

U.S. Fusion Energy Sciences Program

Fusion Program Leaders FY 2009 Budget Conference Call



www.ofes.fusion.doe.gov

February 5, 2008
4:00 p.m.

Excellent Science in Support of Attractive Energy

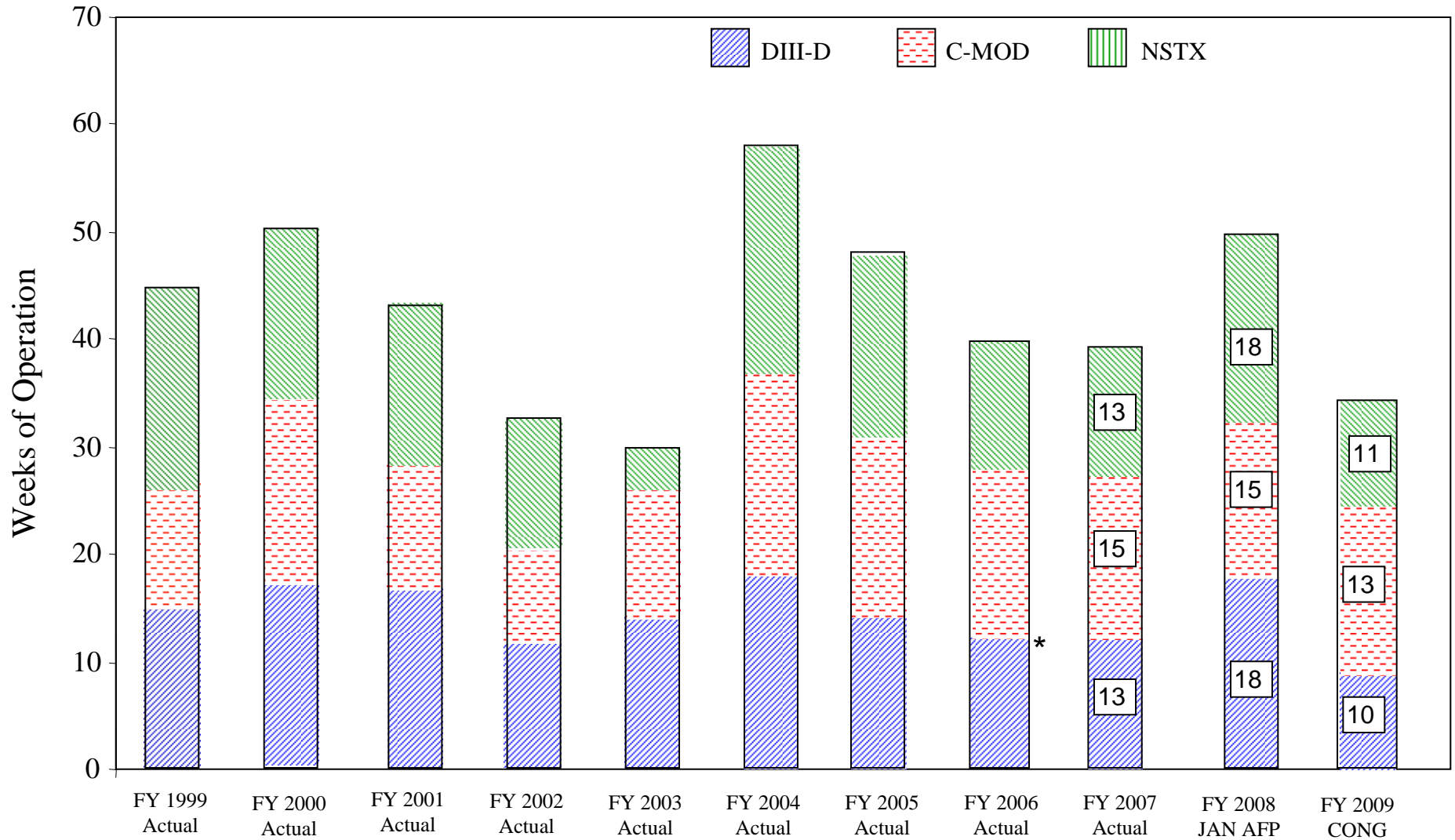
FY2009: Fusion Program Request Overview

- ITER budget recovers to full funding
- Major facilities operations and research reduced
 - Use large increases in FY 2008 to optimize utilization across two years
- Some facility changes
 - SSPX, QPS terminated
 - NCSX MIE continues, assuming successful rebaselining
- Modest new initiatives
 - Fusion Simulation Project started
 - Strategic Planning activity for long-term initiatives
 - Significant increase for joint program in HEDLP

