

An Exelon Company

Clinton Power Station R. R. 3, Box 228 Clinton, IL 61727

H 00 1

10CFR50.36

U-603845 January 30, 2008

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

> Clinton Power Station, Unit 1 Facility Operating License No. NPF-62 NRC Docket No. 50-461

Subject: Issuance of the Core Operating Limits Report for Clinton Power Station, Unit 1, Cycle 12

In accordance with Technical Specification 5.6.5, "Core Operating Limits Report (COLR)," Item d., AmerGen Energy Company, LLC (AmerGen) is submitting the COLR for Clinton Power Station, Unit 1, for Cycle 12.

Should you have any questions concerning this report, please contact Mr. Steve Gackstetter, Regulatory Assurance Manager, at (217) 937-2800.

Respectfully,

Bryan Hanson Site Vice President Clinton Power Station

JLP/blf

Attachment

cc:

Regional Administrator, NRC Region III NRC Senior Resident Inspector, Clinton Power Station Exelon Maclanz - Nuclear Fasts CL1C12 Core Operating Limits Report

DOC ID: COLH Clinton 1 Rev. 3

CORE OPERATING LIMITS REPORT

FOR

CLINTON POWER STATION UNIT 1 CYCLE 12

Gary W. Becknell Prepared By:

Reviewed By:

Date: 1/10/08

Date: 1/10/08

Hus pro Puburaccio **Reviewed By:**

TSS Barriewa

41A Approved By: nes J.

Station Qualified Reviewer By:

Date: 01/11/08

Date: 01/10/08

1/11/08 Date: ____

Page 1 of 16

Table of Contents

		Page
1	.0 Terms and Definitions	4
2.	.0 General Information	5
3.	.0 MAPLHGR Limits	6
4.	.0 MCPR Limits	7
5	.0 Linear Heat Generation Rate Limits	11
6	6.0 Reactor Protection System (RPS) Instrumentation	14
7.	2.0 Stability Protection Setpoints	14
8	0.0 Modes of Operation	15
9	0.0 Methodology	15
1	0.0 References	16

in j

Table 3-1

Table 3-2

Table 4-1

Selection and any been but Rev. 3

List of Tab	and the second sec	
		Page
MAPLHGR for all GE14C Fuel	an fr	6
MAPLHGR Single Loop Operation (SLO) Multiplier	a Carriera	6
Operating Limit Minimum Critical Power Ratio	n on alis een N≜eine vas spol	9 (1997) - 1997 - 1997 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1 1997 -

Table 4-2	Power Dependent MCPR Limits (MCPR(P)) and Multipliers K(P)	9
Table 4-3	Flow Dependent MCPR Limits MCPR(F)	10
Table 4-4	Single Loop Operation (SLO) Flow Dependent MCPR Limits MCPR(F)	10
Table 5-1	Linear Heat Generation Rate Limits for UO ₂ Rods	11
Table 5-2	Linear Heat Generation Rate Limits for Gad Rods	12
Table 5-3	Power Dependent LHGR Multiplier LHGRFAC(P)	12 .
Table 5-4	Flow Dependent LHGR Multiplier LHGRFAC(F)	12
Table 5-5	LHGR Single Loop Operation (SLO) Reduction Factor	(^{63,0}) ²⁶ 13
Table 5-6	Power Dependent LRCR Multiplion LHGRFAC(P) (Loss of 'FULL' Feedwater Heating)	13 (International International Internationa
Table 5-7	Flow Dependent LHG? Multiplier LHGRFAC(F) (Loss of 'FULL' Feedwater Heating)	1995, 1995) 20 16 :
Table 7-1	OPRM PBDA Trip Setpoints	
Table 8-1		15,
	이 가슴이 1996년 1월 2017년 1월 1997년 1월 1997년 19	

