

This letter forwards proprietary information in accordance with 10 CFR 2.390. The balance of this letter may be considered non-proprietary upon removal of Attachment 3.

Sam Belcher
Vice President-Nine Mile Point

P.O. Box 63
Lycoming, New York 13093
315.349.5200
315.349.1321 Fax

CENGSM

a joint venture of



NINE MILE POINT
NUCLEAR STATION

January 31, 2011

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 2; Docket No. 50-410

Supplemental Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 –
Re: The License Amendment Request for Extended Power Uprate Operation (TAC
No. ME1476) – Steam Dryer

- REFERENCES:**
- (a) Letter from K. J. Polson (NMPNS) to Document Control Desk (NRC), dated May 27, 2009, License Amendment Request (LAR) Pursuant to 10 CFR 50.90: Extended Power Uprate
 - (b) Letter from R. Guzman (NRC) to S. L. Belcher (NMPNS), dated October 6, 2010, Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 – Re: The Steam Dryer Review of the License Amendment Request for Extended Power Uprate Operation (TAC No. ME1476)
 - (c) Letter from J. Pacher (NMPNS) to Document Control Desk (NRC), dated November 5, 2010, Response to Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 – Re: The License Amendment Request for Extended Power Uprate Operation (TAC No. ME1476) – Steam Dryer
 - (d) Letter from S. Belcher (NMPNS) to Document Control Desk (NRC), dated December 10, 2010, Response to Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 – Re: The License Amendment Request for Extended Power Uprate Operation (TAC No. ME1476) – Steam Dryer

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ADD/ NRR

Document Control Desk

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Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information in support of a previously submitted request for amendment to Nine Mile Point Unit 2 (NMP2) Renewed Operating License (OL) NPF-69. The request, dated May 27, 2009 (Reference a), proposed an amendment to increase the power level authorized by OL Section 2.C.(1), Maximum Power Level, from 3467 megawatts-thermal (MWt) to 3988 MWt.

By letter dated October 6, 2010 (Reference b), the NRC staff requested additional information (RAI) regarding the steam dryer. NMPNS responded to the steam dryer RAI on November 5, 2010 (Reference c) and December 10, 2010 (Reference d). During a conference call between the NRC and NMPNS conducted on November 29, 2010, the NRC asked additional questions pertaining to the November 5, 2010, responses to requests NMP2-EMCB-SD-RAI-8 S01 (b) and NMP2-EMCB-SD-RAI-21 S01. Attachment 1 (non-proprietary) and Attachment 3 (proprietary) provide supplemental information to address those NRC questions.

Attachment 3 is considered to contain proprietary information exempt from disclosure pursuant to 10 CFR 2.390. Therefore, on behalf of Continuum Dynamics Incorporated (CDI), NMPNS hereby makes application to withhold this attachment from public disclosure in accordance with 10 CFR 2.390(b)(1). The affidavit from CDI detailing the reason for the request to withhold the proprietary information is provided in Attachment 2.

Should you have any questions regarding the information in this submittal, please contact John J. Dosa, Director Licensing, at (315) 349-5219.

Very truly yours,

A handwritten signature in black ink, appearing to be the name of John J. Dosa, written in a cursive style.

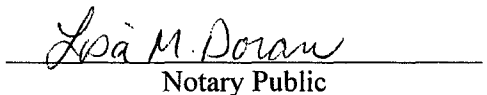
STATE OF NEW YORK :
: TO WIT:
COUNTY OF OSWEGO :

I, Sam Belcher, being duly sworn, state that I am Vice President – Nine Mile Point, and that I am duly authorized to execute and file this supplemental information on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 31st day of January, 2011.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

9/12/2013
Date

Lisa M. Doran
Notary Public in the State of New York
Oswego County Reg. No. 01DO6029220
My Commission Expires 9/12/2013

SB/STD

Attachments:

1. Supplemental Information Regarding License Amendment Request for Extended Power Uprate Operation (Non-Proprietary)
2. Affidavit from Continuum Dynamics Incorporated (CDI) Justifying Withholding Proprietary Information
3. Supplemental Information Regarding License Amendment Request for Extended Power Uprate Operation (Proprietary)

cc: NRC Regional Administrator, Region I
NRC Resident Inspector
NRC Project Manager
A. L. Peterson, NYSERDA (w/o Attachment 3)

ATTACHMENT 2

**AFFIDAVIT FROM
CONTINUUM DYNAMICS INCORPORATED (CDI)
JUSTIFYING WITHHOLDING
PROPRIETARY INFORMATION**



Continuum Dynamics, Inc.

(609) 538-0444 (609) 538-0464 fax

34 Lexington Avenue Ewing, NJ 08618-2302

AFFIDAVIT

Re: Supplemental Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 –
Re: The License Amendment Request for Extended Power Uprate Operation (TAC No. ME1476) – Steam Dryer

I, Alan J. Bilanin, being duly sworn, depose and state as follows:

1. I hold the position of President and Senior Associate of Continuum Dynamics, Inc. (hereinafter referred to as C.D.I.), and I am authorized to make the request for withholding from Public Record the Information contained in the documents described in Paragraph 2. This Affidavit is submitted to the Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 2.390(a)(4) based on the fact that the attached information consists of trade secret(s) of C.D.I. and that the NRC will receive the information from C.D.I. under privilege and in confidence.
2. The Information sought to be withheld, as transmitted to Constellation Energy Group as attachments to C.D.I. Letter No. 11006 dated 17 January 2011, Supplement Information Regarding Nine Mile Point Nuclear Station, Unit No. 2 – Re: The License Amendment Request for Extended Power Uprate Operation (TAC No. ME1476) – Steam Dryer.
3. The Information summarizes:
 - (a) a process or method, including supporting data and analysis, where prevention of its use by C.D.I.'s competitors without license from C.D.I. constitutes a competitive advantage over other companies;
 - (b) Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - (c) Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

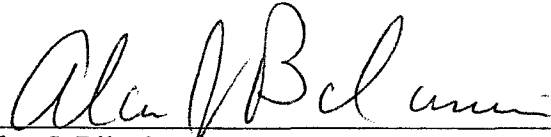
The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs 3(a), 3(b) and 3(c) above.

4. The Information has been held in confidence by C.D.I., its owner. The Information has consistently been held in confidence by C.D.I. and no public disclosure has been made and it is not available to the public. All disclosures to third parties, which have been limited, have been made pursuant to the terms and conditions contained in C.D.I.'s Nondisclosure Secrecy Agreement which must be fully executed prior to disclosure.


5. The Information is a type customarily held in confidence by C.D.I. and there is a rational basis therefore. The Information is a type, which C.D.I. considers trade secret and is held in confidence by C.D.I. because it constitutes a source of competitive advantage in the competition and performance of such work in the industry. Public disclosure of the Information is likely to cause substantial harm to C.D.I.'s competitive position and foreclose or reduce the availability of profit-making opportunities.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to be the best of my knowledge, information and belief.

Executed on this 17 day of JANUARY 2011.


Alan J. Bilanin
Continuum Dynamics, Inc.

Subscribed and sworn before me this day: Jan 17, 2011


Eileen P. Burmeister, Notary Public

ATTACHMENT 1

**SUPPLEMENTAL INFORMATION REGARDING LICENSE
AMENDMENT REQUEST FOR EXTENDED POWER UPRATE
OPERATION (NON-PROPRIETARY)**

Certain information, considered proprietary by Continuum Dynamics Incorporated, has been deleted from this Attachment. The deletions are identified by double square brackets.

ATTACHMENT 1
SUPPLEMENTAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST FOR
EXTENDED POWER UPRATE OPERATION
(NON-PROPRIETARY)

By letter dated May 27, 2009, as supplemented on August 28, 2009, December 23, 2009, February 19, 2010, April 16, 2010, May 7, 2010, June 3, 2010, June 30, 2010, July 9, 2010, July 30, 2010, October 8, 2010, October 28, 2010, November 5, 2010, December 10, 2010, December 13, 2010, and January 19, 2011 Nine Mile Point Nuclear Station, LLC (NMPNS) submitted for Nuclear Regulatory Commission (NRC) review and approval, a proposed license amendment requesting an increase in the maximum steady-state power level from 3467 megawatts thermal (MWt) to 3988 MWt for Nine Mile Point Unit 2 (NMP2).

