NCSX Project Meeting
July 2, 2008

Background: This is a report of the Project Meeting held Tuesday, July 2nd.

The focus of this meeting was to review the proposed revised NCSX Project closeout activities and to discuss the overall closeout plans.

Meeting Minutes:

Safety Briefing –. Jim Chrzanowski provided a safety minute on summer yard safety around the home. Included as part of these minutes.

Project Status – Don Rej updated the Project on the current status and plans for providing an "orderly shutdown" on NCSX. There is a weekly teleconference with OFES on Monday, July 7th to discuss our proposed MIE scope and the five major areas for R&D. Included as part of these minutes.

Ron Strykowsky then went through the latest three week look ahead schedule. It was noted that a significant amount of work is being completed and that jobs are being closed as the work is completed.

Document Capture and Archiving – Bob Simmons discussed the special ftp site being set up to facilitate archiving NCSX information. Archiving guidelines and closeout template included as part of these minutes.

Action Items from this Meeting:

- Following the meeting, the management team reviewed the costs to date – it was noted that we will need to carefully track the archiving/closeout costs in Job 8221. Ron to develop a suggested way to do this.
- There needs to be resolution on whether the cryostat used for modular coil testing in the TFTR basement should be retained or disposed of. Don, Phil, and Larry will discuss with Mike Williams next week. Until this is resolved, Erik will not proceed with disposition.

NCSX Project Meeting
July 2, 2008

Attachments

- **Meeting Minutes**
- **Safety Minute – Jim Chrzanowski**
- **Close Out Update – Don Rej**
- **Three Week Look-Ahead Schedule – Ron Strykowsky**
- **Archiving Guidelines & Closeout Notes Template– Bob Simmons**

Summer Yard Safety
"Safety Minute"

Jim Chrzanowski

July 2, 2008

Warm Weather Activities

- Along with the summer and warm temperatures comes the return for many to the outdoors.
- You should enjoy these great days, but do it wisely with some thought to safety
- Here are just a few personal common sense notes that I have to help you enjoy.

Pool Safety

- No running or horsing around
- No diving from shallow end of pool
- No glass bottles or containers in the pool area
- Make sure that you can swim before entering the deep end of the pool
- Watch your kids while they are near the pool area- a drowning accident can happen very quickly
- Wear sun protection- sun screen, hats etc.

Safety for Summer Chefs

- Always take care when cooking on the grills [gas or charcoal]
- Be cautious when using lighter fluids
- Watch for potential burns- use mitts or pot holders
- Do not light your gas grill under a house overhang. [I know someone whose house burned down]
- Check your gas grill for faulty hoses or burners
- Be aware of possible flare-up from cooking meats on the grill
- Make sure that you know how to cook- good way of ruining a party

Yard Work Safety

- Make sure that you are wearing the proper eye protection whenever using an edger, hedge trimmers, chain saw, etc,
  - I nearly lost sight to my eye doing pruning [no power tools] I was wearing my regular glasses, but a branch poked my eye from the side. I was very lucky

- Be cautious of your back and knees when working in the yard weeding or picking up branches, leaves, etc
- Use proper hand wear or gloves when weeding, shoveling, etc. Improper hand protection results in cuts, blisters, splinters or thorns
- Don't over exert yourself in the heat.
  - Wear sun protection
  - Drink plenty of liquids
  - Take breaks so that you don't become over heated

NCSX Project Team Meeting: July 2, 2008

NCSX
National Compact Stellarator Experiment

- Safety Minute - J. Chrzanowski
- Closeout Plan Submission to DOE
- June Cost Reports (PPPL)
- 3-week look-ahead

