

NRR-DMPSPeM Resource

From: Wiebe, Joel
Sent: Friday, January 11, 2019 11:24 AM
To: Steinman, Rebecca L:(GenCo-Nuc) (Rebecca.Steinman@exeloncorp.com)
Subject: Preliminary RAls Regasrding Byron Request to Use ATF LTAs

Preliminary RAls are sent to ensure the information request is clear and understandable.

Based on the Supplement Dated December 18, 2018 (ADAMS Accession No. ML18352B11), and the Audit Conducted on January 4, 2019, the NRC staff requires the following information to complete its review.

- 1) As discussed in the supplement dated December 18, 2018, the ADOPT™ Lead Test Rods (LTRs) may be limiting in certain transient conditions. Clarify why this is consistent with Byron TS 4.2.1 or provide appropriate proposed updates to the technical specifications, with justification.
- 2) GDC 10-Reactor Design, states: The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. The following information is needed to provide reasonable assurance of acceptable performance under normal operations, including the effects of anticipated operational occurrences.

Page 12 of 20 of Exelon's March 8, 2018 (ADAMS Accession No. ML18067A431), letter states that the current PAD code is capable of modeling ADOPT™ fuel pellets. The letter then subsequently discusses the material properties and fuel performance models that are being updated for coated cladding and uranium silicide fuel, resulting in a fuel performance code designated as PAD-ATF. Separately on page 14 of 20, there is a paragraph discussing the fuel performance of the ADOPT™ pellets that states that the ADOPT™ pellet has essentially the same heat capacity, thermal diffusivity, thermal expansion coefficient, and melting temperature as standard uranium dioxide.

Clarify these statements to state whether or not PAD-ATF is applicable to the ADOPT™ pellet or if the current PAD code (without the modifications for uranium silicide and the coated clad) is applicable to the ADOPT™ pellet. Include a list of which models (if using PAD-ATF) or inputs (if using PAD) are changed for ADOPT™ pellets versus standard UO2 pellets. State whether the known ADOPT™ material properties, including irradiated properties, have been considered in the LTR design and safety assessments.

Hearing Identifier: NRR_DMPS
Email Number: 754

Mail Envelope Properties (SN6PR0901MB2447A2EC160A108512DB18F58B850)

Subject: Preliminary RAls Regasrding Byron Request to Use ATF LTAs
Sent Date: 1/11/2019 11:23:41 AM
Received Date: 1/11/2019 11:23:00 AM
From: Wiebe, Joel

Created By: Joel.Wiebe@nrc.gov

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Tracking Status: None

Post Office: SN6PR0901MB2447.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	2275	1/11/2019 11:23:00 AM

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received: