



FRA's
Earned Value Management System
Corrective Action Plan
Implementation

January 12, 2010

Dean Hoffer and Mike Rhoades

Subject Areas

- Implementation of Corrective Actions for CAR #1 – by Dean Hoffer
- Implementation of Corrective Actions for CAR #3 – by Mike Rhoades

CAR #1

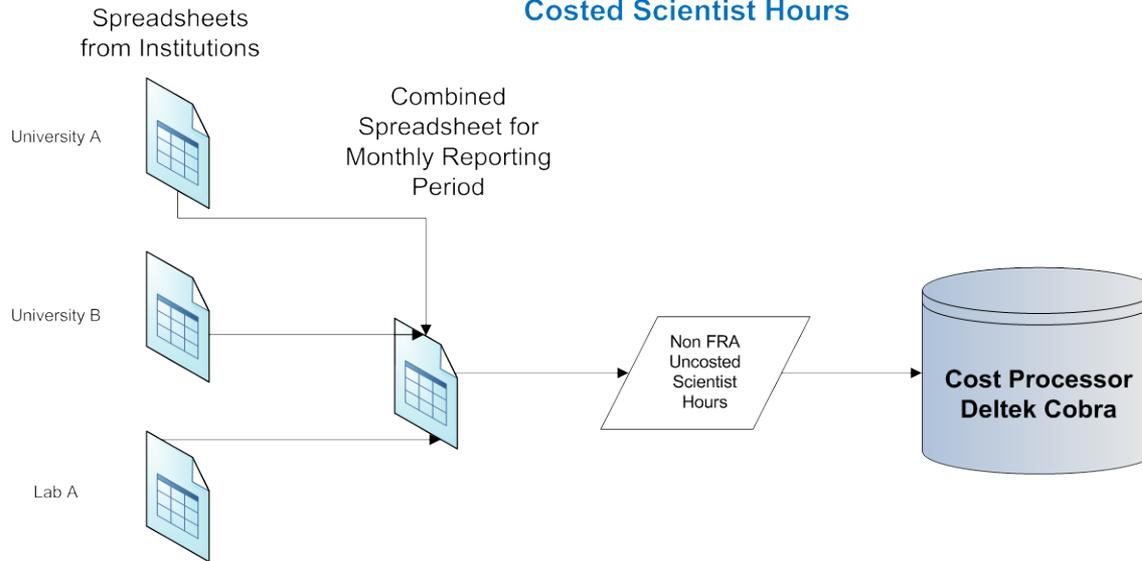
- **Subject**: Accounting for Scientist Labor (uncosted)
- **FRA Corrective Action**: The FRA EVMS will track all budgeted labor on projects. Because labor requirements for projects are established in hours, tracking of labor “costs “ can be done either in hours or in dollars. The FRA EVMS will track all costed labor in dollars and uncosted (scientist) labor, as applicable, in hours.
 - FRA will perform EV in hours for uncosted Scientist effort budgeted on a project.
 - A process will be established for the recording of scientist hours worked on a project where uncosted scientist effort is included in the hours budgeted.
 - A process will be established for the collection of scientist hours worked on a project for comparison to budgeted hours.
 - For non-FRA uncosted Scientist from other institutions, agreements will be made on the recording and reporting of hours worked on a project. These agreements will be documented in the Memorandum of Understanding (MOU) with each institution for new projects.

CAR #1 (continued)

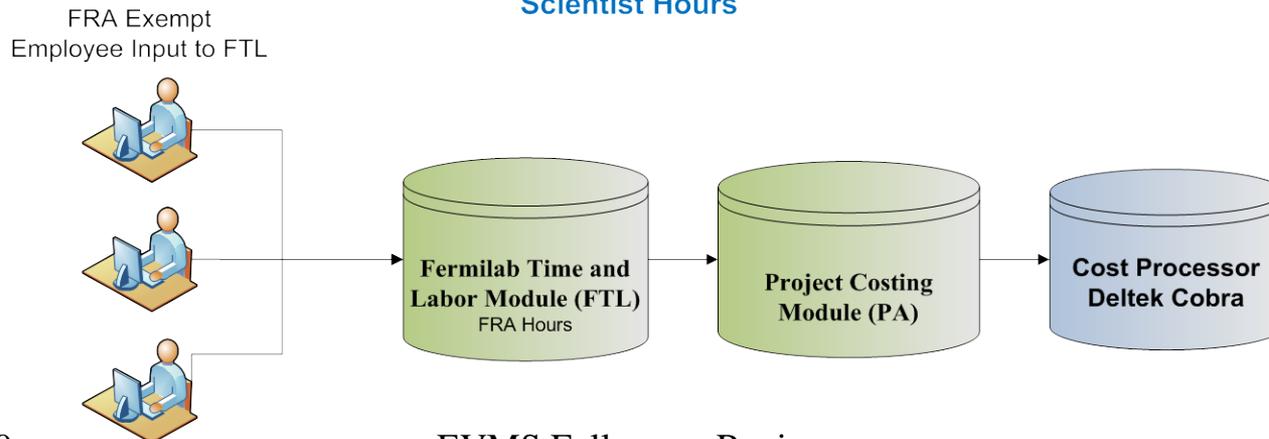
- The following documents will be revised to reflect the process for performing EV with hours
 - FRA Earned Value Management System Description
 - Procedure 12.PM-002 (Control Accounts, Work Packages, Planning Packages)
 - Procedure 12.PM-003 (Work Authorization)
 - Procedure 12.PM-005 (Cost Estimating)
 - Procedure 12.PM-006 (Monthly Status Reporting)
 - Procedure 12.PM-007 (Change Control)
- Training on these processes will be provided to CAMs, project office, senior management, and collaborating institutions.
- This corrective action will be implemented on the NOvA Project. Implementation will include modifying existing MOUs with collaborating institutions on agreement to record and report scientist effort.
- **Implementation Dates:**
 - System Description and Implementing Procedures issued with changes for CAR #1 on Sept. 17, 2009
 - First full month collection of uncOSTed Scientist hours for Oct. 2009

Processes for Collecting Uncosted Scientist Hours Worked

Process for Collecting Non FRA Non Costed Scientist Hours



Process for Collecting FRA Non Costed Scientist Hours



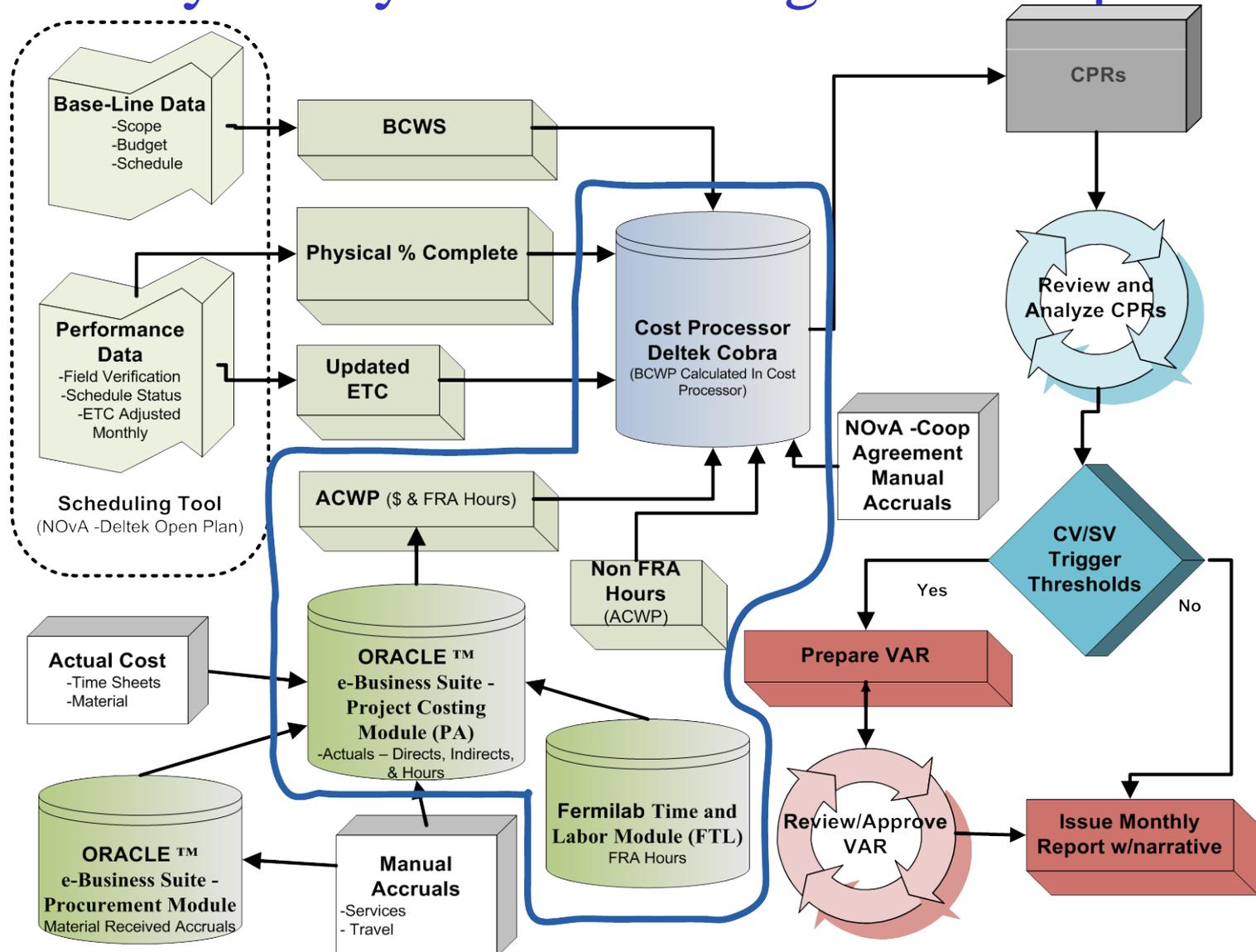
Example of Non FRA Scientist Input Spreadsheet

NOvA PROJECT SCIENTIFIC EFFORT REPORTING BY COLLABORATING INSTITUTIONS TO FERMILAB						
INSTITUTION	California Institute of Technology	EFFORT FOR	MONTH/YEAR			
WEEK ENDING*	NAME	RESOURCE TYPE	PROJ#	CTC# **	TASK NAME (will fill in when CTC# is selected)	HOURS
10/18/2009	Leon Mualem	Scientist	425P	1.6.4.5	Post CD-1 Electronics R&D Cost Account	20.00
10/18/2009	Leon Mualem	Scientist	425P	1.7.5.5	Post CD-1 DAQ R&D Cost Account	10.00
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
			425P		#N/A	
insert rows as necessary						
*Sunday of week worked						
** Charge Code - see CTC and L2 Mrg list worksheet in this workbook for guidance on selection - use pull down menu in cell to select CTC#						

Combined Spreadsheet for Monthly Reporting Period

NOvA Collaborator Scientific Effort Reporting		
Oct-09		Project 425P
Sum of HOURS		
COBRA RESOURCE NAME	CTC# **	Total
L.ANL.PD2.SCI.PHY	1.4.6.5	40
	1.8.9.5	56
L.CT.PD.SCI.PHY	1.6.4.5	70
	1.7.5.5	40
L.IU.PD.SCI.PHY	2.2.1	
	2.2.4	81
	2.2.6	40
L.SMU.PD.SCI.PHY	2.2.1	2
L.SU.PD.SCI.PD	1.7.5.5	3
L.UMNTC.PD.SCI.GRAD	1.6.4.5	32
L.UMNTC.PD.SCI.PD	1.5.10.5	207
L.UMNTC.PD.SCI.PHY	1.5.10.5	84
	2.10	40
L.UVA.PD.SCI.PD	1.6.4.5	70
	1.7.5.5	75
L.UVA.PD.SCI.PHY	1.6.4.5	40
Grand Total		880

