



**DOE/SC CD-3a Review**  
of the  
**Long Baseline Neutrino Facility/Deep  
Underground Neutrino Experiment  
(LBNF/DUNE) Project**

**Sanford Underground Research Facility**

**December 2-4, 2015**

**Stephen W. Meador**

**Committee Chair**

**Office of Science, U.S. Department of Energy**

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



- **Closeout report (prepared in PowerPoint)**
  - Presented Friday, December 4
  - Instructions—slide 12
  - Template—slide 14
- **Final report draft (prepared in MS Word)**
  - Due Monday, December 7 to Casey  
([casey.clark@science.doe.gov](mailto:casey.clark@science.doe.gov))
  - Instructions—slide 13



## **DOE EXECUTIVE SESSION AGENDA**

### **Wednesday, December 2, 2015—SURF Education & Outreach (E&O) Bldg E&O Conference Room**

- 8:00 a.m. DOE Executive Session ..... S. Meador
- 8:15 a.m. Program Perspective ..... B. Wisniewski
- 8:30 a.m. Federal Project Director Perspective ..... P. Carolan
- 8:45 a.m. Questions
- 8:55 a.m. Adjourn

**Project and review information is available at:**

OPSS Website: <http://www.fnal.gov/directorate/OPMO/Projects/LBNF-DUNE/DOERev/20151202/review.html>

Project Review Site: <https://web.fnal.gov/project/LBNF/ReviewsAndAssessments/DOE-IPR-CD3a/ layouts/15/start.aspx#/>

**Password: review**

**Username: nurev2pass**



# Review Committee Participants

## Stephen W. Meador, DOE/SC, Chairperson

### SC1

#### Detectors

\* Marty Breidenbach, SLAC

### SC2

#### Cryogenic

\* Matt Howell, ORNL  
Brian DeGraff, ORNL

### SC3

#### Conventional Facilities

\* Jack Stellern, ORNL  
Adrienne Carney, U of Pitt

### SC4

#### Environment, Safety and Health

\* Ian Evans, SLAC

### SC5

#### Cost and Schedule

\* Angus Bampton, PNNL  
Jennifer Fortner, ANL  
John Post, LLNL

### SC6

#### Project Management

\* Jim Krupnick, retired LBNL  
Kurt Fisher, DOE/SC  
Lynn McKnight, TJNAF

### Observers

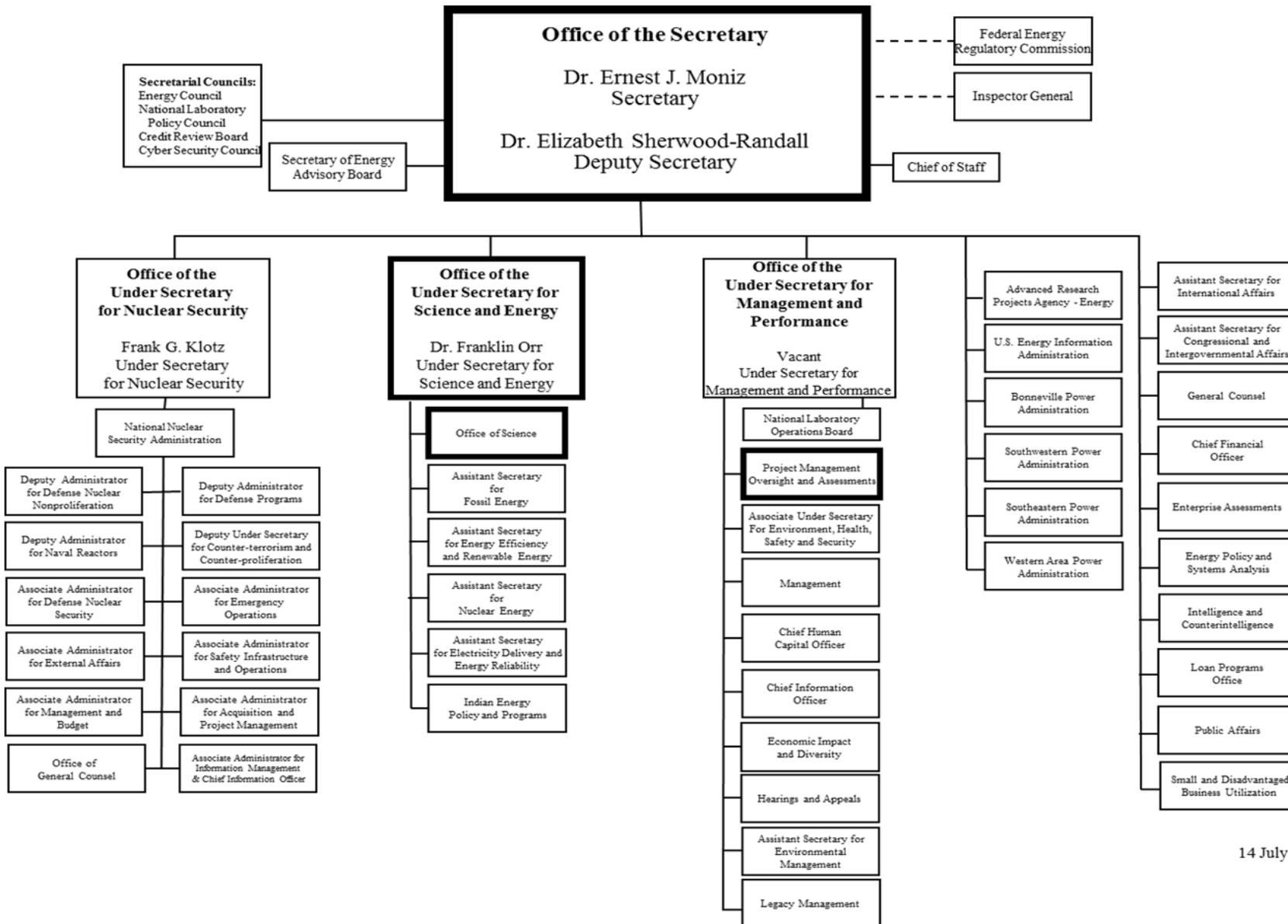
Jim Siegrist, DOE/SC  
Mike Procaro, DOE/SC  
Bill Wisniewski, DOE/SC  
Ted Lavine, DOE/SC  
John Kogut, DOE/SC

