

April 30, 2003

Dr. Ned Sauthoff  
Princeton Plasmas Physics Laboratory  
Princeton, New Jersey

Dear Ned,

The burning plasma PAC held a teleconference on April 17, 2003 to respond to your charge (attached) "to provide advice to the US ITER Planning Officer on considerations for US levels of interest in the actual performance of the 85 ITER procurement packages." The purpose was not to comment now on individual procurement packages, but rather on the criteria to be applied later in assessing U.S. interest. You have presented to us seven criteria for comment (included in the charge). We have merged the third criterion with the fifth, and added one. Below we provide our final list of criteria, each with a metric and a priority rating, and in some cases a brief comment.

*1. US research positioning*

Priority: High or low (depending on linkage; see comment below)  
Metric: Extent to which activity positions the US for key science/technology roles in ITER  
Comment: The PAC recommends that the ITER project adopt a policy in which future research participation of an ITER party does *not* depend on the type (as opposed to the level) of contribution to the construction activity. However, if there is a link then the priority is high. If there is no official linkage, then the priority is low.

*2. ITER-value per dollar*

Priority: High  
Metric:  $\text{ITER value}/(\text{US cost of full scope of R\&D} + \text{design} + \text{fab} + \text{contingency})$   
Comment: The contingency should incorporate the degree of risk.

*3. Relative strength or leverage of US contribution to ITER*

Priority: High/Medium  
Comment: An example of high relative strength may be divertor cassettes (in which the US already invested substantial R & D); an example of high leverage may be superconducting strand (for which the world supply is limited).

*4. Contributions to US fusion program*

Priority: Medium  
Metric: Enhancement of US capability for activity both in ITER and outside ITER

*5. Enhancement of fusion-relevant capability of US industry*

Priority: Medium/Low  
Metric: Extent activity increases industrial capability in fusion areas

Comment: Industrial participation in ITER operation is potentially of greater value than hardware construction.

*6. US industrial opportunity*

Priority: Medium/Low

Metric: Extent activity provides opportunity to US industry

*7. Development of US fusion workforce*

Priority: Low

Metric: Extent to which activity builds a suitable US fusion science and technology work force.

Sincerely,

Stewart Prager  
on behalf of the Burning Plasma PAC

Cc: M. Roberts  
W. Marton  
J. Willis  
N.A. Davies  
A. Hassam  
D. Baldwin  
C. Baker  
R. Goldston  
J. Lindl  
G. Wurden  
PAC members

Burning Plasma Program Advisory Committee  
DRAFT Charge #2  
4/15/03

The BPPAC is requested to provide advice to the US ITER Planning Officer on considerations for US levels of interest in the actual performance of the 85 ITER procurement packages. This advice should extend beyond mere programmatic interest in the area of the procurement packages, which was the focus of the previous BPPAC report. For example, it should address considerations such as US research-positioning, “ITER value” per dollar, fusion community benefits, etc. This advice will serve as another input to US preparations for ITER negotiations.

The BPPAC is not being asked at this time to rate the 85 procurement packages by these considerations.

The BPPAC should provide the requested advice by April 30. The advice should include at minimum an update of the following table.

**DRAFT ITER Procurement Considerations**

	<b>Consideration / Criterion</b>	<b>“Metric”</b>	<b>Commentary</b>
1	US research-positioning (Need to determine whether substance of contribution makes a difference to the operations-phase roles)	extent to which activity positions the US for key science/technology roles in the ITER operations/research phase (beyond the mere size of the total US contribution)	BPPAC comment on importance, applicability, etc.
2	ITER-value per dollar	ITER_value / (US cost of full scope of R&D+Design+Fabrication, including contingency)	BPPAC comment on importance, applicability, etc.
3	Fusion community-involvement	(cost of US R&D+Design) / (cost of US R&D+Design+fabrication)	BPPAC comment on importance, applicability, etc.
4	Development of US fusion workforce	extent to which activity builds a suitable US fusion science and technology workforce (can this be quantified?)	BPPAC comment on importance, applicability, etc.
5	Spin-off to the US fusion program	enhancement of US capability for US fusion programs outside ITER	BPPAC comment on importance, applicability, etc.
6	Enhancement of fusion-relevant capability of US industry	extent activity increases US industrial capability in fusion areas	BPPAC comment on importance, applicability, etc.
7	US industrial opportunity	extent activity provides opportunity to US industry (Could be either a US-guarantee to the US-fraction of ITER or an access-fee to international competition for greater ITER scope)	BPPAC comment on importance, applicability, etc.