Monthly Analysis and Management Reporting



CONTRACT PERFORMANCE REPORT FORMAT 1 - WORK BREAKDOWN STRUCTURE										
1. CONTRACTOR				2. CONTRACT			3. PROGRAM		REPORT PERIOD	
a. NAME Fermi National Accelerator Laboratory				a. NAME			a. NAME NOvA project		FROM 01-Oct-2009 TO 31-Oct-2009	
8. PERFORMANCE DATA										
Control Acct	CURRENT PERIOD SCI HOURS					CUMULATIVE TO DATE FROM Oct-2009				
	BUDGETED COST		ACTUAL COST	VARIANCE		BUDGETED COST		ACTUAL COST	VARIANCE	
	WORK	WORK	WORK	SCHEDULE	COST	WORK	WORK	WORK	SCHEDULE	COST
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.0.1 RR Upgrades	15	32	35	17	(3)	15	32	35	17	(3)
1.0.2 MI Upgrades	26	0	45	(26)	(45)	26	0	45	(26)	(45)
1.0.3 NUMI Upgrades	70	0	106	(70)	(106)	70	0	106	(70)	(106)
1.0.4 ANU Beam Physics	294	320	7	26	313	294	320	7	26	313
1.0.5 ANU Project Management	0	0	0	0	0	0	0	0	0	0
1.2 Liquid Scintillator R&D	0	0	0	0	0	0	0	0	0	0
1.3 WLS Fiber R&D	0	9	0	9	9	0	9	0	9	9
1.4 PVC Extrusion R&D	0	0	40	0	(40)	0	0	40	0	(40)
1.5 PVC Module R&D	96	45	291	(51)	(246)	96	45	291	(51)	(246)
1.6 Electronics R&D	0	0	212	0	(212)	0	0	212	0	(212)
1.7 DAQ R&D	120	0	118	(120)	(118)	120	0	118	(120)	(118)
1.8 Detector Assembly R&D	0	0	59	0	(59)	0	0	59	0	(59)
1.9 Project Management R&D	0	0	0	0	0	0	0	0	0	0
2.0.1.1 Recycler Ring Modifications	5	5	0	0	5	5	5	0	0	5
2.0.1.2 Recycler Kicker System	5	5	0	0	5	5	5	0	0	5
2.0.1.3 Recycler Instrumentation	0	0	0	0	0	0	0	0	0	0
2.0.3.1 NuMI Primary Proton Beam	9	2	0	(6)	2	9	2	0	(6)	2
2.0.3.2 NuMI Target Hall Technical Components	0	0	0	0	0	0	0	0	0	0
2.0.3.3 NuMI Target Hall Infrastructure	0	0	0	0	0	0	0	0	0	0
2.0.4 Project Management - ANU - Construction	380	380	51	0	329	380	380	51	0	329
2.10 Project Management - Nova Project - Construction	0	0	139	0	(139)	0	0	139	0	(139)
2.2.1 Mineral Oil	0	0	2	0	(2)	0	0	2	0	(2)
2.2.2 Pseudocumene	0	0	0	0	0	0	0	0	0	0
2.2.3 Waveshifters and Stadis 425	0	0	0	0	0	0	0	0	0	0
2.2.4 Blending	0	0	81	0	(81)	0	0	81	0	(81)
2.2.6 Management - Liquid Scintillator - Construction	54	54	40	0	14	54	54	40	0	14
2.3.1 Procurement - WLS Fiber	28	0	0	(28)	0	28	0	0	(28)	0
2.3.2 Production - WLS Fiber	0	0	0	0	0	0	0	0	0	0
2.3.3 Management - WLS Fiber - Construction	7	7	0	0	7	7	7	0	0	7
2.4.1 Procurement - PVC Extrusions	3	0	0	(3)	0	3	0	0	(3)	0
2.4.2 Extrusion Pre-Production	0	0	0	0	0	0	0	0	0	0
2.4.6 Management - PVC Extrusions - Construction	53	53	0	0	53	53	53	0	0	53
2.5.1 End Seals	0	0	0	0	0	0	0	0	0	0
2.5.2 Optical Connector Production	0	0	0	0	0	0	0	0	0	0
2.5.3 Module Production	23	16	0	(7)	16	23	16	0	(7)	16
2.5.4 Management - PVC Modules - Construction	18	18	0	0	18	18	18	0	0	18
2.6.1 APD Module Production	0	0	0	0	0	0	0	0	0	0
2.6.2 Readout - FEB	0	0	0	0	0	0	0	0	0	0
2.6.3 Readout Infrastructure	0	0	0	0	0	0	0	0	0	0
2.6.4 Management - Electronics - Construction	18	18	0	0	18	18	18	0	0	18
2.7.1 DAQ Software	176	0	47	(176)	(47)	176	0	47	(176)	(47)
2.7.4 Detector Control System	0	0	0	0	0	0	0	0	0	0
2.7.5 Management - DAQ - Construction	18	18	69	0	(51)	18	18	69	0	(51)
2.8.1 Near Detector Site Preparation	20	0	0	(20)	0	20	0	0	(20)	0
2.8.2 Mechanical Construction and Installation - Near Detector Ass	0	0	0	0	0	0	0	0	0	0
2.8.3 Liquid Scintillator Filling Equipment - Near Detector Assemb	0	0	0	0	0	0	0	0	0	0
2.8.4 Installation Coordination - Near Detector Assembly	0	0	0	0	0	0	0	0	0	0
2.8.5 Management - Near Detector Assembly - Construction	11	11	0	0	11	11	11	0	0	11
2.9.1 Mechanical Systems - Far Detector Assembly	0	0	0	0	0	0	0	0	0	0
2.9.2 Detector Infrastructure - Far Detector Assembly	0	0	0	0	0	0	0	0	0	0
2.9.3 Scintillator Filling Equipment - Far Detector Assembly	0	0	0	0	0	0	0	0	0	0
2.9.4 Block Assembly and Installation - Far Detector Assembly	0	0	0	0	0	0	0	0	0	0
2.9.5 Management - Far Detector Assembly - Construction	0	0	0	0	0	0	0	0	0	0
Total	1,448	992	1,342	(456)	(350)	1,448	992	1,342	(456)	(350)

