Conventional Construction for the NOvA Far Detector

S. Dixon
All Experimenters Meeting

December 7, 2009
Overview

• Two Construction Packages
  – Site Prep Package
  – Far Detector Building

• Ash River, Minnesota
  – ~30 miles south of International Falls
  – Last East-West Road in U.S.

• Cooperative Agreement
  – Between DOE and the University of Minnesota
Site

Artist Rendering of Completed Construction
Site Preparation Package

- Site Preparation Package
  - Includes:
    - Wetland Mitigation
    - Construction of ~3.5 miles of all-weather access road
    - Excavation of Rock at Far Detector Building Site
    - Electric and Data/Communication Utilities
  - Permits/Authorizations:
    - Environmental Assessment Worksheet – Final in December 2007
    - Validated Section 404 Permit – December 2008
    - Wetland Credits Purchased – January 2009
    - General Stormwater Permit – May 2009
    - Notice To Proceed – May 2009
    - University of Minnesota Building Permit – June 2009

(University is the Authority Having Jurisdiction)
Cultural Resources

August 2008
Ash River Site

**Ash River Site**

- **Project Site Property**
- **NOvA Proposed Site - Ash River**
- **Electric/Data Comm**
- **~19 acres Access Road**
- **~89 acres**

**June 2009**
Brightstar Road

April 2006
Brightstar Road

August 2009
Brightstar Road

2006

October 2009
Far Detector Building

- **WBS 2.1.2 – Far Detector Building**
  - Includes:
    - Below Grade Detector Enclosure/Assembly Area Concrete
    - At-Grade Service Building (Loading Dock, Offices, Mechanical Spaces)
    - Scintillator Unloading Area
    - Site Construction
Far Detector Building
Far Detector Building

Cosmic Ray Shielding
Equivalent to 9.84 feet of earth shielding

Detector shown in purple

View From Access Walkway
Barite
Barite
Barite
Barite
Far Detector Building

November 2009
Status

• March 2009
  – Issued Documents for Proposal

• April 2009
  – Received six (6) proposals;
  – Interviewed two (2) firms;

• May 2009
  – Groundbreaking
  – Issued Notice to Proceed for Site Prep Package
  – Received National Pollution Discharge Elimination System (NPDES) Permit

• June 2009
  – Received Building Permit for Site Prep Package
  – Began work on Site Prep Package
Far Detector Building

September 2005

October 2009
Far Detector Building

August 2009
Far Detector Building
Far Detector Building

October 2009
Far Detector Building

October 2009
Far Detector Building

October 2009
Far Detector Building

November 2009
Far Detector Building

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Far Detector Building

November 2009
What’s Next

- Rock Excavation through Jan/Feb 2010
- Concrete Starts in April 2010
- Limited Occupancy in Fall of 2010
- Completion in Spring 2011

- Photo Site:
  - http://novaproject.shutterfly.com/

- Webcam:
  - http://www.ibeamsystems.com/private/nova/