



**Nebraska Public Power District**

*Always there when you need us*

NLS2016033

June 22, 2016

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

**Subject:** Data from Metamic Coupon Sampling Program  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

**Reference:** Letter from Stewart B. Minahan, Nebraska Public Power District, to U.S. Nuclear Regulatory Commission, dated April 17, 2007, "Response to Request for Additional Information Regarding License Amendment Request for Onsite Spent Fuel Storage Expansion" (NLS2007012)

Dear Sir or Madam:

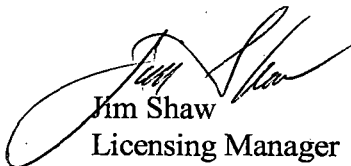
The purpose of this letter is for the Nebraska Public Power District (NPPD) to provide to the Nuclear Regulatory Commission surveillance data from the Cooper Nuclear Station (CNS) Metamic coupon sampling program. The purpose of the sampling program is to characterize certain physical and chemical properties of the Metamic sample coupons in the CNS spent fuel storage pool. Per the referenced letter, NPPD committed to remove a Metamic coupon from the spent fuel pool for testing after 2, 4, 8, 12, 16, 20, 24, and 28 years, including performance of a neutron attenuation test after 4, 12, and 20 years. This letter pertains to the eight year test.

Coupon 102-031A-2 was removed from the spent fuel pool after eight years and the testing results are provided in the Enclosure. Inspection results indicated no bowing, pitting, or swelling. Minor corrosion was found around the hole where the coupon connects to the tree. All measurements were within close tolerances of the pre-irradiation baseline data and all inspection acceptance criteria were met.

This letter contains no regulatory commitments.

Should you have any questions regarding this matter, please contact me at (402) 825-2788.

Sincerely,

  
Jim Shaw  
Licensing Manager

/lb

ADD  
NRR

NLS2016033

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Enclosure - Testing Data for Metamic Sample Coupon 102-031A-2

cc: Regional Administrator w/enclosures  
USNRC Region IV

Cooper Project Manager w/enclosures  
USNRC - NRR Plant Licensing Branch IV-2

Senior Resident Inspector w/enclosures  
USNRC - CNS

NPG Distribution w/o enclosures

CNS Records w/enclosures

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Enclosure  
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Testing Data for Metamic Sample Coupon 102-031A-2

**ATTACHMENT 1 COUPON DATA FORM**

ATTACHMENT 1 COUPON DATA FORM

**COUPON DATA FORM**

Exhibit 7.3.1

<p>Coupon I. D. : <u>102-031A-2</u></p> <p>DATE INSTALLED: <u>01/04/2008</u></p> <p>DATE REMOVED: <u>4/11/2016</u></p> <p>RADIATION DOSE: <u>0.49</u></p> <p>NOTES: <i>Slight corrosion around the hole.</i></p>													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">PRE-IRRAD.</th> <th style="width: 20%;">POST-IRRAD.</th> </tr> </thead> <tbody> <tr> <td>WEIGHT, GMS</td> <td align="center">84.66</td> <td align="center">84.98</td> </tr> <tr> <td>SPECIFIC GRAVITY</td> <td align="center">2.658</td> <td align="center">2.666</td> </tr> <tr> <td>B10 gms/cm<sup>2</sup></td> <td align="center">N/A</td> <td align="center">N/A</td> </tr> </tbody> </table>		PRE-IRRAD.	POST-IRRAD.	WEIGHT, GMS	84.66	84.98	SPECIFIC GRAVITY	2.658	2.666	B10 gms/cm <sup>2</sup>	N/A	N/A	
	PRE-IRRAD.	POST-IRRAD.											
WEIGHT, GMS	84.66	84.98											
SPECIFIC GRAVITY	2.658	2.666											
B10 gms/cm <sup>2</sup>	N/A	N/A											

**LENGTH AND WIDTH, INCHES**

	PRE-IRRAD	POST-IRRAD
A	6.063	<del>6.070</del> <sup>6.070</sup>
B	6.058	6.060
C	6.048	6.046
D	4.043	4.046
E	4.063	4.064
F	4.070	4.078
BY		N/A
DATE	*	4/11/2016

	THICKNESS, in.		ABSORPTION %	
	PRE	POST	PRE	POST
G	.080	.085	N/A	N/A
H	.080	.0835	N/A	N/A
K	.079	.083	N/A	N/A
L	.079	.082	N/A	N/A
M	.079	.083	N/A	N/A
BY		N/A	N/A	N/A
DATE	*	4/11/2016	N/A	N/A

N/A  
Pre-Characterization Inspector / Date

BW GAP 4/11/16  
Post-Irradiation Inspector / Date

\* PRE-IRRAD VALUES OBTAINED ON 5/25/07 BY HOLTEC.

ATTACHMENT 2 COUPON DATA WORKSHEET

COUPON DATA WORKSHEET

Coupon ID 102-031A-2

Exhibit 7.3.2

PRE-IRRADIATION

DRY WEIGHT, Gms	84.66
WET WEIGHT, Gms	52.90
TEMPERATURE, °C	24
H2O DENSITY, g/cc	0.99732
DENSITY g/cc	2.658

POST-IRRADIATION

DRY WEIGHT, Gms	84.98
WET WEIGHT, Gms	53.23
TEMPERATURE, °C	29
H2O DENSITY, g/cc	0.9962
DENSITY g/cc	2.666

$$\text{DENSITY} = \text{H2O DENSITY} \times \frac{\text{DRY WEIGHT}}{\text{DRY WEIGHT} - \text{WET WEIGHT}}$$

PRE-IRRADIATION ATTENUATION

POST-IRRADIATION ATTENUATION

DIRECT BEAM
BACKGROUND
STANDARD

DIRECT BEAM	N/A
BACKGROUND	JAE 4/13/10
STANDARD	

SAMPLE	CNTS IN 5 MIN	% TRANS.	B-10
G			
K			
M			

SAMPLE	CNTS IN 5 MIN	% TRANS.	B-10
G			
K			
M			

Inspector: N/A Date: N/A

Serial Number	Data Point	Baseline Data	April 2016 Data	Delta of Base to 2016 Data	Acceptance Criteria
102-031A-2  Dose 0.49 mR/hr	A	6.063	6.07	0.007	Good
	B	6.058	6.06	0.002	Good
	C	6.048	6.046	0.002	Good
	D	4.043	4.046	0.003	Good
	E	4.063	4.064	0.001	Good
	F	4.07	4.078	0.008	Good
	G	0.08	0.085	0.005	Good
	H	0.08	0.085	0.005	Good
	K	0.079	0.083	0.004	Good
	L	0.079	0.082	0.003	Good
	M	0.079	0.083	0.004	Good
	Weight (D)	84.66	84.98	0.377982518	Good
	Weight (W)	52.9	53.23		
Density	2.658	2.666			

Data for A through M is in inches. Weight is in grams. Delta of A through M is in inches. Delta for Weight is in % change.  
AC for Weight is  $\Delta \leq \pm 5\%$ . AC for A through F is  $\leq \pm 0.125"$ . AC for G through M is  $\leq \pm 0.07"$ .