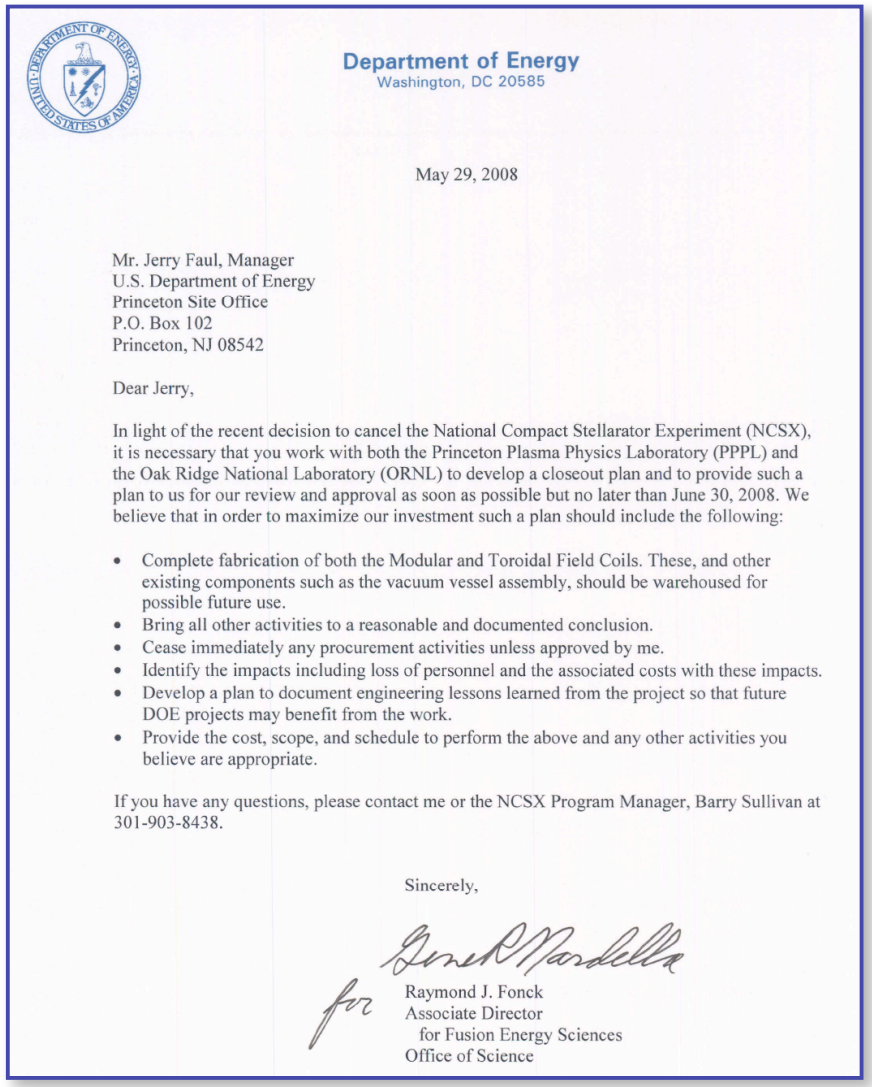
PPPL
PRINCETON PLASMA
PHYSICS LABORATORY

ornl

NCSX - Project Status

NCSX
National Compact Stellarator Experiment

- Our current resource-loaded closeout plan was formally proposed to OFES on 6/30/08
  - Consistent with DOE request & guidance
  - We will continue to work towards this plan until there is further guidance from DOE
- NCSX to be topic of PPPL conference call with OFES Director on 7/7/08
- NCSX to be topic of OFES Director meeting with DOE Under Secretary for Science on 7/8
  - Expect feedback after this meeting



Department of Energy
Washington, DC 20585

May 29, 2008

Mr. Jerry Faul, Manager
U.S. Department of Energy
Princeton Site Office
P.O. Box 102
Princeton, NJ 08542

Dear Jerry,

In light of the recent decision to cancel the National Compact Stellarator Experiment (NCSX), it is necessary that you work with both the Princeton Plasma Physics Laboratory (PPPL) and the Oak Ridge National Laboratory (ORNL) to develop a closeout plan and to provide such a plan to us for our review and approval as soon as possible but no later than June 30, 2008. We believe that in order to maximize our investment such a plan should include the following:

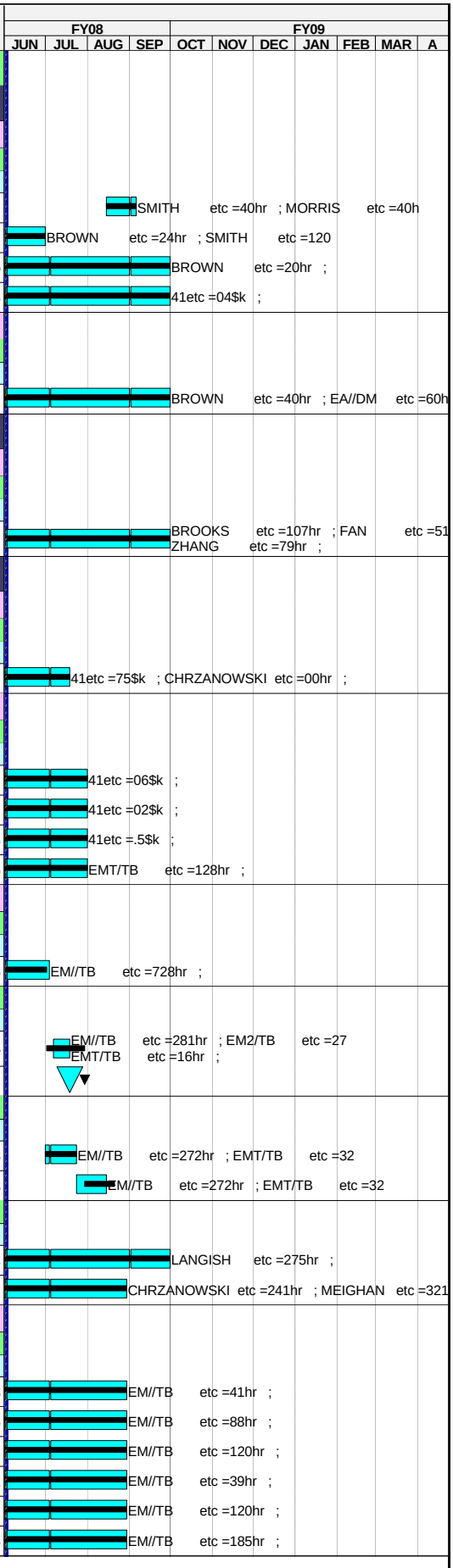
- Complete fabrication of both the Modular and Toroidal Field Coils. These, and other existing components such as the vacuum vessel assembly, should be warehoused for possible future use.
- Bring all other activities to a reasonable and documented conclusion.
- Cease immediately any procurement activities unless approved by me.
- Identify the impacts including loss of personnel and the associated costs with these impacts.
- Develop a plan to document engineering lessons learned from the project so that future DOE projects may benefit from the work.
- Provide the cost, scope, and schedule to perform the above and any other activities you believe are appropriate.

If you have any questions, please contact me or the NCSX Program Manager, Barry Sullivan at 301-903-8438.