Press, March & March March March

Page 3 of 16

1.0 Terms and Definitions

A case analyzed with two (2) Safety-Relief Valves Out-of-Service (OOS), one (1) ADS valve OOS, and up to a 50°F feedwater temperature reduction (FWTR includes feedwater heater OOS or final feedwater temperature reduction) at any point in the cycle operation in Dual Loop mode (Reference 3).
The reactor condition where thermal power gradually decreases due to fuel depletion while the following conditions are met: 1) all operable control rods are fully withdrawn and 2) all cycle extension techniques have been exhausted including FFWTR and ICF.
Dual Reactor Recirculation Loop Operation
Final Feedwater Temperature Reduction
Feedwater Heaters Out of Service
Increased Core Flow
Linear Heat Generation Rate
LHGR thermal limit flow dependent adjustments and multipliers
LHGR thermal limit power dependent adjustments and multipliers
Maximum Average Planar Linear Heat Generation Rate
Minimum Critical Power Ratio (2010/2018/06/2019/16/2019/16/2018)
MCPR thermal limit power dependent adjustments and multipliers
MCPR thermal limit flow dependent adjustments and multipliers
Operating Limit Minimum Critical Power Ratio
Safety Limit Minimum Critical Power Ratio
Single Reactor Recirculation Loop Operation

Page 4 of 16

"我们我的人

2.0 General Information

 $\mathcal{L}_{\mathrm{eff}}$

This report is prepared in accordance with Technical Specification 5.6,5 of Reference 1. Power and flow dependent limits are listed for various power and flow levels. Linear interpolation is to be used to find intermediate values.

The data presented in this report is valid for all licensed operating domains on the operating map, including:

- n de la Maria Maria de Regional de Regional de la composición de la composición de la composición de la compos Regional de la composición de la composi
- Maximum Extended Load Line Limit down to 99% of rated core flow during full power
 operation
- Increased Core Flow (ICF) up to 107% of rated core flow
- Final Feedwater Temperature Reduction (FFWTR) up to 50°F during cycle extension operation
- Feedwater Heater Out of Service (FWHOOS) up to 50°F feedwater temperature reduction at any time during the cycle prior to cycle extension.

R. B. LASSAN . , .. en and the states Re Balance n 1997 - Lander Strang 1997 - Maria Stranger 1997 - Maria Stranger and a second sec ____/^{*} En a ser a s ngen in the state of the second se

5 18 p involution and the second s <u>____</u> nt. 19. standard (* 19. standard) 19. standard (* 19. standard)

Page 5 of 16

-à -

、 法法所要 《 ÷., 1.1 Rev. 3

101 N. 18

14 UC 1 1 1 4

一、 人名英格兰人

3.0 **MAPLHGR Limits**

3.1 🖉 Technical Specification Reference: Ê

Sections 3.2.1 and 3.4.1.

З,

3.2 Description:

Table 3-1 is used to determine the maximum average planar linear heat generation rate (MAPLHGR) limit for each fuel type. Limits listed in Table 3-1 are for dual reactor recirculation loop operation (DLO). 1. 1

For single reactor recirculation loop operation (SLO), the MAPLHGR limits given in Table 3-1 must be multiplied by a SLO MAPLHGR multiplier provided in Table 3-2. The SLO MAPLHGR multiplier for GE14 fuel is 0.76 (Reference 3).

1 401							
MAPLHGR for all GE14C Fue (Reference 3, 13 and 15)							
Avg. Planar	MAPLHGR						
Exposure	Limit						
(GWd/ST)	(kW/ft)						
0.00	12.82						
14.51	12.82						
19.13	12.82						
57.61	8.00						
63 50	5.00						

Table 3-1

ng panan

Table 3-2 MAPLHGR Single Loop Operation (SLO) Multiplier (Reference 3)

Fuel Type	MAPLHGR SLO Multiplier
GE14C	0.76

ł Linear interpolation should be used for points not listed in Table 3-1.

Page 6 of 16

 ϵs^{\prime}

NOTA STATES

Alta .

C. H.

1. 2. 41

a seal à Frèise des

Rev. 3

Q.

