Cooperative Agreement

Status & Plans

John Cooper

June 5, 2007 Breakout Talk

Some History

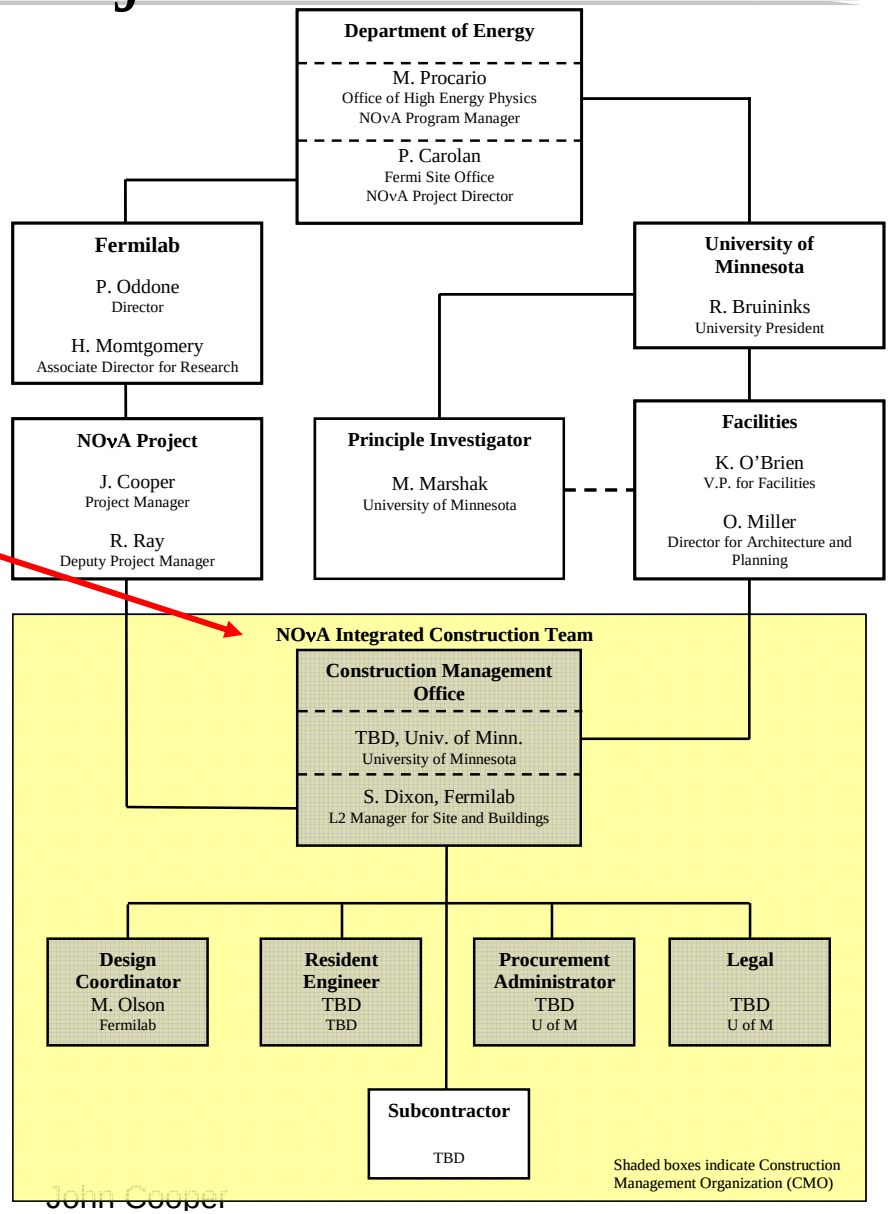
- December 1, 2006: University of Minnesota submitted an unsolicited Cooperative Agreement proposal
  - Parts: 1) Land &Building, 2) Operations of Building, 3) Detector Construction, 4) Faculty Research (required component)
- January 31, 2007 : DOE finished an outside review of the proposal.
- April 16, 2007: Determination of Noncompetitive Financial Award (DNFA) signed by R. Orbach.
- May 9-11, 2007: Letters from DOE HEP to U of Minnesota
  - on DNFA and CD-1 approval of project
  - DOE Acquisition Strategy describes the CA funding path for the NOvA building
- ~May 15, 2007: Scope of Work outlined:
  - 1) Land &Building, 2) Operations of Building, 3) Faculty Research
  - Detector Construction to remain on MIE.
- June 6, 2007 (?): CA procurement package to DOE Chicago Office
  - On Chicago list for a "Business Case Review".
  - Negotiations with U of Minnessota to follow
- ~ August 1, 2007 (?): Actual Award
  - First year funding at $ 1 M level
  - Will use to advance building design from 30% to 100%,
    - Takes ~ $ 3 M total and ~ 8-9 months