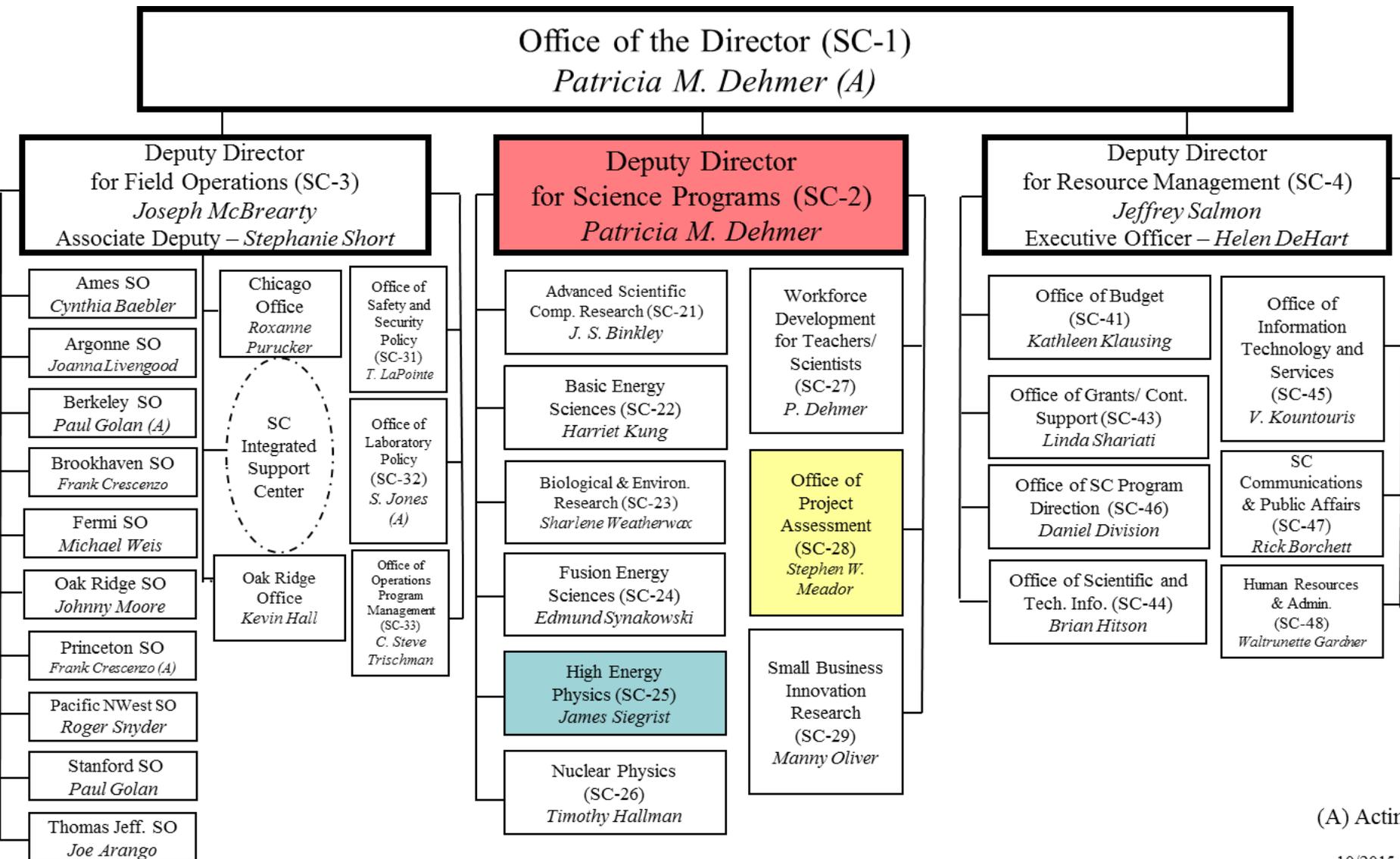
Pepin Carolan, DOE/FSO  
Mike Weis, DOE/FSO  
Adam Bihary, DOE/FSO

