

## PMNorthAnna3COLPEmails Resource

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**From:** Dozier, Tamsen  
**Sent:** Wednesday, May 11, 2011 5:25 PM  
**To:** Tony Banks  
**Subject:** North Anna Draft RAI HYD-01.docx  
**Attachments:** North Anna Draft RAI HYD-01.docx

Tony

Attached is a draft RAI that is in the final stages of concurrence. I am sending to make sure everyone is clear about the questions staff is asking. The final RAI will be issued in the very near future.

Tami

**Hearing Identifier:** NorthAnna3\_Public\_EX  
**Email Number:** 954

**Mail Envelope Properties** (Tamsen.Dozier@nrc.gov20110511172400)

**Subject:** North Anna Draft RAI HYD-01.docx  
**Sent Date:** 5/11/2011 5:24:53 PM  
**Received Date:** 5/11/2011 5:24:00 PM  
**From:** Dozier, Tamsen

**Created By:** Tamsen.Dozier@nrc.gov

**Recipients:**  
"Tony Banks" <tony.banks@dom.com>  
Tracking Status: None

**Post Office:**

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**U.S. Nuclear Regulatory Commission  
Supplemental Requests for Additional Information (RAIs)  
North Anna Nuclear Power Station, Unit 3  
Combined License Application as Revised to Reference the US-APWR**

<i>Item Number</i>	<i>Regulatory Basis</i>	<i>RAI Summary</i>	<i>Full Text (Supporting Information)</i>
<b>Hydrology (Water Quality)</b>			
HYD-01	10 CFR 51.71(d), ESRP 5.2.2  Environmental Quality Standards	<p>The staff has reviewed Calc. No. 25161-M-501 which provides details of the calculation for estimated tritium concentration in the NAPS discharge canal as a result of the operation of Unit 3. Concentration estimates in Lake Anna, the WHTF, and the discharge canal are of interest to the staff for evaluating water quality impacts of Unit 3 operation. Staff requests the following additional information related to Calc. No. 25161-M-501.</p> <ol style="list-style-type: none"> <li>1. Calculation of the concentration of tritium in the discharge canal due to the operation of Unit 3 makes the assumption that the Unit 3 discharge will be diluted with 100,000 gpm of Lake Anna water. Provide the basis for the use of 100,000 gpm given that <ul style="list-style-type: none"> <li>• Unit 3 may be in operation while Units 1 and 2 are not operating, and</li> <li>• Blowdown for Unit 3 may vary from zero (during periods when dry cooling alone is used) to 5565 gpm (in Energy Conservation mode).</li> </ul> </li> <li>2. The calculation of tritium concentration makes the assumption that tritium is completely mixed over the volumes of the WHTF and Lake Anna. Provide the basis for this assumption in the event that Units 1</li> </ol>	

<b>Item Number</b>	<b>Regulatory Basis</b>	<b>RAI Summary</b>	<b>Full Text (Supporting Information)</b>
		<p>and 2 are not operating and explain the effect on tritium concentrations in the discharge canal, the WHTF, and Lake Anna when this assumption is not valid.</p> <p>3. Calculation of the tritium concentration was completed using a long-term discharge from the dam of 300 cfs. Explain the impact on tritium concentrations in the discharge canal, the WHTF, and Lake Anna when discharge from the dam is 40 cfs or less for an extended period of time, such as during the 2002 drought.</p> <p>4. Calculation of the tritium concentration uses a steady-state model. Explain the impact on tritium concentrations of the temporal variability in inputs to (precipitation and streamflow) and outputs from (evaporation and dam discharge) the WHTF and Lake Anna. Explain whether the steady state analysis provides conservative estimates of tritium concentrations for evaluating the impact of Unit 3 operation on water quality.</p>	