Advantages of U of Minnesota as partner

- Local connections
  - University has a construction arm involved in ~ $500M of building at any one time
    - Vice President for Facilities
- University has unusual powers:
  - Same as a municipality for zoning, building permits, certificates of occupancy
    - They have a Building Code Office
      - Steve Dixon and Marvin Marshak have talked with them
  - Can take the role of “Responsible Government Unit” in Environmental Assessment actions in Minnesota
    - Takes action by the Regents
    - See EA & EAW breakout talk
  - Logical submitter of Wetlands Permit for Access Road

How do the U of Minnesota and the NOvA Project Office interact?

- The procurement package will stipulate that U of Minnesota and Fermilab NOvA Project have an MOU on their individual roles
- Have discussed principles:
  - Integrated Construction Team
  - Use UM procurement rules, but consensus with Project on larger questions, e.g. choice of AE design firm, choice of major contractors
  - UM will report monthly to Project Office
  - Earned Value computation can be done
- A first MOU exists



Memorandum of Understanding

between
University of Minnesota
and
Fermi National Accelerator Laboratory

for
Transition Activities related to the NOvA Far Detector Laboratory Preliminary Site Preparation and Detector Hall Construction

January 1, 2007

I. Preamble

This Memorandum of Understanding (MOU) is made between the University of Minnesota (UM) and Fermi National Accelerator Laboratory NOvA Project Management (Fermilab) concerning NOvA Far Detector Laboratory Preliminary Site Preparation and Detector Hall Construction activities.

Progress on the site preparation and Detector Hall design during the last two years has been made by Fermilab, both with its own staff efforts and those of external consultants This MOU envisions that the UM will assume responsibility for preparing the site and constructing the NOvA Far Detector Laboratory near Ash River, St. Louis County, Minnesota, at some future date under the terms of a Cooperative Agreement (CA) between UM and the U.S. Department of Energy. UM has submitted an Unsolicited Proposal for such an agreement, but there is no certainty that this CA will exist or that UM will assume any such responsibility. This MOU covers a transition period between submission of the CA proposal and initiation of a DOE CA.

This document does not constitute a legal contractual obligation on the part of either of the parties. It reflects an arrangement that is currently satisfactory to the parties involved.

II. Responsibilities

1. Activities

a. The University of Minnesota

UM will use its best efforts to transition the NOvA Far Detector Laboratory Site Preparation and Laboratory Construction to a University Construction Project under the anticipated CA with Site Preparation expected to commence in 2007 or 2008 and Laboratory Construction expected to commence in Spring 2008.

Anticipated UM activities during the transition period from now to the start of the CA include: facilitating ongoing design work funded by Fermilab so it will comply with UM standards, participating in the environmental review process based on the draft Environmental Assessment Worksheet (EAW) prepared by consultants funded by Fermilab, facilitating design review by UM building code officials, and working to obtain title, leaseholds and easements required for the project and building public support for the NOvA Project in the vicinity of the Far Detector Laboratory.

b. Fermilab

During the CA transition process, Fermilab will continue to fund ongoing environmental work leading to a Minnesota Environmental Assessment Worksheet, a building design at the 30% completion level leading to a design appropriate for a Department of Energy Critical Decision 2 review, and a site work design at the 100% level appropriate for a Department of Energy Critical Decision 3a review. The DOE reviews are expected to occur in the spring of 2007.

c. Joint Activity

The specific activity described in this MOU is that the UM will retain the services of a project manager and a consulting engineer or engineering firm as the first step in forming a project management and design staff which would likely continue during the CA. The UM agrees to involve Fermilab in the process of interviewing candidates and making a final selection.

It is anticipated that the project manager and consulting engineer or engineering firm will be integrated into ongoing NOvA Project meetings and that Steve Dixon from the NOvA Project will be integrated into UM meetings related to the project.