By letter dated October 6, 2010, the NRC staff requested additional information (RAI) regarding the steam dryer. NMPNS responded to the steam dryer RAI on November 5, 2010 and December 10, 2010. During a conference call between the NRC and NMPNS conducted on November 29, 2010, the NRC asked additional questions pertaining to the November 5, 2010, responses to requests NMP2-EMCB-SD-RAI-8 S01 (b) and NMP2-EMCB-SD-RAI-21 S01. This attachment provides supplemental information to address those questions.

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SUPPLEMENTAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST FOR
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Supplemental Information for NMPNS Response to NMP2-EMCB-SD-RAI-8 S01 (b)

NRC Question: The NMP2 low power coherence data provided in the response to RAI NMP2-EMCB-SD-RAI-8 S01 (b) in the NMPNS submittal dated November 5, 2010 does not correlate with the Quad Cities Unit 2 (QC2) low power coherence data used as a benchmark. Provide additional justification for the use of the QC2 data.

NMPNS Response

NMPNS concurs with the NRC that the coherence for the low power data provided in the NMPNS submittal dated November 5, 2010 (Figure RAI-8 S01 (b) – S1) does not correlate with the QC2 low power coherence data (Figure RAI-8 S01 (b) – S2). The low power data set was collected during a NMP2 power ascension on May 2 through May 7, 2010 at Current Licensed Thermal Power (CLTP) conditions.

NMPNS reviewed the 2010 NMP2 data against a low power data set collected in 2008. The coherence for the data set collected in 2008 was provided to the NRC in Attachments 4 and 14 of a NMPNS submittal dated December 23, 2009. The coherence is reproduced in Figure RAI-8 S01 (b) – S3. As can be seen in the figures, there is a difference between the 2008 and 2010 low power data sets. [[

Figure RAI-8 S01 (b) – S1: Low Power Coherence for NMP2 Data Set Collected in 2010

(3)]]

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SUPPLEMENTAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST FOR
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Figure RAI-8 S01 (b) – S2: Low Power Coherence for QC2

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Figure RAI-8 S01 (b) - S3: Low Power Coherence for NMP2 Data Set Collected in 2008

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NMPNS evaluated the impact that the application of the 2008 low power data would have on the dryer stresses. This evaluation was performed by using the 2008 low power data with 2010 CLTP data and Rev. 4.1 of the Acoustic Circuit Model (ACM). The computed CLTP stresses utilizing the 2008 low power data are lower than those calculated using the 2010 low power data. This conclusion may be seen by examining the 18 nodes with the lowest stress ratios from the use of the 2010 low power data, and comparing these stress ratios with the stress ratios obtained from the use of the 2008 low power data, as summarized below:

Location	Node	2010 SR-P	2010 SR-a	2008 SR-P	2008 SR-a
1. Closure Plate/Middle Hood	89317	2.86	3.52	2.85	3.47
2. Outer Cover Plate/Outer Hood	95236	5.32	3.09	5.39	3.27
3. Hood Support/Outer Cover Plate/Outer Hood	95267	1.97	3.13	1.42	3.13
4. Hood Support/Inner Hood	95644	6.41	3.38	5.10	3.41
5. Top Thick Plate/Inner Hood/Top Plate	85512	6.24	3.22	6.44	3.26
6. Hood Support/Outer Base Plate/Middle Backing Bar	98067	2.10	3.31	2.09	3.41
7. Thick Vane Bank Plate/Thin Vane Bank Plate/Side Plate/Side Plate Ext/End Plate	90170	6.05	3.42	5.91	3.34
8. Hood Support/Inner Hood	99540	5.53	3.17	4.37	3.21
9. Hood Support/Inner Hood	95638	7.03	3.51	5.52	3.53
10. Side Plate/Top Plate	93031	5.94	3.64	5.91	3.51
11. Closure Plate/Inner Hood	95975	2.56	4.00	2.56	4.22
12. Entry Bottom Perforated/Side Plate/End Plate	91154	5.16	3.52	5.30	3.67
13. Top Thick Plate/Side Plate/Closure Plate	96096	3.73	4.09	3.73	4.39
14. Side Plate/Brace	89646	5.79	4.22	3.44	4.23
15. Hood Support/Inner Hood	90430	6.89	3.65	5.43	3.67
16. Hood Support/Middle Hood	96037	6.44	3.78	5.25	3.79
17. Outer Cover Plate/Man Way Overlap	87488	5.84	3.76	5.85	4.10