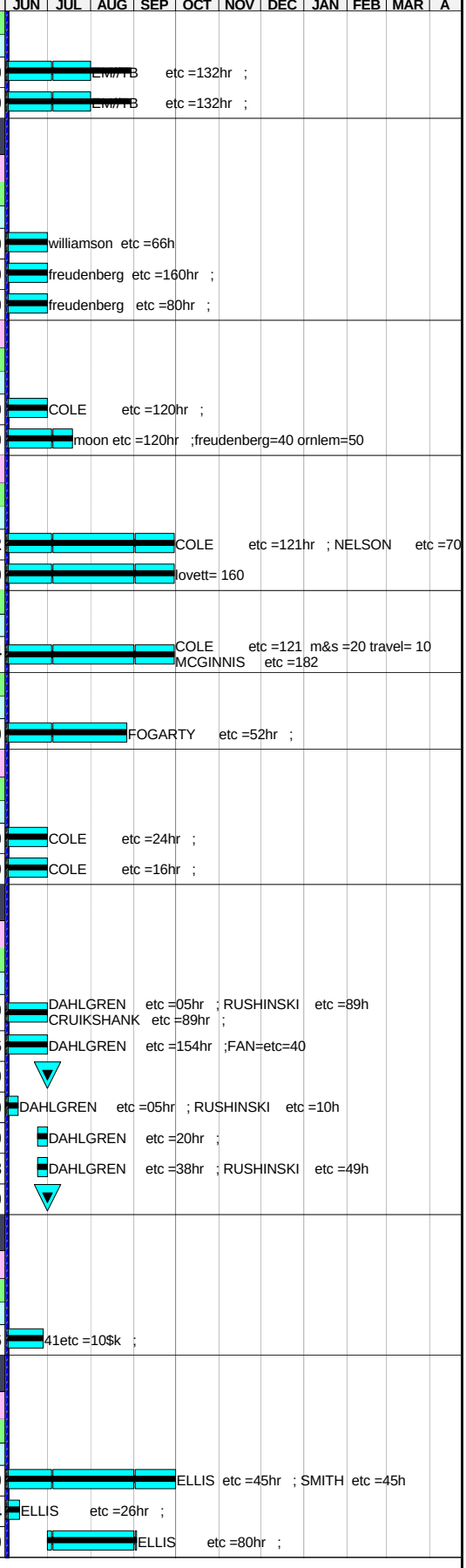
Sincerely,

for Raymond J. Fonck
Associate Director
for Fusion Energy Sciences
Office of Science

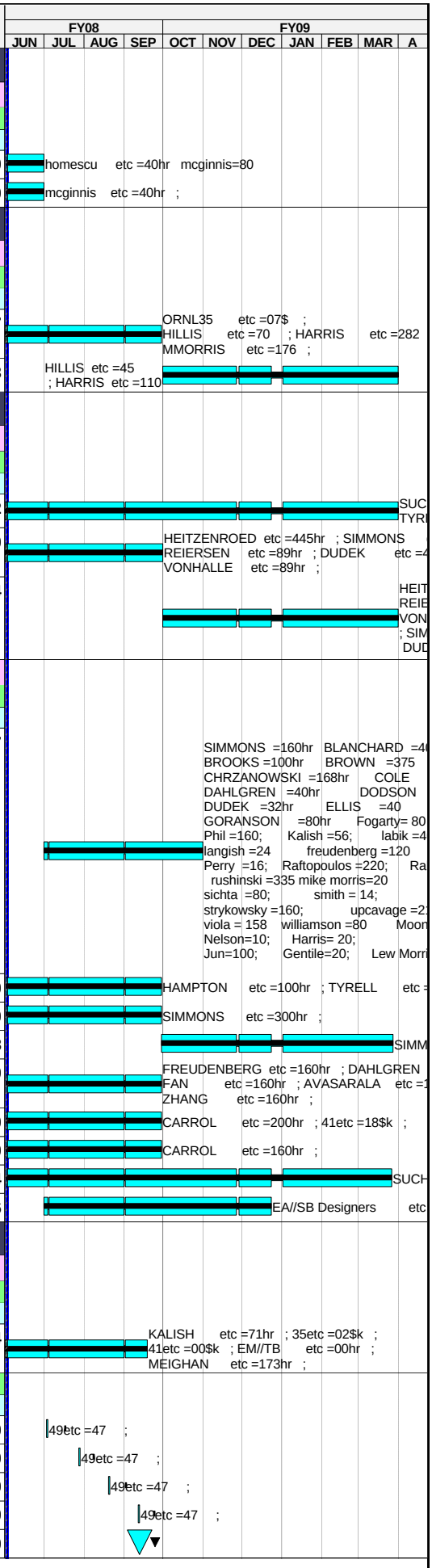
Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
Included Closeout Scope					
Brown					
Job: 1803/1805- FPA Tooling/Constr-BROWN					
Station 3-Modular Coil to VVSA Assembly					
1803S3-4	Generate laser screen trace drawings (1/2 period	15AUG08	05SEP08		10,688.40
1803S3-6	Station 3 simulation detail model	02JUN08*	30JUN08		22,704.00
1803S3-9	Oversite, cost and schedules, reviews	31JAN08A	30SEP08	LOE	3,520.75
1805S3-207	Misc assembly Cost	31JAN08A	30SEP08		5,005.26
Job: 8203 - Design Integration-BROWN					
8203FY08-4	General integration activities	01FEB08A	30SEP08	LOE	13,991.20
Brooks					
Job: 8204 - Systems Analysis-BROOKS					
8204-FY08Z	Syst Analysis, studies & tech assurance FY08 etc	02JUN08*	30SEP08	LOE	41,999.27
Chrzanowski					
Job: 1352 - PF Coil Procurement-CHRZANOWSKI					
PF Coil Fabrication					
141-038.1	PF Conductor cancellation cost	21FEB08A	18JUL08	C	93,150.00
Job: 1408 - MC Winding Supplies-CHRZANOWSKI					
1408-3	Misc and safety supplies ($7k/mo.)	23MAY07A	31JUL08	LOE	7,452.00
1408-6	VPI clean manifold contract	23MAY07A	31JUL08	80	2,484.00