### LEGEND

SC Subcommittee  
\* Chairperson

Count: 13 (excluding observers)





(A) Acting



1. Is the Far Site Conventional Facilities (CF) design technically sound and sufficiently mature to support proceeding with procurement and initiation of initial civil construction activities? Does the design flow down from the requirements? Have technical risks been appropriately addressed? Has the interface definition between CF and the cryostat/cryogenic systems and CF and the detector, as well as the logistics of excavation, construction, and technical systems installation, been sufficiently developed?
2. Is the CD-3a scope identified by the project necessary and sufficient to enable installation of the cryostat, cryogenic infrastructure, support systems and detector?
3. Are the cost and schedule for initial far site construction activities credible, with adequate contingencies? Does the project have a credible plan to track performance associated with these activities? Are risks identified and managed appropriately?
4. Are ES&H aspects being properly addressed and are future plans sufficient given the project's current stage of development?
5. Is the project being effectively managed? Is it properly organized and staffed to successfully execute project plans, especially as they relate to the initiation of Far Site construction activities?
6. Has the project responded appropriately to recommendations from the last DOE review, in particular, in relation to the Far Site CF?
7. Is the project ready to seek approval of CD-3a to initiate Far Site construction?



## SURF Underground Tour Schedule- Tuesday, December 1, 1:30-5:30 pm

## Wednesday, December 2, 2015—SURF Education & Outreach (E&O) Bldg E&O Conference Room

8:00 am	DOE Executive Session— <b>E&amp;O Classroom</b> .....	S. Meador
9:00 am	Welcome/Plenary Sessions— <b>E&amp;O Conference Room</b>	
	Welcome and the Fermilab Context.....	N. Lockyer
	SDSTA Welcome .....	C. Petersen
	P5 Perspective .....	A. Lankford
	CERN Context .....	S. Bertolucci, E. Elsen
9:30 am	LBNF/DUNE Project Overview & CD-3a Request .....	C. Mossey
10:00 am	DUNE .....	M. Thomson
10:30 am	Break	
10:45 am	LBNF Project Management .....	E. McCluskey
11:25 am	Risk Management .....	L. Taylor
11:40 am	Procurement Management .....	G. Wray
12:00 pm	Lunch— <b>E&amp;O Bldg</b>	
1:00 am	Far Site Facilities, Design Interfaces & Logistics.....	M. Headley
1:25 am	ES&H.....	M. Andrews
1:50 pm	Far Detector Requirements on Far Site Conventional Facilities (FSCF).....	J. Stewart
2:15 pm	Cryostat Requirements on FSCF.....	M. Nessi
2:40 pm	Cryo Systems Requirements on FSCF.....	D. Montanari
3:05 pm	Final Design and Construction Plan.....	T. Lundin
3:30 pm	Parallel Subcommittee Breakout Sessions	
	Management	Classroom (E&O Bldg)
	Conventional Facilities	Conference Room (E&O Bldg)
	ES&H	2 <sup>nd</sup> Floor Vault (Admin Bldg)
	Cost/Schedule	Exec Conference Room (Admin Bldg)
4:45 pm	Break— <b>E&amp;O Bldg</b>	
5:00 pm	DOE Full Committee Executive Session	
6:30 pm	Adjourn	