The minimum alternating stress ratio (SR-a) with the 2010 low power data is 3.09 (location 2 in the above table), while the minimum alternating stress ratio with the 2008 low power data is 3.13 (location 3). Based on this evaluation, NMPNS concludes that the use of the 2010 low power data provides a conservative result, and is therefore acceptable.

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Supplemental Information for NMPNS Response to NMP2-EMCB-SD-RAI-21 S01

NRC Question No. 1. Item (1) in RAI 21 is not explicitly addressed.

NMPNS Response

Item (1) of the RAI concerns the deviation between the sub-model and global model stresses on the cut boundary when the boundary is close to a structural discontinuity. The November 5, 2010, RAI response addressed the general case of higher order stress variations on the intersection boundaries without explicitly identifying the origins of these higher order variations. This response discussed that the loads applied to the intersected edges of the sub-model consist of distributed forces and moments that are obtained by integrating the global model stresses, σ_g , along the intersection line. Subsequent imposition of these forces and moments upon the sub-model boundaries produces stresses, σ_m , that, though somewhat different from σ_g on the sub-model boundaries, nevertheless integrate to the same forces and moments on the edge. The mismatch stress, $\sigma_h = \sigma_g - \sigma_m$, has zero net force and moment and decays rapidly as one moves away from the intersection boundary, in accordance with the St. Venant's principle. Calculation results provided in Table RAI-21 S01-1 in the RAI response dated November 5, 2010, reported that the effect of omitting these higher order variations upon the computed stress reduction factor is small; specifically, the error between calculation C0 (higher order variation omitted) and C2 (higher order variations retained) is 0.8%.

The allusion to a structural discontinuity in Item (1) of the RAI was originally intended to exemplify one instance under which such a mismatch stress, σ_h , might arise. When a structural discontinuity or stress concentration lies near an intersection boundary, but outside the volume occupied by the sub-model, one would expect to see a stronger stress variation on the portion of the intersection boundary nearest to the discontinuity. Thus, the local mismatch stress, σ_h , would then naturally be higher than when no such stress concentrations outside the model were present. However, as explained above and in the RAI response, the stress mismatch would still produce zero net forces/moments and adheres to the St. Venant's principle. Therefore, the conclusions of the RAI response are unchanged.

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NRC Question No. 2. Compare stress distributions between the global and sub-models.

NMPNS Response

Tables RAI-21 S01 - S1 and RAI-21 S01 – S2 list the component stresses at the maximum stress stations for two points on the drain channel (the component that is most highly stressed). The first point (node 56724) is on the bottom edge of the drain channel and the second point (node 56197) is located higher up on the drain channel and closer to the weld. These locations are selected because they are away from both the weld and the intersection boundaries. The stress distributions are provided prior to application of step 4 (discussed at length in the original RAI response), so that only the forces and moments extracted from the global model are applied to the perimeter edges. Both locations are depicted in Figure RAI-21 S01 - S1.