1408-8	Cutting hardware for flange bolts	23MAY07A	31JUL08	LOE	534.06
1408-7	Misc tech shop support	23MAY07A	31JUL08	80	10,108.16
Job: 1451 - Mod Coil Winding-CHRZANOWSKI					
Station 3-Casting Prep & Winding					
P1-170	Instl Chill Plates,Tubing,Bag A6	02JUN08A	03JUL08		57,490.16
Station 5-VPI					
P1-171V	VPI (Station 5) A6	07JUL08	18JUL08		47,514.31
P3-171VM	COMPLETE VPI OF 18th MOD COIL		18JUL08		0.00
Station 1 Post VPI					
P2-171C	Final Clamps & Warm Test (Station1) B6	01JUL08*	23JUL08		24,006.88
P1-171C	Final Clamps & Warm Test (Station1) A6	24JUL08	14AUG08		24,006.88
LOE Oversight & Supervision					
145XSPRV-3	Winding Engineering oversight and supervision	01MAY07A	30SEP08	LOE	42,266.43
145XSPRV-A	Winding Engineering oversight and supervision	01NOV07A	29AUG08	LOE	84,677.10
Job: 1459 - Mod Coil Fabr.Punch List-CHRZANOWSKI					
Punchlist Tech shop/RESA					
PLTS-C5	Grinding & Drill Holes -C5	01MAY08A	29AUG08	83	3,221.98
PLTS-A5	Grinding -A5	01MAY08A	29AUG08	0	6,949.36
PLTS-B5	Grinding -B5	01MAY08A	29AUG08	0	9,476.40
PLTS-A6	Grinding -A6	01MAY08A	29AUG08	20	3,095.62
PLTS-B6	Grinding -B6	01MAY08A	29AUG08	0	9,476.40
PLTS-C6	Grinding & Drill Holes -C6	01MAY08A	29AUG08	23	14,593.66



