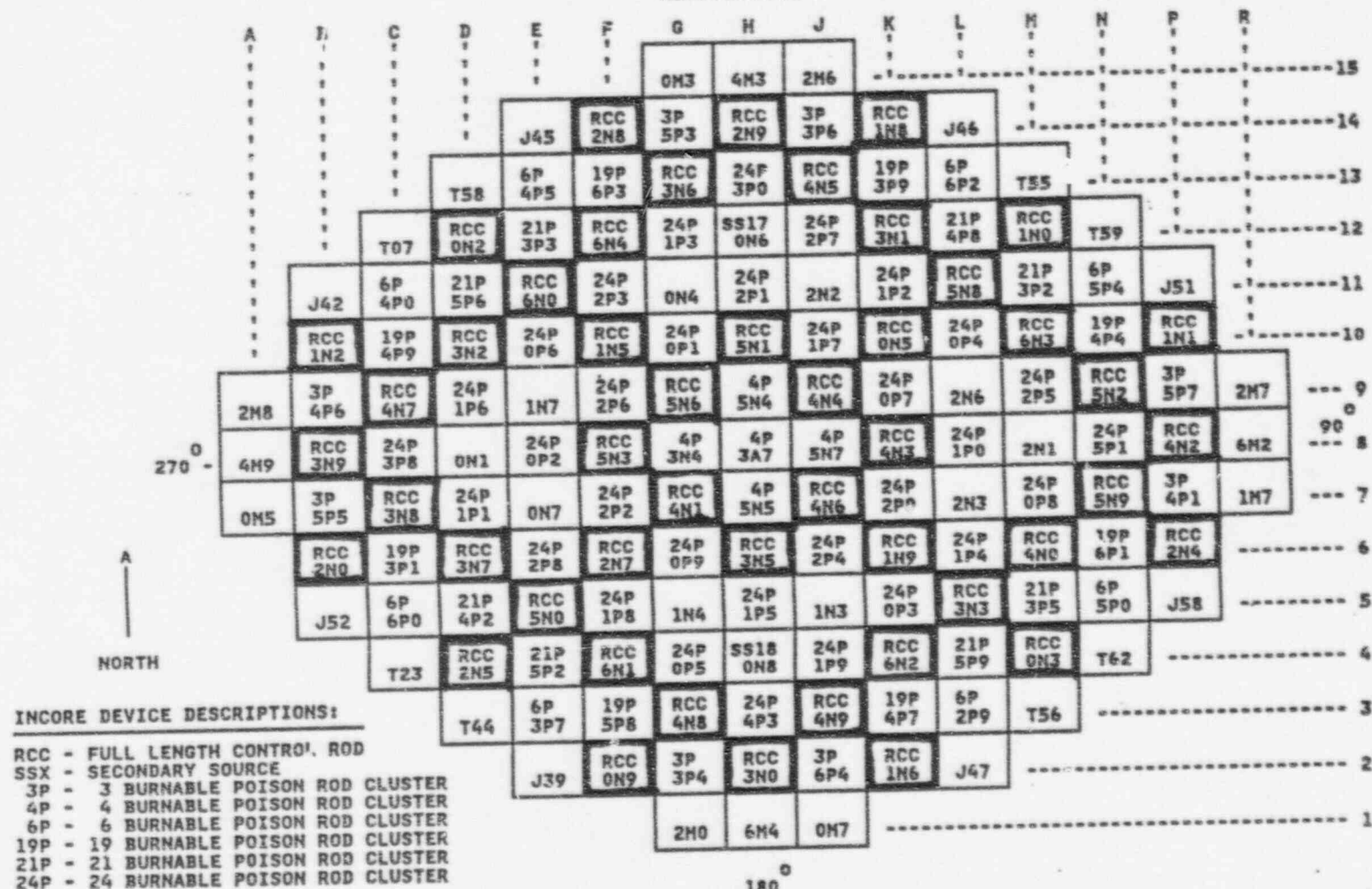
Fuel Batch	Number of Fuel Assemblies	Fuel Assembly IDs	Description	Thimble Inside Diameter, inches (Upper/Lower)
N1/9B	8	Jnn	Standard Design, Inconel Grids, Zr-4 Cladding	0.450/0.397
N1/11B	1	nAn	Vantage 5H Design, Zr-4 Grids, Zr-4 Cladding	0.442/0.397
N2/6	8	Tnn	Standard Design, Inconel Grids, Zr-4 Cladding	0.450/0.397
N2/12A	8	nMn	Vantage 5H Design, Zr-4 Grids (rotated), low Sn Zr-4 Cladding	0.442/0.397
N2/12B	4	nMn	Vantage 5H Design, Zr-4 Grids (rotated), low Sn Zr-4 Cladding	0.442/0.397
N2/13A*	28	nNn	Vantage 5H Design, ZIRLO Grids (rotated), ZIRLO Cladding, ZIRLO Guide Tubes	0.442/0.397
N2/13B*	36	nNn	Vantage 5H Design, ZIRLO Grids (rotated), ZIRLO Cladding, ZIRLO Guide Tubes	0.442/0.397
N2/14A	28	nPn	Vantage 5H Design, ZIRLO Grids (rotated), ZIRLO Cladding, ZIRLO Guide Tubes	0.442/0.397
N2/14B	36	nPn	Vantage 5H Design, ZIRLO Grids (rotated), ZIRLO Cladding, ZIRLO Guide Tubes	0.442/0.397