Stress component	Stress [psi]		
	Global	Shell submodel	Solid submodel
σ_{xx}	92.12	74.05	61.26
σ_{yy}	575.96	565.25	577.91
σ_{zz}	N/A (identically zero at free edge)		
σ_{xy}	191.39	203.04	188.63
σ_{yz}	N/A (identically zero at free edge)		
σ_{zx}	N/A (identically zero at free edge)		

Table RAI-21 S01 – S1 - Stress results at node 56724 at bottom of the drain channel

Stress component	Stress [psi]		
	Global	Shell submodel	Solid submodel
σ_{xx}	-28.00	-5.72	-8.36
σ_{yy}	-645.87	-659.20	-700.74
σ_{zz}	-293.98	-313.37	-317.99
σ_{xy}	38.11	56.16	75.81
σ_{yz}	-26.19	27.37	63.33
σ_{zx}	4.00	-2.17	-6.86

Table RAI-21 S01 – S2 - Stress results at node 56197

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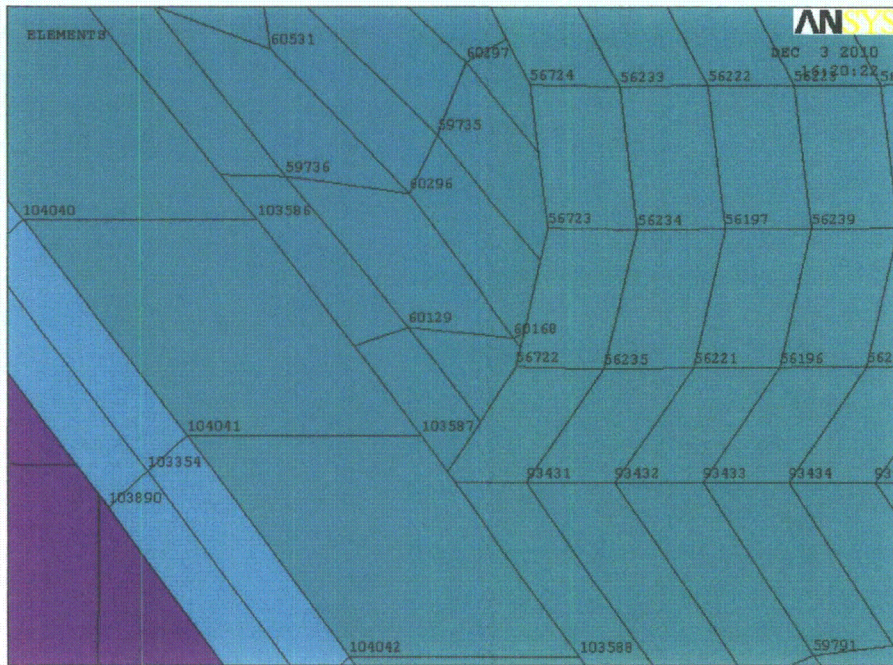


Figure RAI-21 S01 – S1 - Global model node indices in the vicinity of the drain/skirt weld. Stress components are compared at node 56724 with $(x,y,z) = (-91.91, 80.18, -101.5)$ located on the bottom edge of the drain channel, and at node 56197 located on the drain channel at $(x,y,z) = (-92.08, 78.91, -98.48)$.

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NRC Question No. 3. Because of [[

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calculations C1 and C0 listed in Table RAI-21 S01-1.

NMPNS Response

NMPNS concurs that, like any numerical method, the sub-modeling approach is subject to modeling, numerical, and discretization errors. NMPNS also agrees that the [[⁽³⁾]] in the cited Table RAI-21 S01 – 1 in the RAI response dated November 5, 2010 (NMP2-EMCB-SD-RAI-21 S01), is a reasonable estimate of the [[

⁽³⁾]]. The following provides the rationale

for this conclusion:

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Another way to understand this rationale is to note that the primary purpose of utilizing a sub-model is to obtain more accurate stress estimates at a location through the use of higher resolution and more detailed analysis. This is true of any sub-modeling or sub-structuring approach, including the displacement-driven sub-structuring method in ANSYS that is considered standard. At some point in each such approach, the boundary displacements, stresses, or integrated forces must be extracted from a global model whose mesh resolution is coarser than that of the sub-model. Subjecting the sub-model result to both [[

⁽³⁾]]. However, no credit for such a reduction is taken.