



**FPL Energy.**

**Duane Arnold Energy Center**

FPL Energy Duane Arnold, LLC  
3277 DAEC Road  
Palo, Iowa 52324

August 3, 2007

NG-07-0641  
10 CFR 50.90

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

DUANE ARNOLD ENERGY CENTER  
DOCKET NO. 50-331  
OPERATING LICENSE NO. DPR-49

Response to Request for Additional Information Regarding License Amendment  
Request (TSCR – 056A): "Elimination of License Condition 2.C.(2)(b) for Performance  
of Large Transient Tests for Extended Power Uprate (TAC NO. MD2835)

Reference: 1) M. Peifer (NMC) to USNRC, "License Amendment Request (TSCR – 056): "Elimination of License Condition 2.C.(2)(b) for Performance of Large Transient Tests for Extended Power Uprate," NG-04-0111, dated February 27, 2004 (ML040690708).

In the Reference 1 letter, the Nuclear Management Company, LLC (NMC)<sup>1</sup> submitted a license amendment request to change the Operating License for the Duane Arnold Energy Center (DAEC). The proposed amendment would remove license condition 2.C.(2)(b) to perform large transient testing as part of the Extended Power Uprate (EPU) power ascension testing program at the DAEC; specifically, the performance of a Generator Load Reject (GLR) test from essentially 100% rated thermal power.

On July 23, 2007, the Staff transmitted by facsimile a request for additional information related to that application (ML072050409). The Enclosure to this letter provides that requested information.

There are no new or revised regulatory commitments being made in this letter. Please contact Tony Browning of my Staff at (319) 851-7750, if you have any questions regarding this application.

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<sup>1</sup> By License Amendment 260, dated January 27, 2006, the facility operating license and operating authority for the Duane Arnold Energy Center was transferred to FPL Energy Duane Arnold, LLC.

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I declare under penalty of perjury that the foregoing is true and correct.  
Executed on August 3, 2007.

A handwritten signature in black ink, appearing to read "Gary Van Middlesworth". The signature is fluid and cursive, with the first name "Gary" being the most prominent.

Gary Van Middlesworth  
Site Vice President, Duane Arnold Energy Center  
FPL Energy Duane Arnold, LLC

Enclosure

cc: Administrator, Region III, USNRC  
Project Manager, DAEC, USNRC  
Resident Inspector, DAEC, USNRC  
D. McGhee (State of Iowa)

**NRC Request for Additional Information:**

Please provide the data for the following parameters (a total of 4 parameters)

1. Vessel Pressure
2. Vessel level
3. Vessel steam flow
- 4a. Neutron flux, or  
4b. Heat flux  
    whichever is most accessible

The time frame of interest is 0 to 7 seconds for each parameter.

Provide 3 to 6 data points per parameter for the time frame.

The data points should be suitably spaced to show the maximum or minimum value(s), whichever demonstrate bounding by the codes used to produce *Figure 9-2, Generator Load Rejection with Bypass Failure*, page 9-16, within *General Electric Report NEDC-32980P, Safety Analysis Report for Duane Arnold Energy Center Extended Power Uprate*. This document was submitted by you as Attachment 6 (and identified by you as containing proprietary information) to the NMC letter NG-00-1900 dated November 16, 2000 (ML003771301).

**FPL Energy Duane Arnold Response:**

The following tables provide the requested data from the June 23, 2000 generator trip event at the DAEC. It should be noted that the actual event response differs from the analytical version of the event cited above; during the actual event, the main turbine bypass valves operated correctly. This has the impact of lessening the severity of the event response in each of the four parameters in the Staff's request. In addition, the analytical response is based upon bounding (conservative) values for key parameters, such as control rod scram times and safety-relief valve (S/RV) setpoints, which will also influence the comparison between the actual event and the analytical case.

Table 1 - RPV Pressure

Time (seconds) <sup>1</sup>	Pressure (psig)	Pressure Rise ( $\Delta$ psi)	Comments
0.0	1006.5	0.0	Minimum value
1.0	1047.0	40.5	
4.4	1078.7	72.2	Maximum value
6.0	1039.0	32.5	
7.0	1014.4	7.9	

<sup>1</sup> Time is referenced to time of initial trip signal – 6-23-00 16:16:57.6

Table 2 - RPV Level

Time (seconds) <sup>1</sup>	Level (inches above TAF) <sup>2</sup>	Level (inches above Bottom of Separator Skirt) <sup>2</sup>	Comments
0.0	189.5	31.5	Maximum value
1.0	181.9	23.9	
2.4	170.4	12.4	Minimum Value
5.0	181.2	23.2	
7.0	186.2	28.2	

<sup>1</sup> Time is referenced to time of initial trip signal – 6-23-00 16:16:57.6

<sup>2</sup> TAF – Top of Active Fuel (Bottom of Separator Skirt = +158 inches TAF)

Table 3 – RPV Steam Flow

Time (seconds) <sup>1</sup>	Steam Flow (Mlb <sub>m</sub> /hr)	Comments
0.0	7.25	Maximum value
0.4	3.16	
2.4	2.02	
3.4	1.82	
7.0	1.72	Minimum Value

<sup>1</sup> Time is referenced to time of initial trip signal – 6-23-00 16:16:57.6

Table 4 – Neutron Flux

Time (seconds) <sup>1</sup>	APRM <sup>3</sup> Flux (% of rated)	Comments
0.0	100 <sup>4</sup>	The maximum value is assumed to be <120% rated, as no flux scram signal was recorded.
0.4	75.7	
1.4	67.2	
3.4	20.2	
4.8	10.1	
7.0	4.1	Minimum Value

<sup>1</sup> Time is referenced to time of initial trip signal – 6-23-00 16:16:57.6

<sup>3</sup> APRM – Average Power Range Monitor

<sup>4</sup> Assumed value – The plant was at 100% power at the time of the trip. The archived data from the plant process computer made a linear interpolation between the last recorded value before the trip (100% rated ) to the first recorded data point after the trip, giving a t = 0 value of 79.1%, which is not valid.