



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 5, 2015

Mr. Peter Orphanos
Vice President Nine Mile Point
Exelon Generation Company, LLC
Nine Mile Point Nuclear Station, LLC
P. O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT 2 - REQUEST FOR ADDITIONAL
INFORMATION REGARDING POST EXTENDED POWER UPRATE STEAM
DRYER INSPECTION RESULTS (TAC NO. MF4559)

Dear Mr. Orphanos:

By letter dated July 28, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14216A347), as supplemented by letter dated January 14, 2015, (ADAMS Accession No. ML15023A030), Exelon Generation Company, LLC, submitted the post extended power uprate steam dryer inspection results, and the supporting reports for the Nine Mile Point Nuclear Station, Unit 2 (NMP2). The submittals were in accordance with operating license conditions 2.C.(20)(f) and 2.C.(2)(g).

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided in that letter and has determined that additional information is needed to complete its review. Enclosed is the NRC staff's request for additional information (RAI). Enclosure 1 provides the non-proprietary version of the RAIs, and Enclosure 2 provides the proprietary version of the RAIs, identifying the proprietary information with text in double brackets ([[...]]).

NOTICE: Enclosure 2 to this letter contains
Proprietary information. Upon separation
from Enclosure 2, this letter is
DECONTROLLED.

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The RAI was discussed with your staff and additional information was provided in the January 14, 2015, supplement. The staff is requesting further additional information, and it was agreed that your response would be provided no later than August 20, 2015.

Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Mozafari for,".

Brenda L. Mozafari, Sr. Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosures:

1. RAIs (Non-Proprietary)
2. RAIs (Proprietary)

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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION

POST EXTENDED POWER UPRATE STEAM DRYER INSPECTION RESULTS

AND SUPPORTING REPORTS

NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

(NON-PROPRIETARY)

Proprietary information pursuant to Section 2.390 of Title 10 of the *Code of Federal Regulations* has been redacted from this document.

Redacted information is identified by blank space enclosed within double brackets.

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REQUEST FOR ADDITIONAL INFORMATION

POST EXTENDED POWER UPRATE STEAM DRYER INSPECTION RESULTS

AND SUPPORTING REPORTS

NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

(NON-PROPRIETARY)

By letter dated July 28, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14216A347), as supplemented by letter dated January 14, 2015, (ADAMS Accession No. ML15023A030), Exelon Generation Company, LLC (the licensee), submitted the post extended power uprate (EPU) steam dryer (SD) inspection results for Nine Mile Point Nuclear Station, Unit 2 (NMP2), in accordance with operating license condition 2.C.(20)(f) and 2.C.(20)(g).

The NRC Staff has reviewed the referenced documents provided by the licensee in response to *EMCB-NMP2-MF4559-SD-First RFO Post EPU-RAI-3* pertaining to the acoustic circuit model (ACM) 4.1R computer code revision, and changes to the acoustic damping values and bias uncertainties. The licensee is requested to provide the following additional information:

First Refueling Outage (RFO) Post EPU-RAI-4

The licensee has installed the bolted U-channel attached to upper dryer inner side plates connected to inner vane banks to structurally stiffen the steam dryer such that the minimum alternating stress ratio (SR-a) becomes greater than 2.0. The staff is requesting the following clarification regarding the implemented retrofit:

- a. Provide a comparison of stress ratios (SR-P and SR-a) for the 54 nodes listed in Table 17 (CDI [Continuum Dynamics, Inc.] Report 14-08P, Rev. 0) for the dryer with and without the U-channel stiffener and subject to N59 load (Drain Trap out of service).
- b. For the stiffened steam dryer, please provide cumulative stress distributions for the five locations on both the hood and skirt with the SR-a.

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Enclosure 1

- c. Explain how dryer alternating stresses due to Reactor Recirculation Pump (RRP) Vane Passing Frequency (VPF) tones are accounted for in the modified NMP2 dryer. The dryer structural modes may have shifted due to the addition of the U-channel so some may now align with VPF.

First RFO Post EPU-RAI-5

[[

a.

b.

]]

First RFO Post EPU-RAI-6

[[

]] The staff is requesting the following clarifications related to the modified ACM 4.1 code (ACM 4.1R code), and the associated Main Steam Line (MSL) signals.

- a. Explain why the unfiltered lower MSL C strain gage power spectral density (PSD) is so much higher than those of MSL A, B, and D (See Figures 3.1 a, b; and 3.2 a, b in CDI Report 14-09P). Confirm the data acquisition and calibration settings, along with the matching of strain gages and channel numbers.
- b. Explain the cause(s) of the sharp ~125 Hz peaks in the PSDs of MSL D.
- c. [[

]]

d. [[

(i)

(ii)

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e. [[

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First RFO Post EPU-RAI-7

a. [[

]]

b. [[

]]

- c. What bias error and uncertainty are assigned to the dryer loading associated with the 89.3 Hz RCIC valve closure tone and]]?
Provide the same information for the ~125 Hz peak in MSL D.

References:

1. CDI Report No. 14-09P, "Acoustic and Low Frequency Hydrodynamic Loads at 115% CLTP [Current Licensed Thermal Power] Target Power Level on Nine Mile Point Unit 2 Steam Dryer to 250 Hz Using ACM 4.1R" (ML15022A666).
2. CDI Report No. 14-08P, "Stress Re-Evaluation of Nine Mile Point Unit 2 Steam Dryer at 115% CLTP" (ML15022A665).
3. CDI Report No. 14-04P, "Computation of the Cumulative Usage Factor for the 115% stress Re-Evaluation of Nine Mile Point Unit 2 Steam Dryer at 115% CLTP power level at Nine Mile Point Unit 2 with the Inboard RCIC valve closed" (ML15022A664).

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Please contact me if you have any questions.

Sincerely,

/RA RGuzman for/

Brenda L. Mozafari, Sr. Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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Enclosures:

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2. RAIs (Proprietary)

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ADAMS Accession Nos.: PKG: ML15198A356 LTR: ML15198A359

Enclosure 2: ML15198A363

*via e-mail dated July 13, 2015

OFFICE	DORL/LPLI-1/PM	DORL/LPLI-1/LA	DE/EMBC/BC(A)	DORL/LPLI-1/BC (A)	DORL/LPLI-1/PM
NAME	(RGuzman for) BMozafari	KGoldstein	YLi*	MDudek	(RGuzman for) BMozafari
DATE	8/05/2015	7/29/2015	7/13/2015	8/04/2015	8/05/2015

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