Notes: 1.) Unless otherwise specified, guide tube material is typically the same as fuel cladding material.

2.) Assemblies from fuel batches marked with an asterisk are in rodged locations.

VP-NES-NAF

NORTH ANNA UNIT 2 -- CYCLE 12
FINAL CORE LOADING PLAN
REVISION NO. 0



PREPARED BY: *Donna D. Bennett* DATE: 4/15/96
REVIEWED BY: *Thomas S. Paul* DATE: 4/15/96
APPROVED BY: *D. D. Gadsby* DATE: 4/15/96

CONCURRENCE BY: *R.B. Teague*
CONCURRENCE BY: *NA RBT*
APPROVED BY: *CP Sany*

DATE: 5/6/96
DATE:
DATE: 5/6/96

FUEL BURNUP DISTRIBUTION MAP, 0. MWD/T BURNUP

	H	G	F	E	D	C	B	A
8	25607	18846	23304	0	23016	0	18846	37154
	644	474	586	0	579	0	474	935
9	18908	19376	0	23518	0	22498	0	37097
	476	487	0	592	0	566	0	933
10	23363	0	23845	0	23327	0	23029	
	588	0	600	0	587	0	579	
11	0	23438	0	19373	0	0	41027	
	0	590	0	487	0	0	1032	
12	23075	0	23313	0	23845	38647		
	580	0	586	0	600	972		
13	0	22521	0	0	38638			
	0	567	0	0	972			
14	18905	0	23066	40503				
	476	0	580	1919				
15	37232	37125						
	937	934						

MWD/T
EFPD

North Anna 2 Cycle 12
Quarter Core Representation
Fuel Assembly Burnup at Beginning of Cycle

FUEL BURNUP DISTRIBUTION MAP, 20900. MWD/T BURNUP

	H	G	F	E	D	C	B	A
8	47911	42908	47988	26763	47587	26637	38433	44795
	1205	1079	1207	673	1197	670	967	1127
9	42936	44241	27021	48205	26549	46123	21655	43797
	1080	1113	680	1213	668	1160	545	1102
10	48017	27006	48654	27331	48148	25432	36766	
	1208	679	1224	687	1211	640	925	
11	26758	48136	27321	45044	26217	21700	47876	
	673	1211	687	1133	659	546	1204	
12	47629	26546	48132	26208	40745	45992		
	1196	668	1211	659	1025	1157		
13	26626	46137	25436	21711	45986			
	670	1161	640	546	1157			
14	38482	21652	36807	47400				
	968	545	926	1192				
15	44879	43522						
	1129	1102						

MWD/T
EFPD

North Anna 2 Cycle 12
Quarter Core Representation
Fuel Assembly Burnup at Maximum Design Cycle Burnup