MCPR Limits 4.0

4.1

···· 4.2

- 11 3.0

an an an

Singer all grad

S SAL TANKS

가 옷 옷 가

1. 19 19 19 H.

Technic... Specification Reference:

Sections 3.2.2 and 3.4.1 13 Y 41

Description:

The various MCPR limits are described below.

is strangener

Sec. And

4.2.1 Manual Flow Control MCPR Limits દ હે તેવું ್ಲ ಎಲ್ಲ ಎಂದೆ ಎಂಡ ಎಂಡ ಎಂಡ

The Operating Limit MCPR (OLMCPR) is determined from either section 4.2.1.1 or 4.2.1.2, whichever is greater at any given power and flow condition. E EMBEL PERIOD AL AND

the generation

4.2.1.1 Power-Dependent MCPR Ta. C

For operation less than or equal to 33.3% core thermal power, the MCPR(P) as a function of core thermal power is shown in Table 4-2. For operation at greater than 33.3% cure thermal power, the OLMCPR as a function of core thermal power is determined by multiplying the applicable rated condition OLMCPR limit shown in Table 4-1 by the applicable MCPR multiplier K(P) given in Table 4-2.

4.2.1.2 Elow-Dependent MCPR

Tables 4-3 and 4-4 give the MCPR(F) as a function of flow based on the applicable plant condition. The limits for dual loop operation are listed in Tables 4-3. The limits for single loop operation are listed in Tables 4-4. The MCPR(F) determined from these tables is the flow dependent OLMCPR.

4.2.2 Automatic Flow Control MCPR Limits

Automatic Flow Control MCPR Limits are not provided.

Page 7 of 16

7 dia 👘 🖓 🖓

1111

4.2.3 Option A and Option B

Option A and Option B refer to use of scram speeds for establishing MCPR operating limits.

Option A scram speed is the BWR/6 Technical Specification scram speed. The Technical Specification scram speeds must be met to utilize the Option A MCPR limits. Reload analyses performed by GNF for Cycle 12 Option A MCPR limits utilized a 20% core average insertion time of 0.516 seconds (Reference 17).

To utilize the MCPR limits for the Option Biscram speed, the cycle average scram insertion time for 20% insertion must satisfy equation 2 in Reference 5 Section 4. If the cycle average scram insertion time does not meet the Option B criteria, the appropriate MCPR value may be determined from a linear interpolation between the Option A and B limits as specified by equation 4 in Reference 5 Section 4.

1 20

4.2.4 **Becirculation Flow Control Valve Settings**

123 - 12 K. 13 Cycle 12 was analyzed with a maximum core flow runout of 109%; therefore the recirculation flow control valve must be set to maintain core flow less than 109% (92.105 Mlb/hr) for all runout events (Reference 16)

a degrada a

1994 and and an in

化物理试验 化结合化化离子 化二氟化化 计分子 化丁基苯基乙酰基苯基基乙酰胺 医生物性的 สารเราสุดสิตส์ ซิสตส์ เอาส์ (ค.ศ. 1975) (ค.ศ. 1976) (ค.ศ. 1976) (ค.ศ. 1976) กระบบเป็นสะบบเป็นสุดสิตส์ (ค.ศ. 1976) (ค.ศ. 1976) (ค.ศ. 1976) (ค.ศ. 1977) and the set of the set

化结构成为性的复数 医小鼻子 计自动分子 医视觉管理 化分子

Page 8 of 16

Cable 4-1 Calify Lin(): Minimuta Collical Power Ratio (Reference 3)

EOOS Combination	Cutiup B Al/exposures	Option A All exposures
Base Case	1.29	1.37
Base Case & B. nois	1,30 ²	1.40

Notes for Table 4-1:

1. Analyzed Option B OLMOPR is 1.27 per Reference 3, value is adjusted to obtain an OPRM amplitude setpoint of 110.

2. SLO Option B OLMCPR is the analyzed Option B OLMCPR plus 0.03.

Table 4-2

Power Dependent in CPR Limit Adjustments and Multipliers MCPR(P)^{1, 2}

(Reference 3, 7 and 11)

