

**From:** Alexander Adams  
**To:** William Vernetson  
**Date:** 5/18/06 9:04AM  
**Subject:** Clarification of RAI 16 and 17

Bill

During our conversation last week about the conversion RAIs, you asked for a clarification of RAI 16 and 17.

Section 13.1.3 -- The explanation of why the reactivity initiated event will not lead to unacceptable consequences can either be based on specific transient calculations or comparisons with results from other reactors; in conjunction with limits based on the SPERT tests. However, the direct use of results from SPERT as exemplified by Equations 13.4 and 13.5 may not be justified as the SPERT reactor differs considerably from the UFTR. Equation (13.5) implies SPERT-1 and UFTR have similar power peaking and thermal capacity for the fuel plates. Tmax of 1500 C estimated for SPERT-I (Table 13-5) came from NUREG/CR-2079. However the NUREG/CR report did not provide any basis for the estimate. On the other hand the Tmax for the Argonaut-UTR can be obtained from a plot of maximum measured temperatures versus total energy release (Fig. C-21) in SPERT test report IDO-16883. (This report has the exact same title as Ref. 18. in the UFTR conversion SAR. Could there be an error in the report number for Ref. 18?) UFTR may want to consider the merits of scaling Tmax basing on the analysis presented in NUREG/CR-2079. Also note that it is possible to directly calculate the factor b from the fuel specific heat, fuel temperature reactivity coefficient and neutron lifetime. Your answers to RAI 16 and 17 should provide a coherent and consistent explanation of the limits of the fuel to be used in the LEU core.

Al Adams

**CC:** Bet ; Deh3; diamond@bnl.gov; mmm

**Mail Envelope Properties** (446C70DC.741 : 8 : 35504)

**Subject:** Clarification of RAI 16 and 17  
**Creation Date:** 05/18/2006 9:04:28 AM  
**From:** Alexander Adams

**Created By:** AXA@nrc.gov

**Recipients**

bnl.gov  
 diamond CC (diamond@bnl.gov)

nrc.gov  
 OWGWPO02.HQGWDO01  
 DEH3 CC (Deh3)

nrc.gov  
 TWGWPO01.HQGWDO01  
 MMM CC (mmm)

nrc.gov  
 TWGWPO02.HQGWDO01  
 BET CC (Bet )

ufl.edu  
 vernet (William Vernetson)

**Post Office**

OWGWPO02.HQGWDO01  
 TWGWPO01.HQGWDO01  
 TWGWPO02.HQGWDO01

**Route**

bnl.gov  
 nrc.gov  
 nrc.gov  
 nrc.gov  
 ufl.edu

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	2115	05/18/2006 9:04:28 AM

**Options**

**Expiration Date:** None  
**Priority:** Standard  
**ReplyRequested:** No  
**Return Notification:** None

**Concealed Subject:** No

**Security:**

**Standard**