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~~Attachment 1 contains proprietary information. Withhold from public disclosure under 10 CFR 2.390. When Attachment 1 is separated, the remainder of the Attachments and this cover letter are decontrolled.~~

RS-14-238

August 25, 2014

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Transmittal of Proprietary Meeting Slides

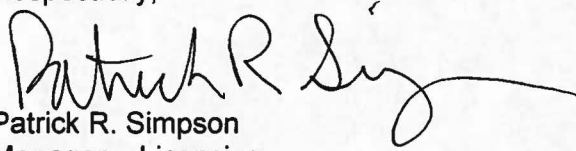
The purpose of this letter is to transmit the proprietary slides generated by AREVA, Inc. for Dresden Nuclear Power Station (DNPS) and Quad Cities Nuclear Power Station (QCNPS) in support of the pre-submittal meeting conducted on August 19, 2014. The pre-submittal meeting was conducted to discuss the planned Exelon Generation Company, LLC (EGC) amendment request to transition to ATRIUM 10XM fuel at DNPS and QCNPS.

This letter provides a copy of the August 19, 2014, presentation material, which AREVA, Inc. considers to contain proprietary information. The proprietary information is identified by bracketed text. AREVA requests that the proprietary information in Attachment 1 to this letter be withheld from public disclosure, in accordance with the requirements of 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," paragraph (a)(4). A signed affidavit supporting this request is provided in Attachment 2 to this letter. Attachment 3 to this letter provides a non-proprietary version of the presentation.

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There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Timothy A. Byam at (630) 657-2818.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", with a long horizontal flourish extending to the right.

Patrick R. Simpson
Manager – Licensing

Attachments:

1. Fuel Transition License Amendment Request Pre-Submittal Meeting Presentation (Proprietary), dated August 19, 2014
2. AREVA, Inc. Affidavit
3. Fuel Transition License Amendment Request Pre-Submittal Meeting Presentation (Non-Proprietary), dated August 19, 2014

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ATTACHMENT 2

AREVA, Inc.
Affidavit

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AFFIDAVIT

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

1. My name is Alan B. Meginnis. I am Manager, Product Licensing, for AREVA Inc. and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by AREVA to determine whether certain AREVA information is proprietary. I am familiar with the policies established by AREVA to ensure the proper application of these criteria.

3. I am familiar with the AREVA information contained in the Exelon Generation Company, LLC Dresden and Quad Cities Stations Presentation "Fuel Transition License Amendment Request Pre-Submittal Update Meeting," dated August 19, 2014 and referred to herein as "Document." Information contained in this Document has been classified by AREVA as proprietary in accordance with the policies established by AREVA for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by AREVA and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure. The request for withholding of proprietary information is made in accordance with 10 CFR 2.390. The information for which withholding from disclosure is

requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

6. The following criteria are customarily applied by AREVA to determine whether information should be classified as proprietary:

- (a) The information reveals details of AREVA's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for AREVA.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for AREVA in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by AREVA, would be helpful to competitors to AREVA, and would likely cause substantial harm to the competitive position of AREVA.

The information in the Document is considered proprietary for the reasons set forth in paragraphs 6(b), 6(d) and 6(e) above.

7. In accordance with AREVA's policies governing the protection and control of information, proprietary information contained in this Document have been made available, on a limited basis, to others outside AREVA only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. AREVA policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

Car E McCoy

SUBSCRIBED before me this 21st
day of August, 2014.

Susan K McCoy

Susan K. McCoy
NOTARY PUBLIC, STATE OF WASHINGTON
MY COMMISSION EXPIRES: 1/14/2016



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ATTACHMENT 3

Fuel Transition License Amendment Request
Pre-Submittal Meeting Presentation (Non-Proprietary),
dated August 19, 2014

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Fuel Transition License Amendment Request Pre-Submittal Update Meeting

Exelon Generation Company, LLC
Dresden and Quad Cities Stations
August 19, 2014



Meeting Agenda

- Background
- Critical Power Correlation For OPTIMA2
- SLMCPR for OPTIMA2
- Review and Status Update
- Schedule
- Questions