··.	5	
100		

5000	Core Flow				Core Thermal Power (%)							
EOOS Combination	(% of	0	21.6	<33.3	>33.3	≤43	>43	≤70	>70	100		
Combination	Rated)	R		"			K(P) ³				
Page Cone	≤ 50	2.20	2.20	1.97	1.051	1.047	1.010	1 010	4.45			
Base Case	> 50	2.46	2.46	2.17	1.351	1.347	1.313	1.212	1.15	1.00		
D 010	≤ 50	2.23	2.23	2.00					4.040			
Base Case SLO	> 50	2.49	2.49	2.20	1.351	1.347	1.313	1.212	1.15	1.00		

Notes for Table 4-2:

1. Values are interpolated between relevant power levels.

2. Allowable EOOS conditions are listed in Section 8.

3. Based on 0.500 second turbine trip time delay with OLMCPR \ge 1.27.

Exelon Nuclear - Nuclear Fuels

CL1C12 Core Operating Limits Report

ŕ

209 B



 Core Piow (% rated)	MCPR(F)	
0	1.8755	
25	1,6954	an a

93.7<u>8</u> 109

Single Loop Operation (SLO) Flow Dependent MCPR unnits MCPR(F)²

As a construction of		7.4	Reference:	7 and 11)	1. e.		· .
----------------------	--	-----	------------	-----------	-------	--	-----

0 1.9055 25 1.7254 93.78 1.29 109 1.23		Core Flow (% rated)	MCPR(F)	
	1 19 8 27 10 10 10 10 10 10 10 10 10 10 10 10 10	0		nillige Annelsen in Secolutions I III
	· · · · · · · · · · · · · · · · · · ·			
		109		and the second
			•	· · · · · · · · · · · · · · · · · · ·
	o and a second sec	ust vru∳tri. ∦ist		1
		,		
	a part and a part of the second se			
	S. S. S. EAR W	, s p	1	gin ^{de} maria agen a é

um has an and a second of 23 23 percentages. A second Realized Contractor and Con

end March

Linear interpolation should be used for points not listed in Table 4-3.

2 Linear interpolation should be used for points not listed in Table 4-4.

Page 10 of 16

84 A. 180

5.0 Linear Heat Generation Rate Limits

WE AND WORK ON THE REPORT C State

.

and the second second

化放射机 网络

5.1 Technical Specification Reference:

Section 3.2.3 and 3.4.1.

5.2 Description:

and but

y landar

314.

a sanga saan

The linear heat generation rate (LHGR) limit is the product of the exposure dependent LHGR limit (from Table 5-1 for UQ2 fuel rods and Table 5-2 for Gadolinia fuel rods) and the minimum of: the power dependent LHGR Factor, LHGRFAC(P), the flow dependent LHGR Factor, LHGRFAC(F), or the single loop operation (SLO) multiplication factor if applicable. The LHGRFAC(P) is determined from Table 5-3. The LHGRFAC(F) is determined from Table 5-4. The SLO multiplication factor can be found in Table 5-5. Tables 5-1 and 5-2 are the LHGR limit as a function of peak pellet exposure.

The Gadolinia fuel ibid limits in Table S-2 are the most limiting Gadolinia fuel rods. The most limiting values are provided here as a convenience and do not imply that all the Gadolinia fuel rods must satisfy the listed values. ۰, and the state of the second second

For Loss of 'FULL' Feedwater Heating (±10 °F of design NORMAL temperature); LHGRFAC(P) is determined from Table 5-6 and LHGRFAC(F) is determined from Table 5-7. Concurrent operation with SLO and reduced wedwater heating has not been evaluated and thus is not a valid operating mode. (Reference 3, 7, 8, 9 and 10) 48 - NY 1

Peak Pellet Expusure (GW()/ST)	LHGR Limit (kW/ft)	
0.00 14.51	13.40	
	Expusure (GW(I/ST) 14.51 57.61	ExpOsure Limit (GWd/ST) (kW/tt) 0.00 13.40 14.51 13.40 57.61 8.00

Rods¹

na 22 konstruiten eriken die en 122 State Barrier in 122 konstruiten ein 127

Linear interpolation should be used for points not listed in Table 5-1. The values listed in Table 5-1 are limiting for all bundle types.