FY 2009 Fusion Energy Sciences Congressional Budget Request Summary

	(\$ Millions)		
	FY 2007	FY 2008	FY 2009
	<u>Actual</u>	<u>Jan AFP</u>	<u>Request</u>
Science	144.6	163.9	168.4
Facility Operations	146.3	100.8	301.9
Enabling R&D	<u>20.8</u>	<u>21.8</u>	<u>22.7</u>
OFES Total	311.7	286.5	493.1
DIII-D	56.7	61.7	58.1
C-Mod	22.3	25.1	23.2
NSTX	33.5	38.8	35.4
NCSX MIE + Research	16.6	16.6	20.3
ITER TPC	60.0	10.6	214.5
Non-ITER	251.7	275.9	278.6

Major Fusion Facilities Operating Times



*The 12 weeks of runtime in FY 2006 for DIII-D includes 5 weeks of run-time funded from the recovery of prior year balances.

FY2009: ITER Recovery Assumes Full Funding

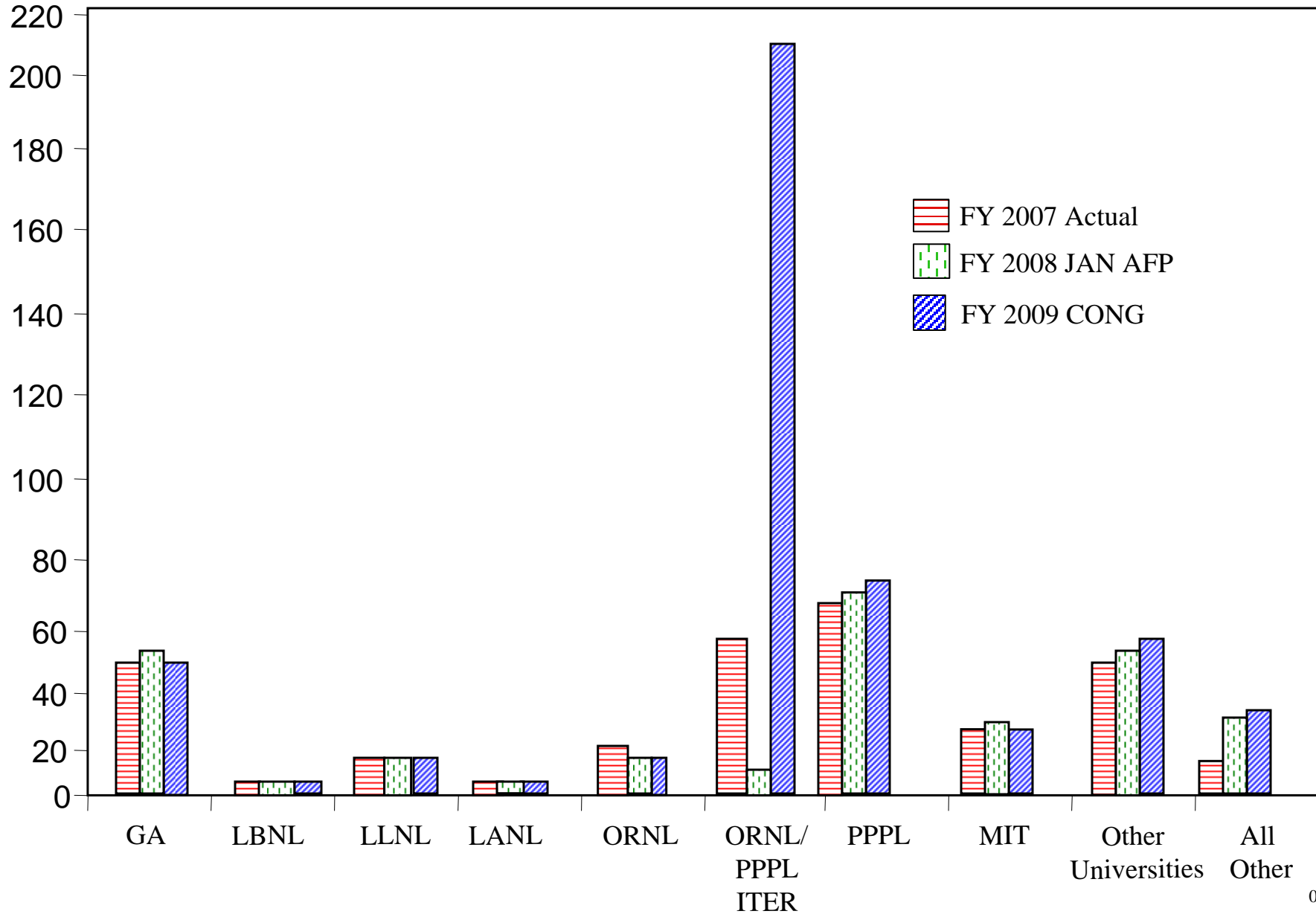
- **FY 2008: U.S. ITER Project in survival mode**
 - Maintain minimal core team
 - Defer/curtail: cash contributions; design; R&D; hardware procurements
- **FY 2009: Full funding requested to fulfill commitments**
 - Pay cash contributions for FY2008 and FY2009
 - Recover matrixed support FTE's
 - Resume design, R&D, and procurement activities
- **ITER cost and schedule under assessment**
 - CD-1 cost range (\$1.4 – 2.2B) approved January 2008 (CD-1 memo dated 1/25/08)
 - CD-2 (Performance Baseline) in FY2009 – 2010
- **Test Blanket Module decision due Spring 2008**
 - No ITER Project funding until construction of ITER is assured