2. Personnel

Key UM personnel involved in these activities include Marvin L. Marshak and other staff from the School of Physics and Astronomy; Michael Perkins, Orlyn Miller and other staff in the Office of Capital Planning and Construction Management; Sue Weinberg and Tom Yang in the Real Estate Office, and Ken Larson and others in the Office of the General Counsel. No effort by UM staff is funded through this MOU.

Key Fermilab personnel involved in these activities are John Cooper, Fermilab NOvA Project Manager, and Steve Dixon, Fermilab NOvA Level 2 manager for the NOvA Site and Building task. Other Fermilab staff from the Fermilab Facility Engineering Services Section and from the Fermilab Particle Physics Division NOvA Project Office will participate.

3. Deliverables

UM will provide monthly progress reports to Fermilab NOvA Project Management beginning with January 2007.

4. Institutional Contribution of Services and Equipment

UM will provide effort and related institutional support as described above.

5. Fermilab Resources Required

Effort and related support as described above.

III. Costs, Schedule and Reporting

1. Cost Estimate

Fermilab will provide funds to UM School of Physics and Astronomy for:

Consulting engineers to initiate UM Project Management	$70,000
Ancillary UM expenses for required fees, reproduction, publication, travel, and equipment rental	$ 5,000
Total	$75,000

Additional costs beyond this amount during the transition period to a CA would require an amendment to this MOU.

2. Schedule

Work will begin January 1, 2007 and continue until the transition to the CA is complete or until the funds are consumed or until either UM or Fermilab decide to terminate this MOU with notice to the other party.

3. Cost and Progress Reporting

UM will invoice Fermilab monthly for all NOvA-related expenditures and labor charges and will report associated technical progress in each item of work according to the Work Breakdown Structure (WBS) on a monthly basis through Steve Dixon (NOvA Level 2 Manager for Site and Buildings) to the NOvA Project Manager. Monthly progress reports to NOvA management should include details of work carried out and current status as required for the NOvA Monthly Report.

IV. Other Considerations

1. Safety and Engineering Practices

UM will apply to this project all policies and procedures that it regularly utilizes for other capital projects funded by UM or by the State of Minnesota.

2. Equipment Ownership

Equipment purchases under this MOU are not foreseen. However, any items purchased wholly with funds provided by Fermilab remain property of Fermilab.

V. Approval

Marvin L. Marshak, University of Minnesota, School of Physics and Astronomy

Allen Goldman, University of Minnesota, Head, School of Physics and Astronomy

Michael Perkins, University of Minnesota, Director of Capital Planning and Construction Management

John Cooper, Fermilab, NOvA Project Manager

James Strait, Fermilab, Head, Particle Physics Division

Hugh Montgomery, Fermilab, Associate Director for Research

Sue Marshall, Grants and Contracts Manager
Office of Sponsored Projects Administration
University of Minnesota

Succeeded on first episode of “consensus”

- Project provided R&D funds via the MOU on the previous page
- University solicited bids for a “Project Manager” firm
  - Intent is that this firm would continue into the CA phase
    - Firms understand that continuation depends on DOE approval of project
  - 5 bids received, Steve Dixon (NOvA L2 Manager for Site and Building) saw all five packages, provided his ranking to the University.
- Short list to interview 2 firms
  - Steve Dixon agreed with the short list & reported this to NOvA Project Office
  - Steve went to Minneapolis to participate in the interviews on April 30
  - John Cooper and Ron Ray saw presentation documents after the interviews
  - Steve communicated his final scoring of the two firms
- University selected the firm that Steve rated highest, no controversy
  - Clearly have not exercised the system if we disagree
- University is now negotiating with the selected firm.
  - Management fee

Risks of Cooperative Agreement

- Some University officials “skittish” about CA funding from DOE over the long term
- This may cloud negotiations
  - e.g. contingency above and beyond our estimates to make sure U of Minn has funds to fill in a hole at Ash River if DOE does not continue?
  - Or maybe some award language can avoid this
- Clearly, any left over contingency from one phase would just be applied to the next phase
  - e.g. contingency to fill hole becomes budget to pour concrete walls.
  - DOE OHEP says we can adjust the CA amounts each FY
  - But this could have an impact on the funding profile
    - If require more in CA in a particular year, leaves less for the detector and accelerator
    - Building is the critical path, so we have to be prepared to deal with this
    - There is some float in the schedule on building completion
    - We start Detector procurements slowly, so there is flexibility there
    - Accelerator parts are also critical path, so the sum of Accelerator & CA can’t exceed total. Already squeezed the Accelerator part by 1.5 M$ in FY08 to advance the building schedule so Accelerator & Detector schedules match