Background

- Dresden Nuclear Power Station (DNPS) and Quad Cities Nuclear Power Station (QCNPS) are both General Electric BWR/3 reactors with Mark I containments
- Current power levels
 - DNPS Units 2 and 3 – 2957 MWt
 - QCNPS Units 1 and 2 – 2957 MWt
- Renewed Operating License expires
 - DNPS Unit 2 – 12/22/2029
 - DNPS Unit 3 – 01/12/2031
 - QCNPS Units 1 and 2 – 12/14/2032
- DNPS and QCNPS fuel transition project began in December 2012 when AREVA was awarded a contract for fuel beginning in 2016
- April 2013 through present AREVA has been collecting and evaluating plant data needed for fuel transition
- In June 2013 fuel transition LAR planning activities began

Critical Power Correlation for OPTIMA2

- Application of EMF-2245(P)(A) – *Application of Siemens Power Corporation's Critical Power Correlations to Co-Resident Fuel*
 - Method describes a process for generating additive constants for co-resident fuel using an NRC AREVA critical power correlation
- Two methods described
 - Direct and Indirect method
- Direct method is used when experimental test data is available for co-resident fuel
- Indirect method is used when experimental test data is not available and involves using a calculated critical power database
 - Critical power is calculated using co-resident fuel vendor's NRC approved critical power correlation
 - Using co-variance, a combined standard deviation is calculated using both the standard deviation of the AREVA correlation applied to the database, and the standard deviation of the co-resident fuel vendor's approved correlation

Critical Power Correlation for OPTIMA2

- Indirect method used in the QCNPS and DNPS application
 - Calculated critical power database was constructed using the Westinghouse approved OPTIMA2 correlation
 - [
-]
- The first step in the process is to select the AREVA critical power correlation to be used
 - [
-]

Critical Power Correlation for OPTIMA2

- Next step is a partition of the data
 - Consistent with the process used in developing additive constants for AREVA fuel, the data is randomly divided into two sets
 - The first set of defining data contains [
]
 - [
]
 - Second set contains the remaining [
]
 - All data points are used to evaluate the mean and uncertainty of the correlation
 - [
]

Critical Power Correlation for OPTIMA2

- F-effective captures the local rod peaking effects and consists of two parts
 - FEFFO
 - Depends solely on the rod local peaking of interest, and its surrounding neighbors
 - Calculated using the methods described in Section 2.3 from EMF-2209PA, “SPCB Critical Power Correlation”
 - Additive constant (ℓ)
 - Accounts for other local effects of spacing and geometry
- [

]

Critical Power Correlation for OPTIMA2

- []
- [] calculations are performed using the defining and validating data set
 - ECPR is the figure of merit and is defined as the AREVA calculated critical power divided by the database critical power
 - ECPR and standard deviation are calculated for each set of data, and the combined data set
 - []
 - Combined data set ECPR and standard deviation are used to define the overall statistics of the method

Critical Power Correlation for OPTIMA2



Critical Power Correlation for OPTIMA2

- [

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Critical Power Correlation for OPTIMA2

Critical Power Correlation for OPTIMA2

- [

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Critical Power Correlation for OPTIMA2

- [

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Critical Power Correlation for OPTIMA2

- [

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Critical Power Correlation for OPTIMA2



Critical Power Correlation for OPTIMA2

- [

]

Critical Power Correlation for OPTIMA2

- Overall additive constant uncertainty is determined using the indirect method defined in EMF-2245PA

Critical Power Correlation for OPTIMA2

- OPTIMA2 with [] statistics

Parameter	Value
[
]

Critical Power Correlation for OPTIMA2

- OPTIMA2 with [] bounds

Parameter	Range
Pressure (psia)	[
Inlet subcooling (Btu/lbm)	
Inlet assembly mass flux (Mlbm/hr-ft ²)	
]
[
]

Critical Power Correlation for OPTIMA2

- OPTIMA2 with [] bounds

Parameter	Range		
[
]

