



Review Committee

for the

NuMi Off-Axis Neutrino Appearance ($\text{NO}_\nu \text{A}$) Experiment

at the

Fermi National Accelerator Laboratory

July 21-23, 2009

Daniel R. Lehman

Review Committee Chair

Office of Science, U.S. Department of Energy

<http://www.science.doe.gov/opa/>



DOE EXECUTIVE SESSION AGENDA

Tuesday, July 21, 2009—Comitium, Wilson Hall

8:00 a.m.	DOE Executive Session	D. Lehman
8:15 a.m.	SC Perspective	
8:30 a.m.	Site Office Perspective	P. Carolan
8:45 a.m.	Questions/Discussion	D. Lehman
9:00 a.m.	Adjourn	



Review Committee Participants

Daniel R. Lehman, DOE, Chairperson

SC1

Accelerator and Beamlines
(WBS 1/2.0)

- * Graeme Murdoch, ORNL
- Fulvia Pilat, BNL

SC2

Sites and Buildings
(WBS 1/2.1)

- * Jess Albino, SLAC
- Ove Dyling, BNL

SC3

**Commodities: PVC Extrusions/
Fiber/Scintillator**
(WBS 1/2.2, 1/2.3, 1/2.4)

- * Bill Louis, LANL
- Kevin McFarland, U. of Rochester

SC4

PVC Module and Production
(WBS 1/2.5)

- * Dick Loveless, U. of Wisconsin
- Steve Kane, BNL
- Charlie Pearson, BNL

SC5

Electronics and Data Acquisition
(WBS 1/2.6, 1/2.7)

- * Rick Van Berg, Penn
- Paul O'Connor, BNL

SC6

Near/Far Detector Assembly
(WBS 1/2.8, 1/2.9)

- * Bill Wisniewski, SLAC
- Richard Boyce, SLAC

SC7

**Environment, Safety
and Health**

- * Steve Trotter, ORNL

SC8

**Cost, Schedule
and Funding**

- * Tom Fornek, SLAC
- Kurt Fisher, DOE/SC

SC9

Management
(WBS 2.10)

