

SC 2005 Workshop on Facilities & Infrastructure

Presented to
DOE Office of Science

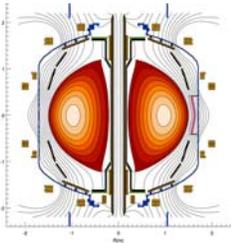
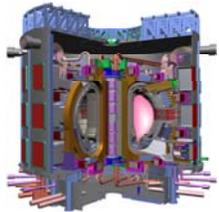
by

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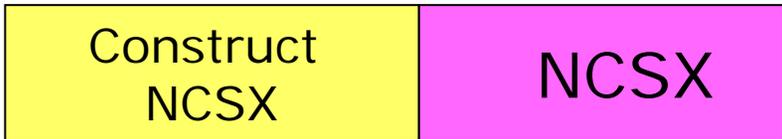
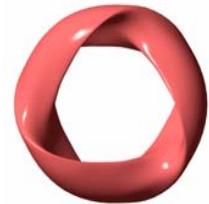
June 8, 2005



Domestic Innovation Positions the U.S. to be Competitive in Fusion Energy

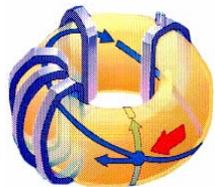


MAST



LHD

W7-X



JET, JT-60U, KSTAR, EAST, JT-60SC?

Construct Next Step Advanced Facility at PPPL: ST, CS, Tok or RFP

(As indicated in DOE-SC 20-Year Strategic Plan)

2005

2010

2015

2020

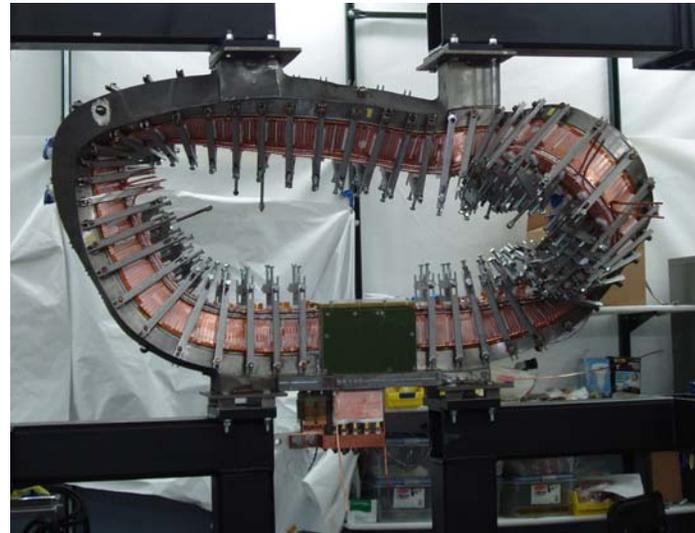
NCSX is being Manufactured Now in Industry and at PPPL. Operation begins in 2009.

Risk mitigation:
Multiple R&D contracts,
fixed-price construction.

Coil winding form
First casting completed,
being machined.



Vacuum vessel
All forming dies completed.



Coil-winding facility
Winding of twisted racetrack
practice coil completed.
A key risk-mitigation strategy.