CPR 1 for Hours

Variance Thresholds (with hours)

Variance Analysis Thresholds for Control Accounts		
Green Thresholds – Cost and Schedule Performance falling outside of yellow or red thresholds		
Yellow Thresholds		
Cost Variance Schedule Variance	Type	Threshold limit
Dollars	Current Period	$\geq \pm 5\%$ to $< \pm 10\%$ and $\geq \$50K$
	Cumulative	$\geq \pm 5\%$ to $< \pm 10\%$ and $\geq \$100K$
Hours	Current Period	$\geq \pm 5\%$ to $< \pm 10\%$ and ≥ 350 hrs
	Cumulative	$\geq \pm 5\%$ to $< \pm 10\%$ and ≥ 700 hrs
Red Thresholds		
Cost Variance Schedule Variance	Type	Threshold limit
Dollars	Current Period	$\geq \pm 10\%$ and $\geq \$100K$
	Cumulative	$\geq \pm 10\%$ and $\geq \$200K$
Hours	Current Period	$\geq \pm 10\%$ and ≥ 700 hrs
	Cumulative	$\geq \pm 10\%$ and ≥ 1400 hrs

Note: This applies to SV% (Schedule Variance in %) or CV% (Cost Variance in %) and the SV or CV in \$ or hours.

Document Revisions

- The following documents were revised for CAR #1 and issued on Sept. 17, 2009
 - FRA Earned Value Management System Description
 - Procedure 12.PM-002 (Control Accounts, Work Packages, Planning Packages)
 - Procedure 12.PM-003 (Work Authorization)
 - Procedure 12.PM-006 (Monthly Status Reporting)
- Revised documents linked off of review webpage

Training

- EVMS update and refresher training for project personnel
 - Conducted Oct. 2009
 - Training slides and sign-in sheets posted on webpage
- EVMS update and refresher training for Lab senior management
 - Conducted Nov. 2009
 - Training slides and sign-in sheet posted on webpage

MOUs

- Existing MOUs did not need to be revised to implement the collection of Scientist hours from collaborating institutions as identified in the CAP
- Letter issued July 13, 2009 by John Cooper to the Collaborating Institutions clarified that reporting requirements in the existing MOUs includes the reporting of uncOSTed Scientists hours for work budgeted in the NOvA schedule
- Letter linked off of webpage