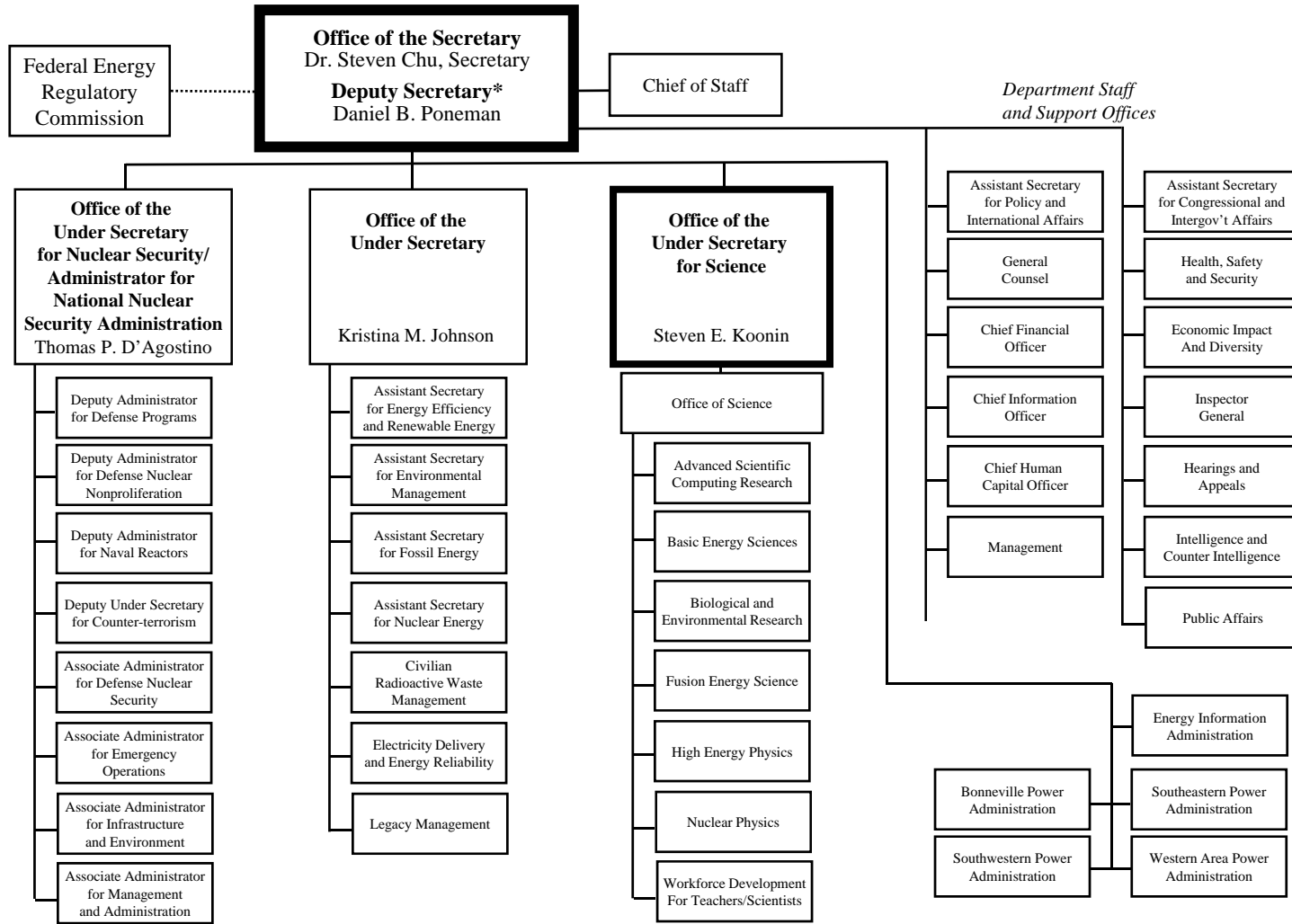
- * Derrick Mancini, ANL
- Howard Gordon, BNL
- Kathy Johnescu, DOE/BSO

Observers

- Dennis Kovar, DOE/SC
- Ted Lavine, DOE/SC
- Mike Procaro, DOE/SC
- Eli Rosenberg, DOE/SC
- Pepin Carolan, DOE/FSO
- Steve Webster, DOE/FSO
- Gary Brown, DOE/SC
- Brian Huizenga, DOE/OECM

LEGEND

- SC Subcommittee
 - * Chairperson
- Count: 19 (excluding observers)



*The Deputy Secretary also serves as the Chief Operating Officer.



Office of the Director (SC-1)

Deputy Director for Field Operations (SC-3)
George Malosh

Ames SO
Cynthia Baebler

Argonne SO
Ronald Lutha

Berkeley SO
Aundra Richards

Brookhaven SO
Michael Holland

Fermi SO
J. Livengood

Oak Ridge SO
Johnny Moore

Princeton SO
Jerry Faul

Pacific NWest SO
Michael Weis

Stanford SO
Paul Golan

Thomas Jeff. SO
James Turi

Chicago Office
Roxanne Purucker

SC Integrated Support Center

Oak Ridge Office
Gerald Boyd

Office of Lab Policy & Evaluat. (SC-32)
D. Streit

Office of Safety, Security and Infra. (SC-31)
M. Jones

Deputy Director for Science Programs (SC-2)
Patricia Dehmer

Adv. Scientific Comp. Research (SC-21)
Michael Strayer

Basic Energy Sciences (SC-22)
Harriet Kung

Biological & Environ. Research (SC-23)
Anna Palmisano

Fusion Energy Sciences (SC-24)
Steve Eckstrand (A)

High Energy Physics (SC-25)
Dennis Kovar

Nuclear Physics (SC-26)
Gene Henry (A)