## Thursday, December 3, 2015

- 8:00 am Parallel Subcommittee Breakout Sessions
- 9:30 am Break
- 9:45 am Parallel Subcommittee Breakout Sessions Cont.
- 12:00 pm Lunch— **E&O Bldg**
- 1:00 pm Parallel Subcommittee Breakout Sessions Cont.
- 1:45 pm Break
- 2:00 pm Subcommittee Working Session
- 4:00 pm DOE Full Committee Executive Session

## Friday, December 4, 2015

- 9:00 am DOE Full Committee Executive Session Dry Run
- 11:00 am Closeout Report
- 12:00 pm Adjourn



# Report Outline/Writing Assignments

Executive Summary/Summary (2-page) Report.....Fisher\*

1. Introduction .....Wisniewski\*

2. Technical Systems Evaluation (Charge Questions 1, 2, 6, 7)

    2.1 Detectors .....Breidenbach\*/SC-1

        2.1.1 Findings

        2.1.2 Comments

        2.1.3 Recommendations

    2.2 Cryogenic ..... Howell\*/SC-2

3. Conventional Facilities (Charge Questions 1, 6, 7).....Stellern\*/SC-3

4. Environment, Safety and Health (Charge Questions 4, 6, 7)..... Evans\*/SC-4

5. Cost and Schedule (Charge Questions 3, 6, 7) .....Bampton\*/SC-5

6. Project Management (Charge Questions 1, 5, 6, 7) ..... Krupnick\*/SC-6

\*Lead



# **Closeout Presentation and Final Report Procedures**



**(Use PowerPoint / No Smaller than 18 pt Font)**

## **2.1 Use Section Number/Title corresponding to writing assignment list.**

**List Review Subcommittee Members**

**List Assigned Charge Questions and Review Committee Answers**

### **2.1.1 Findings – What the project told us**

- In bullet form, include your account of factual technical, cost, schedule, and management. Information provided/presented by the Project

### **2.1.2 Comments – What we think about what the project told us**

- In bullet form, include your assessment of project status (observations, concerns, feedback, suggestions, etc.) based on the findings. This section 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 – What we think the project needs to do**

- 1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.**

**For Critical Decision reviews, include a specific recommendation addressing how the Committee judged the readiness for the CD, *i.e.*:**

- **The project is ready to proceed to CD-2; *or***
- **The project is ready to proceed to CD-2, after addressing the following recommendations**



# Format: Final Report

(Use MS Word / 12pt Font)

## 2.1 Use Section Number/Title corresponding to writing assignment list.

### 2.1.1 Findings – What the project told us

Include a brief narrative description of technical, cost, schedule, management information provided by the project. Each subcommittee will emphasize their area of responsibility.

**Cost and schedule subcommittee should provide attachments for approved project cost breakdown and schedule. Management subcommittee should provide attachment for approved project organization and names of personnel.**

### 2.1.2 Comments – What we think about what the project told us

Descriptive material assessing the findings and making observations and conclusions based on the findings. **The committee's answer to the charge questions should be contained within the text of the Comments Section.** Do not number your comments.

### 2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.
- 2.

**Please Note: Recommendations are approved by the full committee and presented at the review closeout briefing. Recommendations SHOULD NOT be changed or altered from the closeout report to the Final Report.**



# **Closeout Report on the DOE/SC CD-3a Review of the**

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- **Findings**
  - **Comments**
  - **Recommendations**



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- **Findings**
- **Comments**
- **Recommendations**



## 5. Cost and Schedule

A. Bampton, PNNL / Subcommittee 5

<b>PROJECT STATUS</b>		
Project Type	MIE / Line Item / Cooperative Agreement	
CD-1	Planned:	Actual:
CD-2	Planned:	Actual:
CD-3	Planned:	Actual:
CD-4	Planned:	Actual:
TPC Percent Complete	Planned: _____%	Actual: _____%
TPC Cost to Date		
TPC Committed to Date		
TPC		
TEC		
Contingency Cost (w/Mgmt Reserve)	\$	
Contingency Schedule on CD-4b	_____ months	_____ %
CPI Cumulative		
SPI Cumulative		



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