CAR #3

- **Subject:** Direct Cost for Exempt Labor
- **FRA Corrective Action:**
 - All hours worked for exempt FRA employees will be recorded on a weekly basis.
 - The FRA Fermilab Time and Labor system will be fully implemented for exempt employees for this purpose.
 - Standard FRA policy and procedures have been developed. A revised Labor Capture and Distribution Policy, with specific guidance for employees regarding tracking and recording of effort, was posted on the Finance Section website on May 26, 2009. A memo was distributed from the Fermilab Director, Dr. Pier Oddone, directing employees using the FTL system to read and adhere to the new policy, which will be implemented as of June 15, 2009.
- **Implementation Dates:**
 - All FRA exempt employees reporting actual hours via Fermilab Time and Labor (FTL) started Sept. 1, 2009

Reference Material – Reporting Time for All Hours Worked

Fermilab Time and Labor

- [Director's Memo \(PDF\)](#)
- [Fermilab Today Announcement](#)
- [Questions & Answers](#)
- [Submit a Question](#)

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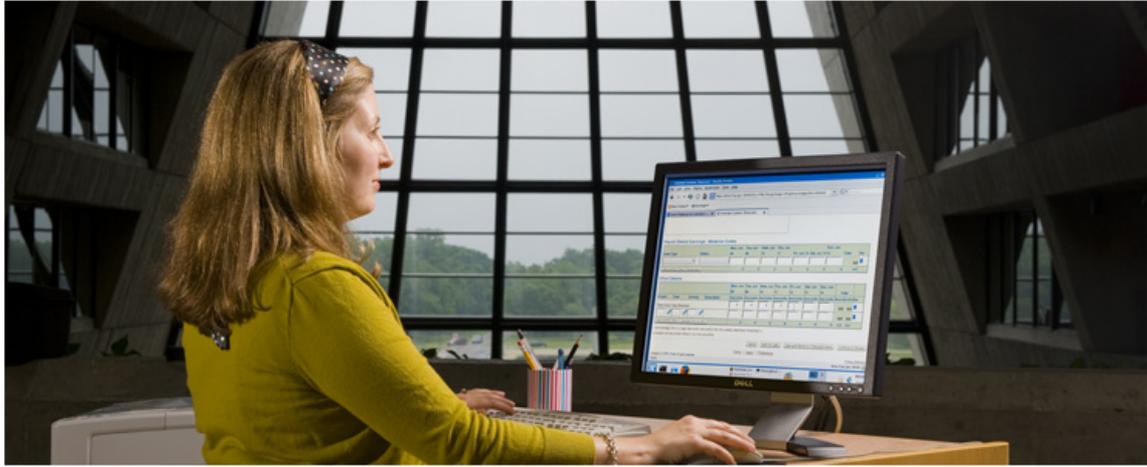
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Fermilab Time and Labor



A change is coming to the Fermilab Time and Labor electronic reporting system. Once a week, beginning June 15, employees will need to report all hours worked by day on the electronic time card, including hours worked in excess of 40 hours per week. This applies only to employees who already use the FTL system.



Director's Memos

- [To Exempt Employees Currently using FTL \(PDF\)](#)
- [To Division/Section/Center Heads \(PDF\)](#)

Latest Questions and Answers

Updated: August 10, 2009

Q. How do I bookmark the new URL to get to FTL? If I sign in and save it to Favorites I get a redirect error when I try to use it.

Helpful Links

- [Time and Labor Reporting](#)
- [Finance Section](#)

Time and Labor Documentation

Entering Time as an Exempt Employee

Chapter: 10-Entering Time in OTL
Section: -Entering Time as an Exempt Employee

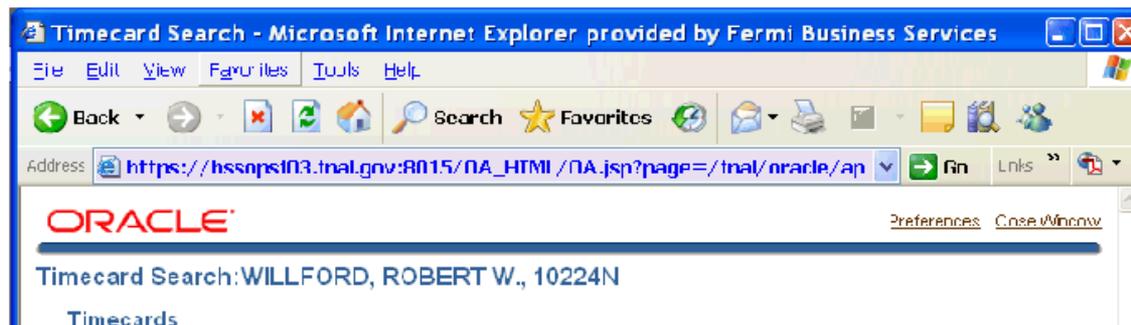
PLEASE NOTE: The Timecard is expected to be an accurate representation of the time you have actually worked.