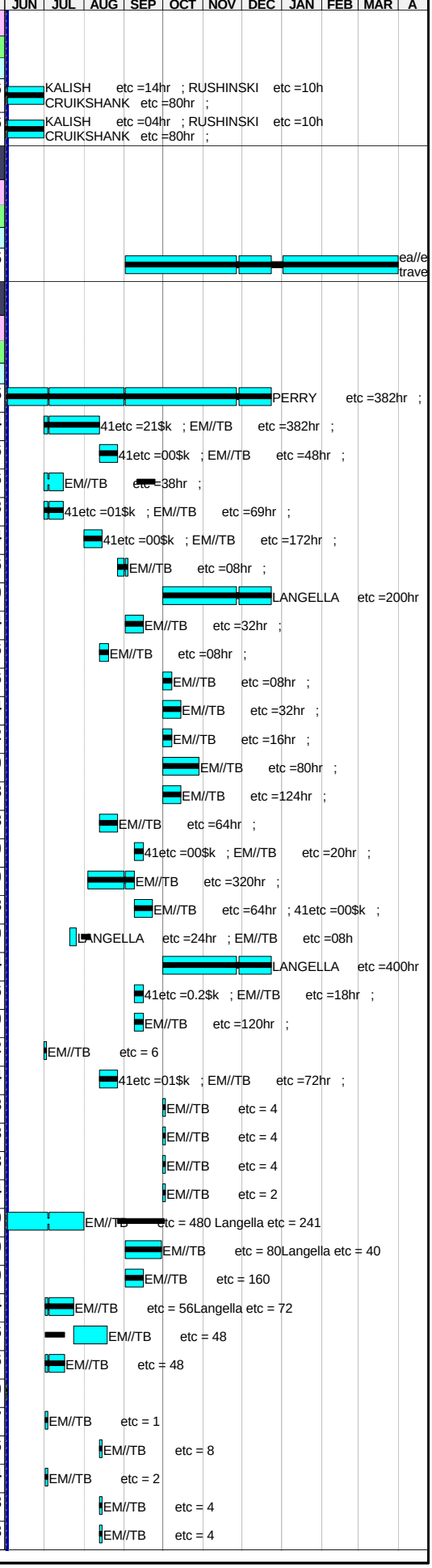
Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
Punchlist- Coil Technicians					
PLCT-A6	Insul,measure,TC,SG other punch list-A6	01OCT07A	31JUL08	36	10,411.40
PLCT-B6	Insul,measure,TC,SG other punch list-B6	01OCT07A	31JUL08	36	10,411.40
Cole					
Job: 1416 - Mod Coil Type AB Fnl Dsn-COLE					
Analysis and closeout documentation					
1416-601	Prepare EM and structural analysis of leads	31JAN08A	30JUN08	70	9,966.00
1416-650	Prepare cooling analysis of lead area	02JUN08*	30JUN08		3,020.00
1416-651	2D cooling analysis for mod colis	02JUN08*	30JUN08		12,080.00
Job: 1421 - Mod Coil Interface Design-COLE					
Inboard Interface-CC					
1421-3155	Resolve C-C shim FDR comments	02JUN08*	30JUN08		18,120.00
1421-9000	Perform shear test	02JUN08*	18JUL08	60	31,710.00
Job: 1901 - Stellarator Core Mngtt&Integr-COLE					
191 - Stellarator Core Management & Oversight					
1901-08	WBS 191 FY08	01OCT07A	29SEP08	LOE	28,889.32
1901-9000	Update drawing tree	01OCT07A	29SEP08	LOE	24,160.00
192 - Stellarator Core Integr & Global Analysis					
1902-08	WBS 192 FY08	01OCT07A	29SEP08	LOE	66,445.34
193 - Risk Mitigation Tasks					
RISK-43	Bolt preload could relax with time.	03MAR08A	26AUG08		7,852.00
Job: 1806 - FP Assembly specs and drawings-COLE					
Station 3-Modular Coil to VVSA Assembly					
1803-301	Station 3 Assembly Specification	02JUL07A	30JUN08	80	3,624.00
1803-305	Station 3 Assembly Drawings	02JUL07A	30JUN08	80	2,416.00
Dahlgren					
Job: 1501 - Coil Structures Design-DAHLGREN					
1501-533	Detail CAD Drawings,BOM	01JUN07A	30JUN08	75	21,319.30
1501-533F	Integrated Stress Analysis	01OCT07A	30JUN08	75	34,286.56
1501-536	Issue dwgs for review		30JUN08*		0.00
1501-549	Update C.S.Support Attacgment Design	01MAY08A	09JUN08	75	2,036.70
1501-562	Prepare Specs for Coil Structure & CSS h/w	24JUN08	30JUN08		3,542.00
1501-537	FDR Prep	24JUN08	30JUN08		12,370.68
1501-541	Coil Support Structures - FDR		30JUN08		0.00
Dudek					
Job: 1431 - Mod. Coil Interface Hardware-DUDEK					
Shims-Inboard					
1431-110	Complete PE007677 with white engr incl rework	02JUN08	27JUN08		12,705.66
Ellis					
Job: 8205 - Dimensional Control Coordin-ELLIS					
Station 3-Modular Coil to VVSA Assembly					
METFY08R	Support FPA Station 2	01FEB08A	30SEP08	LOE	14,889.60
METDCP-3	Dimensional control plans for station 3	01FEB08A	10JUN08	99	4,675.44
STAT3 PREP	Station 3 preparations	01JUL08*	02SEP08		14,168.00