Workforce Development for Teachers/ Scientists (SC-27)
Wm. Valdez

Office of Project Assessment (SC-28)
Daniel Lehman

Deputy Director for Resource Management (SC-4)
Jeffrey Salmon

Office of Budget (SC-41)
Kathleen Klausing

Office of Grants/ Cont. Support (SC-43)
Martin Rubenstein

Office of Scientific and Tech. Info. (SC-44)
Walt Warnick

Office of SC Project Direction (SC-46)
Vicki Barden

Office of Business Policy and Ops (SC-45)
Jeffrey Salmon (A)

Business Mgmt. Sys. & Serv. (SC-45.1)
Kathryn Chantry

Human Capital Resources (SC-45.2)
Karen Dickenson

(A) Acting



1. **Final Design:** Is the design sufficiently mature so that the project can initiate procurement and construction? For those elements of the design that are still not finalized, has the project convincingly shown that there are no major issues that need to be addressed and that they are on a clear path to a final design?
2. **Baseline Cost and Schedule:** Are the current cost and schedule projections consistent with the approved baseline cost and schedule? Is the contingency remaining adequate for the risk?
3. **Management:** Evaluate the management structure as to its adequacy to deliver the proposed final design within specifications, budget, and schedule. Has the project responded satisfactorily to the recommendations from the previous independent project review?
4. **Construction:** Has there been adequate progress on the construction activities approved under CD-3A? Have Fermilab and the project done the necessary preparations to execute the remaining construction activities?
5. **Documentation:** Is the documentation required by the DOE Order 413.3A for CD-B complete? Has the CD-2 documentation been updated to reflect any changes resulting from the final design?



Tuesday, July 21, 2009—Comitium, Wilson Hall

8:00 am	DOE Executive Session— Comitium, Wilson Hall	D. Lehman
9:00 am	Plenary Session	Directorate, TBD
9:00 am	Welcome— 1 West	Directorate TBD
9:05 am	NOvA Science Update	NOvA Spokesperson TBD
9:20 am	Project Overview	J. Cooper
10:30 am	Break—outside 1 West	
11:00 am	Accelerator and NuMI Upgrades	P. Derwent
11:30 am	Site and Building	S. Dixon
11:45 am	Scintillator	S. Mufson
12:00 pm	Lunch—outside Comitium	
1:00 pm	Fiber	C. Bromberg
1:15 pm	PVC Extrusions	R. Talaga
1:30 pm	Extrusion Modules	K. Heller
2:10 pm	Electronics and DAQ	L. Mualem
2:30 pm	Near/Far Detector Assembly	P. Lukens
3:00 pm	Break—outside 1 West	
3:30 pm	<u>Subcommittee Breakout Sessions</u>	
	SC1 Accelerator and Beamline— room TBD	
	SC2 Site and Building & Near Detector Cavern— TBD	
	SC3 Commodities: Scintillator, Fiber, and PVC— TBD	
	SC4 Extrusion Module Production — TBD	
	SC5 Electronics and DAQ—TBD	
	SC6 Near and Far Detector Assembly— TBD	
	SC7 ES&H— TBD	
	SC8 Cost, Schedule and Funding— TBD	
	SC9 Project Management— Comitium	
5:00 pm	DOE Executive Session— Comitium	D. Lehman
6:30 pm	Adjourn	



Wednesday, July 22, 2009

- 8:00 am **Subcommittee Breakout Sessions**
 SC1 Accelerator and Beamline— room TBD
 SC2 Site and Building & Near Detector Cavern— TBD
 SC3 Commodities: Scintillator, Fiber, and PVC— TBD
 SC4 Extrusion Module Production — TBD
 SC5 Electronics and DAQ—TBD
 SC6 Near and Far Detector Assembly— TBD
 SC7 ES&H— TBD
 SC8 Cost, Schedule and Funding— TBD
 SC9 Project Management— Comitium
- 10:00 am **Break—outside Comitium**
- 10:15 am **Subcommittee Breakout Sessions**
 Continued in same rooms as 8:00 am Sessions
- 12:30 pm **Lunch—outside Comitium**
- 1:30 pm Two Options – D. Lehman to choose Wednesday morning:
 Option one: Full Committee Session with NOvA Management **in Comitium**
 Option two: Continued Breakout Sessions continued in same rooms as 8:00 am
- 2:30 pm Subcommittee Working Session—**Comitium**
- 3:00 pm DOE Full Committee Executive Session—**Comitium** D. Lehman
- 6:00 pm Adjourn