Critical Power Correlation for OPTIMA2

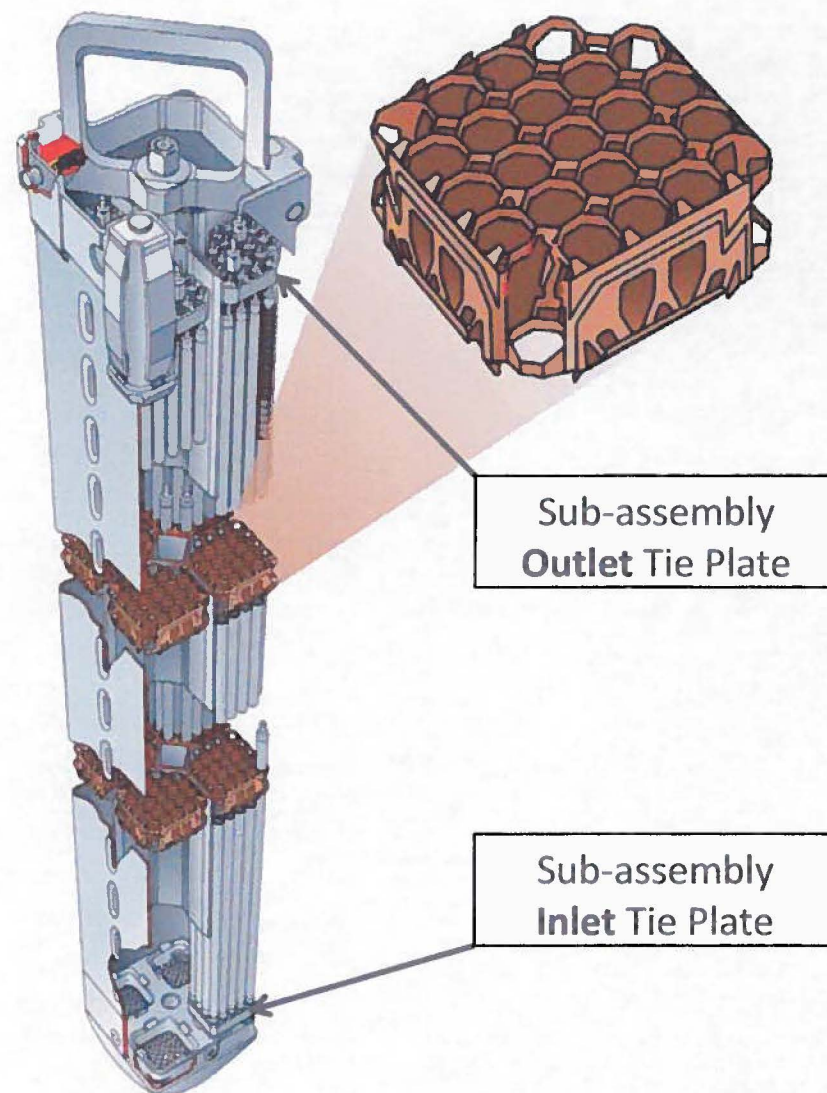
- Summary
 - Statistics show acceptable fit can be achieved for OPTIMA2 with []
 - Best-estimate additive constants have been determined []
 - []
 - Bounds of the [] correlation for application to OPTIMA2 conservatively set to the more limiting of the range of the approved [] correlation and the range of data in the OPTIMA2 critical power database

Critical Power Correlation for OPTIMA2

- Safety Limit MCPR for QCNPS and DNPS using SAFLIM3D
 - ANP-10307PA, “AREVA MCPR Safety Limit Methodology for Boiling Water Reactors”
 - [

]

Critical Power Correlation for OPTIMA2



Critical Power Correlation for OPTIMA2

- MICROBURN-B2 is used to []
 - Given core overall boundary conditions []
 - []
-]

Critical Power Correlation for OPTIMA2

- For each Monte Carlo trial [] perform MICROBURN-B2 []
 - Perturb system and core conditions and assembly radial and axial power profiles including uncertainties from channel bow
 - Randomly perturbed system uncertainties that are applicable to QCNPS and DNPS
 - e.g. feedwater flow, feedwater temperature, pressure
 - Core uncertainties determined from uncertainty in POWERPLEX predicted power and flows
 - e.g. radial bundle power, axial power, assembly flow
- []

Critical Power Correlation for OPTIMA2

- For each Monte Carlo trial [] perform MICROBURN-B2 [] (continued)

- []

]

Critical Power Correlation for OPTIMA2

- [

]

Critical Power Correlation for OPTIMA2

- [

]