Page 11 of 16

ender all en sold variante. En 1975 en seguire aller en sold en sol

2012 A 2014

Table 5-2 control to the short the second Linear Heat Generation Rate Limits for Gad Rods¹ (Reference 4, 12 and 14)

eak Pellet Exposure (GWd/ST)	LHGR Limit (kW/ft)	
0.00 12.08	11.76 11.76	un dage under eine ster ster The
54.21 59.98	7.02 .4.39	and an eifinear aisteoirteanna aisteoirteanna
	n var Vetstaar	

$\mathcal{D}(t)$ 555 3 19 20AL 24 Table 5-3

ent in the state of the second power Dependent LHGR Multiplier LHGRFAC(P)²

and that etcal (2) a diamond of the set of the set of (Reference 3, 7 and 11), we want to the top 1

	1 A A A A A A A A A A A A A A A A A A A						
	0	·	mal Power	ower (% Rated)			
ECOS Combination	Core Flow (%)	<u> </u>	21:6	⊴ ≤ 33.3	>33.3	100	
	FIUW (70)	and the second	1987 - ME	HGRFAC	>)		
Base Case	≤ 50	0.634	0.634	0.689	0.000	1 000	
Dase Case	> 50 *	0.572	0.572	0.600	0.689	1.000	
Roop Coop SLO	<u>≤</u> 50	0.634	0.634	0.689	0.000	1 000	
Base Case SLO	> 50	0.572	0.572	0.600	0.689	1.000	

Table 5-4 Sec. 2 Co Flow Dependent LHGR Multiplier LHGRFAC(F)³

		5 - 40 1		(Re	sterence	7 and 1	1)	
	2	\sim	: 🕴 .		1:55	网络白印		
3.		. F						
		j	Cor	e F	low_	i Segna da la comunicación de la c Esta de la comunicación de la comuni		
- 1		171	1997 - C			LHGRP	AC(F)	

	(% rated)	
- A		0.443
).§ 25.00 ;	0.612
	ം 30.00 ്	- 🦾 0.646
.: <i>1</i> 24 - 1	82.18	1 .00
	107.00	1.00

1 Linear interpolation should be used for points not listed in Table 5-2. The values listed in Table 5-2 are limiting for all bundle types.

2 Linear interpolation should be used for points not listed in Table 5-3.

з Linear interpolation should be used for points not listed in Table 5-4.

Page 12 of 16

ł

21.52

建筑 法法理公司 网络管理教育 医神经下生的 10 1. J. K. Tablo 5-5 LHGR Single Loop Operation (SLO) Reduction Factor

(Reference 3)

Fuel Type	LHGR SLO Multipiler	ĩ
GE14C	0.76	(

andra to a É

a ann 119 ac thu

Power Dependent LHGR Multiplier LHGRFAC(P)¹

Hade Burg w (Loss of 'FULL' Freedwater Heating, burg state of the state of the (Reference 7, 3, 10, and 11)

ふってもの物が、ここの時間によって、ここの感染になっていた。 (数分の)

i a u			Core Thermal Power (% Rated)						
9 - 18 Mar	ECOS Combination	Core Flow	0	21.6	< 33.3	> 3?.3	100		
	Combination	, , <u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	LHGRFAC(P)						
	Base Case	≤ 50	0.627	0.627	0.682	0.682	0.99		
	Dase Case	> 50	0.500	0.566	0.594	0.002	0.99		
	Base Case SLO								
	Dasa Case SLU								

Sec. 24 ald peterson enalls

A star for an enter the second Table 5-7 and the Second Flow Dependent LHGR Multiplier LHGRFAC(F)² (Loss of 'FULL' Feedwater Heating)

(Reference 7, 8, 9 and 10)

Core Flow (% rated)	LHGRFAC(F)
0.00	0.438
. 25.00	0.605
30.00	0.639
82.18	0.99
107.00	0.99

1 Linear interpolation should be used for points not listed in Table 5-6. 2

Linear interpolation should be used for points not listed in Table 5-7.