CA in Operations phase following Beneficial Occupancy

- This is off-project
  - But we do need operations of the building
  - Maintenance, plowing, …
- Similar organization to construction phase
  - DOE HEP wants NOvA Project Office to oversee this part of CA while the Project exists
  - Without Facilities VP, so a little simpler

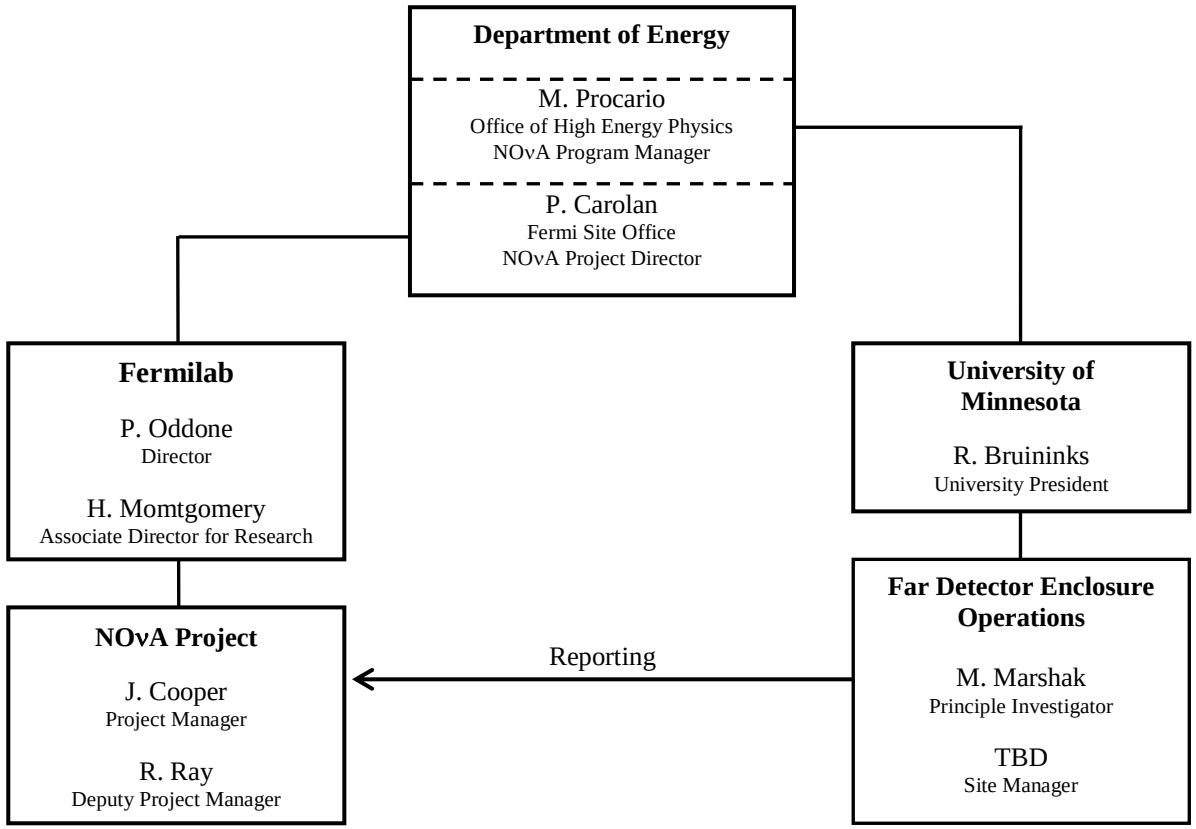


Figure 4.2 Organization chart for operation of the Far Detector Enclosure during the life of the NOvA Project.

Next Steps

- Need the Cooperative Agreement negotiations to start and finish
- Need to write the overarching MOU and get all levels at U of Minnesota and Fermilab to sign off.
- Need first funds to the University