Introduction to the Run II Plan

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Department of Energy Review of the
Tevatron Run II Luminosity Upgrades
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Scope of Presentations

- We will present a plan, with "design" and "base" luminosity projections.
  - **We believe this plan maximizes luminosity in the pre-LHC era based on available technologies and resources.**
  - **We believe there is a reasonable probability of meeting the design projection.**
  - **We are confident there is a high probability of meeting/exceeding the base projection.**
- The plan is created and presented utilizing project tools.
- However, this is not a Construction Project.
  - Multiple, parallel, R&D projects with decision points that will force evolution of the scope of work
  - Accelerator operations proceeding in parallel with upgrades

Scope of Presentations (2)

- Plan for Recycler integration is a major uncertainty in the current process.
  - Near term focus on improvements that will allow us to bring into operation, or determine what it will take
  - Major evaluation this fall is contained within the plan
  - Expect to modify the plan and re-release in December
- The plan itself, and in particular the luminosity projections, are based on successful integration of the Recycler.
- FY04-05 luminosity performance is largely independent of Recycler status.

Projected luminosity through FY09:

Design = 8.6 fb^{-1}

Base = 4.4 fb^{-1}

What do we mean by Design and Base?

- Design projection: "…defined as using reasonable performance parameters and requiring reasonable improvements over past performance, but as not including scheduling contingency"
  - performance margin is incorporated into designs but not fully accounted for in the design projection.
- Base projection: "…using conservative parameters and including schedule contingency"

Translations:

The "base projection" in the current plan corresponds approximately in confidence level to the "base" as used in communications of last fall/winter.

The "design projection" is a higher confidence level projection than the "stretch" projections of last fall/winter.

What has changed since last fall?

- Organization and Management
  - New Division Head in place
  - A very strong project team assembled within BD
  - Significant integration of effort from outside BD
- Projections
  - Last October we projected (through FY08):

    Base = 6.5 fb^{-1} Stretch = 11.0 fb^{-1}
  - Why the difference?
    - Bottom-up vs. Top-down planning and projections
    - Extensive modeling of Tevatron and cooling systems
    - Operations model based on current experience
    - Recycler struggles since January shutdown
    - No recycling
    - Fail-safe Recycler integration
    - Schedule contingency (base)
- Current projection is lower; it's also more realistic

What we would like out of this Review

We hope the committee will concur, and reflect in your report, our view that:

- The plan presented is a sound, well-motivated, approach to maximizing luminosity delivered over the period FY2004-2009, consistent with available resources.
- There is a high probability that the base projection will be met or exceeded.
- There is a reasonable probability of the design projection being achieved assuming successful Recycler integration.