Thursday, July 23, 2009

- 8:00 am Subcommittee Working Session—**Comitium**
- 10:00 am DOE Full Committee Executive Session Dry Run—**Comitium** D. Lehman
- 12:00 pm Working Lunch
- 2:00 pm DOE Summary and Closeout—**1 West** D. Lehman
- 3:00 pm Adjourn



Executive Summary.....Tkaczyk

1. Introduction.....Lavine

2. Technical (Charge Questions 1, 4, 5)

 2.1 Accelerator and Beamlines (WBS 1/2.0).....Murdoch/SC1

 2.1.1 Findings

 2.1.2 Comments

 2.1.3 Recommendations

 2.2 Sites and Building (WBS 1/2.1) Albino/SC2

 2.3 Commodities: PVC Extrusions, Fiber, Scintillator.....Louis/SC3
(WBS 1/2.2, 1/2.3, 1/2.4)

 2.4 PVC Module and Production (WBS 1/2.5).....Loveless/SC4

 2.5 Electronics and Data Acquisition (WBS 1/2.6, 1/2.7).....Van Berg/SC5

 2.6 Near/Far Detector Assembly (WBS 1/2.8, 1/2.9).....Wisniewski/SC6

3. Environment, Safety and Health (Charge Questions 3, 5).....Trotter/SC7

4. Cost Estimate (Charge Questions 2, 5).....Fornek/SC8

5. Schedule and Funding (Charge Questions 2, 5).....Fornek/SC8

6. Management (Charge Questions 3, 4, 5).....Mancini/SC9



U.S. DEPARTMENT OF
ENERGY

NO_vA Cost Estimate

OFFICE OF
SCIENCE



Closeout Presentation and Final Report Procedures



(No Smaller than 18 pt Font)

2.1 [Use number and title corresponding to writing assignment list.]

List Review Subcommittee Members

2.1.1 Findings

- In bullet form, include an assessment of technical, cost, schedule, and management.

2.1.2 Comments

- In bullet form, list descriptive material assessing the findings and the conclusions based on the findings. This is narrative material and is often omitted as a separate heading and the narrative included either under Findings or Recommendations as appropriate. This heading carries more emphasis than the Findings, but does not require an action as do the Recommendations. Do not number your comments.

2.1.3 Recommendations

- 1. Begin with action verb and identify a due date.**
- 2.**



2.1 [Use number and title corresponding to writing assignment list.]

2.1.1 Findings

Include an assessment of technical, cost, schedule, and management.

2.1.2 Comments

Descriptive material assessing the findings and the conclusions based on the findings. This is narrative material and is often omitted as a separate heading and the narrative included either under Findings or Recommendations as appropriate. This heading carries more emphasis than the Findings, but does not require an action as do the Recommendations. Do not number your comments.

2.1.3 Recommendations

- 1. Begin with action verb and identify a due date.**
- 2.**
- 3.**

- **Present closeout reports in PowerPoint.**
- **Forward your sections for each review report**
(in MSWord format) to Casey Clark,
casey.clark@science.doe.gov,
by July 27, 8:00 a.m. (EDT).



Closeout Report
for the
**NuMi Off-Axis Neutrino
Appearance (NOvA) Experiment**
at the
Fermi National Accelerator Lab (FERMI)
July 23, 2009

Daniel R. Lehman
Review Committee Chair
Office of Science, U.S. Department of Energy

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 5. Documentation: Is the documentation ...complete?
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- **Findings**
 - **Comments**
 - **Recommendations**



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-
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- Documentation: Is the documentation ...complete?
 - Findings
 - Comments
 - Recommendations



2. Baseline Cost and Schedule: Are the current cost and schedule projections consistent...
 5. Documentation: Is the documentation ...complete?
- **Findings**
 - **Comments**
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