Per Fermilab policy effective June 15, 2009: All employees on FTL must report actual hours worked by day on a weekly basis. Employees are expected to report significant time spent on each program, project, or activity to the appropriate project/task for that work. In most situations, work of one-half hour or more would constitute significant time spent.

You may find and read the policy in its entirety at the following web site:

<http://finance.fnal.gov/LaborCaptureandDistributionPolicyandProcedureEffectiveJune152009.pdf>.

Clicking on [Timecard] will cause a window like the following sample to open:



Additional Communication in Townhall Meetings

Fermilab Time & Effort Reporting

What is it?

Web-based system to automate time and attendance reporting and approval for all lab employees

Effort Reporting, Time Sheets & Leave Sheets all to use a single source of entry

Employees to enter their own time

Time worked to be reported in actual hours

Time entry and approval to occur on a weekly basis

Fully integrated with the Laboratory's core financial management systems (Oracle & PeopleSoft)

January 5, 2009

3



Employee's Electronic Timecard

ORACLE Preferences Close Window

Time Entry:

Accrual Balance:
 As of: Sunday, November 15, 2009
 Vacation Balance: 360.0 Hours
 Floating Holiday Balance: 8.0 Hours

Default Home Task(s):

Project	Task	%
40	40.06.01	100

Period:

Approver Comments:
 Note to Approver / Reviewer:

Payroll Details Earnings / Absence Codes

Leave Type	Details	Mon, Nov 09	Tue, Nov 10	Wed, Nov 11	Thu, Nov 12	Fri, Nov 13	Sat, Nov 14	Sun, Nov 15	Total	Del
<input type="text"/>	<input type="text"/>								0.0	<input type="button" value="T"/>
<input type="button" value="Add Another Row"/> <input type="button" value="Recalculate"/>		0	0	0	0	0	0	0	0.0	

Effort Details

Project	Task	Activity	Description	Mon, Nov 09	Tue, Nov 10	Wed, Nov 11	Thu, Nov 12	Fri, Nov 13	Sat, Nov 14	Sun, Nov 15	Total	Hours	Del
Total Home Task Allocation				2	1	5	4	2			9.5	<input type="button" value="T"/>	
425	1.8.9.5		NQvA Detector Assembly R&D	1	2	7.5	4.25	6			20.75	<input type="button" value="T"/>	
425	1.2.10.5		NQvA Liquid Scintillator R&D	0	0	0	0	0		0	0.0	<input type="button" value="T"/>	
425	1.6.4.5		NQvA Electronics R&D			0	0	0		0	0.0	<input type="button" value="T"/>	
2100	1.04		PPD DETECTOR LABOR / E-906 DRELL-YAN	0		0	0	0		0	0.0	<input type="button" value="T"/>	
40	40.42.01		PPD-Chicago Observatory for Underground Particle Physics	0	0			0			0.0	<input type="button" value="T"/>	
425	2.10		NQvA Project Management - Construction	0	4						4.0	<input type="button" value="T"/>	
40	40.44.10		PPD MINOS General Operations Support	5	2	0	0	0			7.0	<input type="button" value="T"/>	
40	40.01.13		PPD Service on Reviews/Committees				1.5				1.5	<input type="button" value="T"/>	
<input type="button" value="Add Another Row"/> <input type="button" value="Recalculate"/>				8.0	9.0	8.0	9.75	8.0	0	0.0	42.75		

I acknowledge this is a legal document and certify that this weekly electronic timesheet is complete and accurately reflects my time and effort.