Page 13 of 16

. <u>10</u>1 - 1

Sector Sector

Rev. 3

6.0 **Reactor Protection System (RPS) Instrumentation**

6.1 Technical Specification Reference:

Section 3.3.1.1

in an e contrar attr

ച്ചും, ചിം പാരോജി സ്നാസംബം

 A_{i}

6.2 **Description:**

> The Average Power Range Monitor (APRM) simulated thermal power time constant, shall be between 5.4 seconds and 6.6 seconds (Reference 17).

11211

7.0 Stability Protection Setpoints (m. s.) The PER CONSTRUCTION AND A

The Clinton 1 Cycle 12 OFRM Period Based Detection Algorithm (PBDA) Trip Setpoints for the OPRM System for use in Technical Specification 3.3.1.3 are found in Table 7-1. These values are based on the cycle specific analysis documented in Reference 3.

a., 52 dat

++++)

· mail

Any change to the OLMCPR value and/or ARTS-based power dependent MCPR limits should be evaluated for potential impact on the OPRM PBDA Trip Setpoints. 5 - 10 - L NE COLLEGA Secondaria Antonio antonio antonio antonio Antonio

Ψ.

PBDA	Trip Ampli		(Fieference Corresp		m Confirmation
	1.10			13	
*.	1753 1977 - 1	:	a Pilipid Senat Still Ladit to Donatataz	· 始於語書書書 · 小印 · · · · ·	
		i in eisine Statut	nan naan naan Argiti i in na Argiti i in Argiti i in Argiti i inaan		
		304.0 808.6	1997 - 1992 († 1995) 1997 - 1992 († 1995)	1	
	5. 5			- - - -	
			• ;		

Exelon Nuclear - Nuclear Fuels

こ 読む住 さた

a and an and

11.40.202

CL1C12 Core Operating Limits Report

insel ∂ntin £grfinn Dius⊙S The **Rev. 3**

8.0 Modes Of Operation

The Allowed Modes of Operation with combinations of Equipment Out-of-Service (EOOS) are as described below:

Table 8-1	
Modes of Operation	
(Reference 3)	

	e la contra en la co	Operatin	a Region		
EOOS Optio: 8	Standard	MELILA		FFWTR ¹	Coastdown
Base Case, Option A	Yes	Yes	Yes and	Yes	Yes
Base Case SLO ¹ , Option A	Yes	No	No	No	Yes
Base Case, Option B	Yes	Yes	Yes	Yes	Yes
Base Case SLO ¹ , Option B	Yes	No	No	No	Yes

Notes:

1. Concurrent operation with SLO and Loss of 'FULL' Feedwater Heating (±10°F of design NORMAL temperature) or FFWTR has not been evaluated and thus not a valid operating mode. (Reference 3, 7, 8, 9 and 10)

· 杨浩和学校,我和我们的时候,你们的你们的你们的。""你们就是你们的问题,你能能能能。"

9.0 Methodology

14.10

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NBC, specifically those described in the following document:

and the new second second

- 1. "General Electric Standard Application for Reactor Fuel", NEDE-24010-P-A-15, September 2005 and U.S. Supplement NEDE-24011-P-A-15-US, September 2005.
 - na 1994 (1991) 2022 Noroch Scholard, contractor (1997) 1997 1997 Konges (1996) 2017 – Scherker, 1997 – 1997
 - . ಟಾಲ್ಸು ಕಾಲ್ಸ್ ಟ್ರಿಟ್ ಎರಡಲ್ 'ಟಿಟ್ ಕ್ರಿಟ್ ಟ್ರಿ' ಕಾರ್ಟ್ಸ್ ನಿಂಟಿ ಎಂದಿ ಕಾರ್ಟ್ ಸಾರ್ಟ್ ಸಂದರ್ಭಕ್ಕಾನ್ ಹೆಚ್ಚು ಬೆಲ್ಲೆ ಕೆ. ಸ್ಪ್ರೀಟ್ ಕಾಲ್ಗಳಾ ಪ್ರಚಿತ್ರ ಕೊಡಲು ತಿಲ್ಲಿದಾರು ಗತ್ತಿಗೆ ಎಂದರಾಗಿ ಸಂದರ್ಭನ್ನು '
 - (a) A second s Second s Second s second s second s second s
 - a an an an an an an Aire Aire an Aire a An Aire an Aire
 - - 网络大学学校 网络马克马克克拉马克马克 法法律法 化二乙基乙酰胺 医二乙烯酸 化乙烯

Page 15 of 16

マンド・シント かいしょう アンドン かんしょう かんしょう かんしょう かんしょう かんしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう ひょうしょう

C

3 17 19 1

10.0 References

- Eterl) prest 1. Technical Specifications for Clinton Power Station Unit 1, Docket No. 50-461, License No. NPF-62.
- 2. General Electric Standard Application for Reactor Fuel (GESTAR II) and US supplement, NEDE-24011-P-A-15, September 2005.
- 3. Document 0000-0067-2201-SRLR Revision 0, "Supplemental Reload Licensing Report for Clinton Power Station Unit 1 Reload 11 Cycle 12", December 2007.
- 1987-208**4**, K Document 0000--0067-2201-FBIR Revision 0, "Fuel Bundle Information Report for Clinton Power Station Unit 1 Reload 11 Cycle 12". December 2007.
 - , , 5. Document GE-NE-0000-0000-7456-01P, "Option B Scram Times For Clinton Power Station", February 2002
 - 6. NEDC-32694P-A, "Power Distribution Uncertainties for Safety Limit MCPR Evaluations," August 1999. 201 1 1 1 1 2 M 44 - A.S.
 - 7. GE-NE-0000-0042-4570-R0, "Clinton Offrated Analyses Below the PLU Power Level." September 2005.
 - 8. Calculation GENE-0000-0030-8309, "Clinton Assessment of Feedwater Riser Flow Deviation," Rev. 0, March 2005.

a ar we have been been w 计算机 医肠腔 医下下 Spr. 19 June 19 -9. EC 355034 R0, "Feedwater Riser Flow Deviation Assessment" NUCS1 とういんしゅ

- 10.3 EC 354185 R0, "Uncertainty in Feedwater Tomperature for Two Loop and Single Loop 1 Operation*
 - .11. GE-NE-0000-0026-1857-R1, " Evaluation of Operation With Equipment Out-Of-Service for the Clinton Power Station", June 28, 2004
 - 12. Document 0000-0016-5277FBIR Revision 0, "Fuel Bundle Information Report for Clinton Power Station Unit 1 Reload 9 Cycle 10", December 2003
 - 13. Document 000-0016-5277SRLR Revision 1, "Supplemental Reload Licensing Report For Clinton Power Station Unit 1 Reload 9 Cycle 10", August 2005
 - Document 0000-0038-3490FBIR Revision 0, "Fuel Bundle Information Report for Clinton 14. Power Station Unit 1 Reload 10 Cycle 11", December 2005
 - Document 0000-0038-3490SRLR Revision 1, "Supplemental Reload Licensing Report 15. for Clinton Power Station Unit 1 Reload 10 Cycle 11", January 2006
 - 16. TODI NF0700232 Revision 0, "Clinton Unit 1 Cycle 12 Final FRED Form Revision 1"
 - 17. TODI NF0700130 Revision 1, "Clinton Unit 1 Cycle 12 Customer Proposed OPL-3 Values"

Page 16 of 16