PPPL Facilities Support the Lab's Mission Cost-effectively

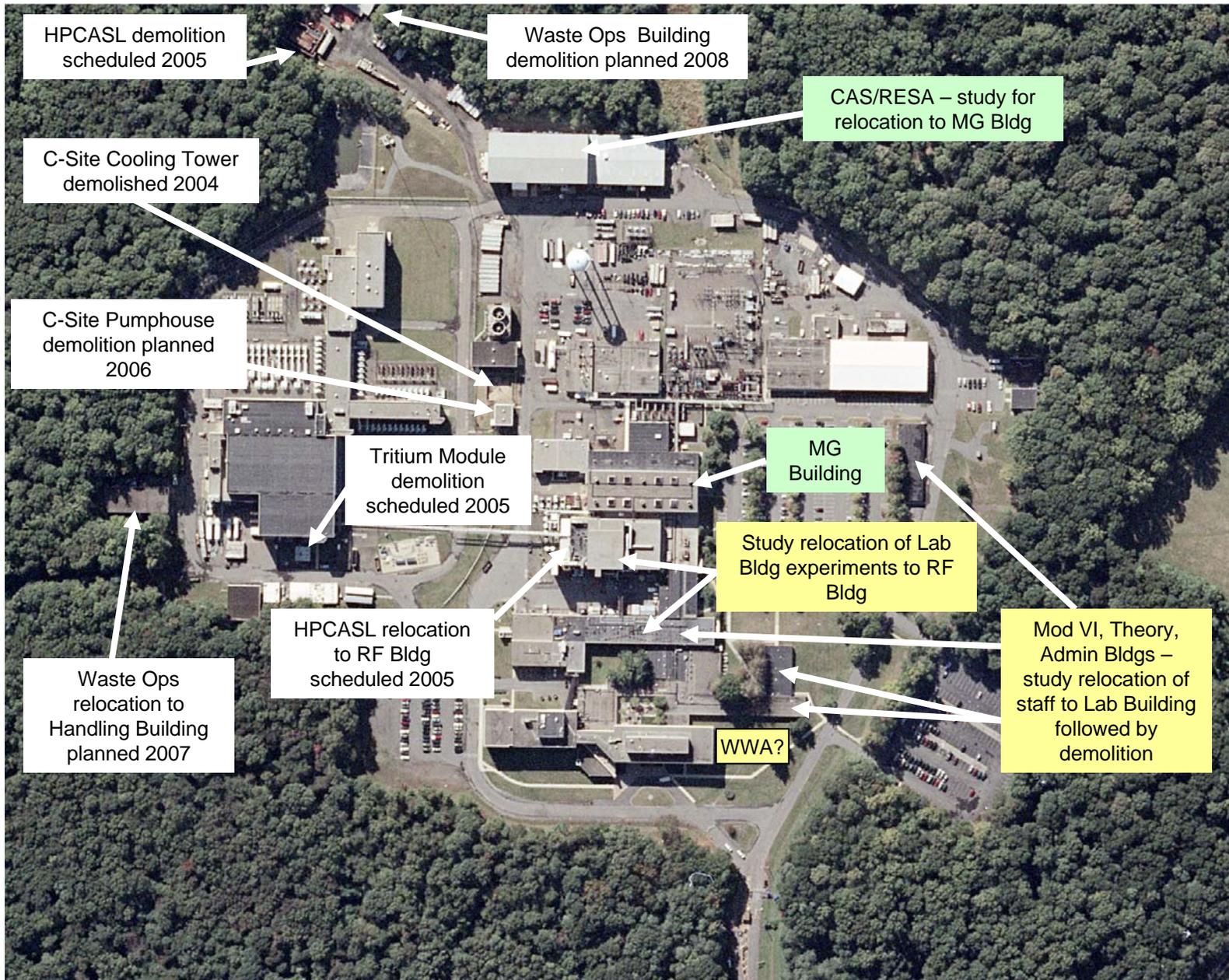
Mission Support

- Substantial infrastructure improvements are planned to buildings, shops, storage areas and offices in proximity to the core C-Site facilities to modernize them in support of experimental projects.
- We can support US ITER Project Office with (plan A) or without (plan B) a new building.

Cost Reduction

- Over recent years, the Laboratory has consolidated staff and functions and disposed of older outlying buildings. This has enabled a reduction in expenditures and we will continue to pursue this strategy.
- We will revisit energy efficiency studies in an effort to reduce Laboratory overhead expenses, due to increasing unit costs for energy (electric/gas).

Improving Efficiency by Reducing our Footprint



Facilities, Infrastructure and Maintenance Resource Needs and Alternatives

- PPPL is working to meet the 2% Maintenance Investment Index (MII) Goal in FY06. MII remains at 2% beyond that period.
- This is especially painful under tight budgets, *e.g.*, equivalent of 5 professional staff in FY06 in trade for additional maintenance.
- Resource needs identified in the May 2005 Ten-Year Site Plan
- Alternatives (if DOE programmatic funds are at or below Plan B)
 - The unique nature of D-Site design and construction is not suited to the industry standard MII. 1.5% for D-Site facilities results in reduction of cost by \$450k in FY06.
 - Aggressively remove buildings from service.
 - Consolidate drastically personnel, labs, and shops.
 - Focus on infrastructure safety at the expense of capability.