Critical Power Correlation for OPTIMA2

- [

]

Critical Power Correlation for OPTIMA2

- [

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Critical Power Correlation for OPTIMA2

• [

]

Critical Power Correlation for OPTIMA2

- Summary

- [

]

May 19, 2014 Pre-Submittal Meeting Summary

- Key Points
 - Exelon will utilize an established transition process followed by industry
 - One License Amendment Request will be submitted for both DNPS and QCNPS
- Follow-up Issues
 - Finalize approach on channel bow and verify it will be submitted as part of the LAR as a plant specific method
 - Channel Bow evaluation will be performed using approved methodologies
 - The approach and results of the evaluation will be discussed in the LAR for plant specific application
 - This discussion is intended to support NRC review and resolution in the subsequent safety evaluation

May 19, 2014 Pre-Submittal Meeting Summary

- Follow-up Issues (continued)
 - Finalize approach to completing the Spent Fuel Pool (SFP) Criticality Safety Analysis (CSA) for DNPS and QCNPS (i.e., analysis for only one station and implementation under 50.59 at the other)
 - A separate LAR will be submitted to address SFP CSA for DNPS Units 2 and 3 only (submittal scheduled for October 2014)
 - QCNPS Units 1 and 2 criticality changes will be completed under 10 CFR 50.59 using the QCNPS rack insert application currently under review as a basis
 - DNPS SFP CSA analysis will follow the same methodology used in the QCNPS rack insert application currently under review
 - Status and schedule for release of the draft and final SRP revision for reactivity insertion accidents
 - Use of 230 cal/gram as the appropriate upper limit for coolability
 - LAR approach to be used depends on schedule for issuance of the revised SRP

May 19, 2014 Pre-Submittal Meeting Summary

- Follow-up Issues (continued)
 - Address any maneuvering restrictions associated with the new fuel and how those restrictions account for current Westinghouse fuel
 - Both Westinghouse fuel and ATRIUM 10XM fuel utilize barrier cladding
 - There will be no changes to Westinghouse maneuvering restrictions
 - Exelon intends to apply Westinghouse and AREVA specific fuel conditioning rules to Westinghouse and AREVA fuel respectively

Critical Power Correlation for OPTIMA2

- Follow-up Issues (continued)
 - Evaluate Westinghouse Methods for Thermal Conductivity Degradation (TCD) Issue
 - With transition to AREVA fuel, Westinghouse will continue to hold LOCA analysis of record for Westinghouse fuel loaded in the core with inputs from steady-state fuel rod performance analyses.
 - Westinghouse provided response to NRC request regarding evaluation of TCD using Westinghouse methods in letter LTR-NRC-12-18, dated February 17, 2012.
 - Westinghouse LOCA analyses for Dresden and Quad Cities use methods as discussed in letter LTR-NRC-12-18. TCD is accounted for in these analyses.

Fuel Transition LAR Schedule

- Fuel Transition Schedule (Consistent with 08/27/13 and 05/19/14 Meetings)
 - LAR Submittal: February 2015
 - Amendment Need Date: March 2016
 - QCNPS Unit 2 implementation: March 2016
 - DNPS Unit 3 implementation: November 2016
 - QCNPS Unit 1 implementation: March 2017
 - DNPS Unit 2 implementation: November 2017

Fuel Transition LAR Schedule

Concurrent Reviews

- Spent Fuel Pool (SFP) Criticality Safety Analysis (CSA) LAR
 - SFP CSA for ATRIUM 10XM will follow the same methodology used in the QCNPS rack insert application currently under review
 - QCNPS SFP CSA for ATRIUM 10XM will be completed under 10 CFR 50.59
 - DNPS SFP CSA for ATRIUM 10XM will be submitted as a LAR (SFP CSA LAR)
 - Submittal scheduled for October 2014
 - Fuel Transition LAR does not depend on NRC approval of SFP CSA LAR
 - SFP CSA LAR does not depend on NRC approval of Fuel Transition LAR
- Alternative Source Term (AST)
 - If accident dose increases by more than 10% as a result of fuel transition, AST analysis will require revision and results will be included in the fuel transition LAR
 - Preliminary evaluation has determined there will be no impact to source term design basis

QUESTIONS