Inquiry by Project and Task in Accounting System

Oracle Applications - EBSPRD - Oracle 11i eBS Applications

File Edit View Folder Tools Reports Window Help

Find Expenditure Items (FERMILAB)

Project Number	425	Project Name	NOvA
Task Number	1.8.9.5	Task Name	Detector Asmbly R&D
Employee Name	[REDACTED]	Employee Number	[REDACTED]
Supplier Name		Supplier Number	
Expenditure Org		Job	
Expend Typ Class		Expenditure Category	Personnel Costs
Expenditure Type		Non-Labor Resource	
Resource Org		Trans Id	
Service Type		Billing Status	
Item Dates	09-NOV-2009 - 15-NOV-2009	Billable	
Expnd Ending Dates		Billing Hold	
Exp. Item Periods		Billed	
Expenditure Batch			
Transaction Source			
Assignment			
Work Type			
Set of Books Currency	USD		

Exclude Net Zero Items Exclude Burden Transactions

Mass Adjust Clear Find

Inquiry Results in Accounting System

Expenditure Items (FERMILAB)

Exp Inquiry More Info

Project	Task	Expnd Type	Raw Cost	Burdened Cost	Employee/Supplier	Expenditure	Qty	[]	Item Date
425	1.8.9.5	TIME WORKED	51.03	51.03		091115-823\$.9349	..1	09-NOV-2009
425	1.8.9.5	TIME WORKED	102.06	102.06		091115-823\$	1.869	..2	10-NOV-2009
425	1.8.9.5	TIME WORKED	382.73	382.73		091115-823\$	7.012	..7\5	11-NOV-2009
425	1.8.9.5	TIME WORKED	216.88	216.88		091115-823\$	3.973	..4\25	12-NOV-2009
425	1.8.9.5	TIME WORKED	306.19	306.19		091115-823\$	5.609	..6	13-NOV-2009

Expenditure Items

Project-Task

Work Period

Hours

OK Cancel Clear Help

Item Details

Work Type

Cost Calculation

Annual Rate		109,682.00
Per month rate		9,140.17
2 November Holidays ((Annual rate/2080 hrs) x 16 hrs))		<u>(843.71)</u>
November Time Worked		8,296.46
November Daily rate (19 work days)		436.66
November Unit rate (8 hrs per day)		54.58
In FTL total hours are reported and then converted to Units for costing.		
Timecard of November 9 -15		
November 13: # of Hours to Proj 425 Task 1.8.9.5		6
Total Hours reported for the week		<u>42.75</u>
(6/42.75) x 40 hrs with system rounding		5.60964
November Unit rate		54.58
# of Units to Proj 425 Task 1.8.9.5	x	5.60964
Charged to Proj 425 Task 1.8.9.5	\$	306.19

Weekly Summary of Cost Allocation – Extracted from Accounting System

Project Accounting Entries - Weekly Overview						
Period Name	Project Number	Task Number	Amount Sum	Quantity/Units	Hours Sum	Expenditure Group
NOV09-10	425	2.10	201.95	3.70	4.00	091115-823ST82725
Totals	425	2.10	201.95	3.70	4.00	
NOV09-10	425	1.8.9.5	382.73	7.01	7.50	091115-823ST82725
NOV09-10	425	1.8.9.5	306.19	5.61	6.00	091115-823ST82725
NOV09-10	425	1.8.9.5	216.88	3.97	4.25	091115-823ST82725
NOV09-10	425	1.8.9.5	102.06	1.87	2.00	091115-823ST82725
NOV09-10	425	1.8.9.5	51.03	0.93	1.00	091115-823ST82725
Totals	425	1.8.9.5	1,058.89	19.40	20.75	
NOV09-10	40	40.44.10.01	253.42	4.64	5.00	091115-823ST82725
NOV09-10	40	40.44.10.01	101.37	1.86	2.00	091115-823ST82725
Totals	40	40.44.10.01	354.79	6.50	7.00	
NOV09-10	40	40.06.01	204.54	3.75	4.00	091115-823ST82725
NOV09-10	40	40.06.01	204.54	3.75	4.00	091115-823ST82725
NOV09-10	40	40.06.01	51.13	0.94	1.00	091115-823ST82725
NOV09-10	40	40.06.01	25.57	0.47	0.50	091115-823ST82725
Totals	40	40.06.01	485.78	8.90	9.50	
NOV09-10	40	40.01.13	76.41	1.40	1.50	091115-823ST82725
Totals	40	40.01.13	76.41	1.40	1.50	
WE 11/15/09 Totals			2,177.82	39.90	42.75	