Fusion Energy Sciences Budget by Institution

<u>Institution</u>	(\$ Millions)		
	<u>FY 2007</u> <u>Actual</u>	<u>FY 2008</u> <u>Jan AFP</u>	<u>FY 2009</u> <u>CONG</u>
General Atomics	50.7	55.3	52.0
Lawrence Berkeley National Laboratory	4.7	4.8	4.8
Lawrence Livermore National Laboratory	12.6	12.6	12.4
Los Alamos National Laboratory	3.1	2.9	2.8
Oak Ridge National Laboratory	20.4	18.4	17.1
ORNL/PPPL-ITER	60.0	10.6	214.5
Princeton Plasma Physics Laboratory	69.1	72.0	73.6
Massachusetts Institute of Technology	24.6	27.5	25.7
Other Universities	52.2	55.7	56.6
All Other	<u>14.3</u>	<u>26.7</u>	<u>33.6</u>
Total	311.7	286.5	493.1

Fusion Energy Sciences Funding by Institution

(\$ in Millions)



Fusion Energy Sciences FY 2009 Congressional Budget Request Detail

(\$ in thousands)							
	FY 2007	FY 2008	FY 2009		FY 2007	FY 2008	FY 2009
Science		Jan AFP	Cong	Enabling R&D		Jan AFP	Cong
DIII-D Research	24,531	27,060	26,249	Plasma Technologies (MFE)	13,531	13,391	13,351
C-MOD Research	8,267	9,600	9,030	Advanced Design (MFE)	2,544	2,600	4,573
International Collaborations	4,710	4,982	4,900	Materials Research (MFE)	4,679	5,800	4,791
Diagnostics	3,768	4,141	3,912				
Other	4,640	7,087	7,028	Total Enabling R&D	20,754	21,791	22,715
SBIR/STTR	0	7,417	7,282				
Subtotal Tokamaks	45,916	60,287	58,401	Total Fusion Energy Sciences	311,664	286,548	493,050
NSTX Research	14,608	16,730	16,163				
Experimental Plasma Research	16,476	17,050	13,288				
HEDLP	15,459	15,942	24,636	Recap			
MST Research	6,760	6,910	6,915	DIII-D	56,669	61,660	58,060
NCSX Research	775	713	692	Alcator C-Mod	22,260	25,110	23,207
Subtotal Alternative Concepts	54,078	57,345	61,694	NSTX	33,525	38,830	35,437
Theory	23,732	24,486	24,283				
SciDAC	6,540	7,138	7,212	ITER Total MIE TPC (=TEC + OPC)	60,000	10,626	214,500
Fusion Simulation Project	0	0	1,976	NCSX MIE + Research	16,597	16,613	20,252
General Plasma Science	14,306	14,648	14,869				
Total Science	144,572	163,904	168,435				
Facility Operations							
DIII-D	32,138	34,600	31,811				
Alcator C-Mod	13,993	15,510	14,177				
NSTX	18,917	22,100	19,274				
<i>Facility Ops times in weeks</i>	<i>13/15/13</i>	<i>18/15/18</i>	<i>10/13/11</i>				
NCSX MIE	15,822	15,900	19,560				
GPP/ GPE/ Other	5,468	2,117	2,578				
ITER MIE OPC	18,000	10,626	6,000				
ITER MIE TEC	42,000	0	208,500				
Total Facility Operations	146,338	100,853	301,900				

FY2009: Fusion Program Summary

- ITER funding back on track
 - CD-2 anticipated to define future profile
- Major facility research and operations constrained
 - Moderated by FY2008 increases
- Several modest starts for new initiatives
 - FSP
 - Planning activities
 - HEDLP joint program with NNSA
- Mainly status quo budget
 - No major shifts, pending strategic planning developments