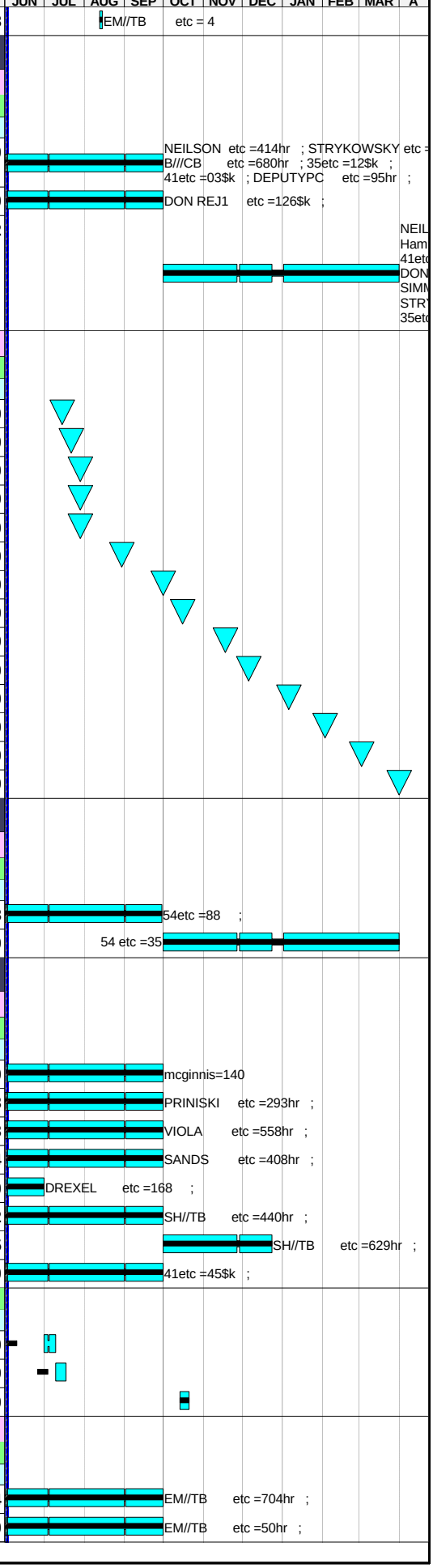
Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
Goranson					
Job: 1601 - Coil Services Design-GORANSON					
161 - LN2 Distribution					
162-900	**Update LN2 models & input to INTRALINK**	02JUN08A	30JUN08	99	**18,120.00**
162-901	**Update Electrical Leads Models & input to INTRAL**	02JUN08A	30JUN08	99	**6,040.00**
Harris					
Job: 8102 - NCSX MIE Management ORNL-HARRIS					
810.105XX	**Project Management Office ORNL FY08 (LOE)**	01FEB08A	29SEP08	LOE	**100,619.47**
810.105Z	**Project Management Office ORNL FY09 (LOE)**	01OCT08*	31MAR09	LOE	**35,930.73**
Heitzenroeder					
Job: 8202 - Engr Mgmt & Sys Eng Sprt-HEITZENROED					
8205DC	**document control & admin support**	01FEB08A	31MAR09	LOE	**23,630.52**
8205FY08.2	**Engr mgt & systems engr FY08**	01FEB08A	30SEP08	LOE	**181,477.20**
8205FY09	**Engr mgt & systems engr FY09**	01OCT08*	31MAR09	LOE	**157,899.44**
Job: 8221 -Documentation Closeout-HEITZENROEDER					
Closeout Documentation					
8221-100	**Technical data collection**	01JUL08*	31OCT08		**626,239.87**
8221-251	**Tech presentation/paper collection**	02JUN08	29SEP08		**9,902.00**
8221-301	**Guidance to collect data**	02JUN08	29SEP08		**53,130.00**
8221-305	**Organizing and posting data**	30SEP08	27MAR09		**56,203.18**
8221-401	**Finalizing and archiving key analyses/reports**	02JUN08	29SEP08		**137,504.00**
8221-501	**dell server, software, setup (non project cost**	02JUN08	29SEP08		**0.00**
8221-555	**Comp. div support of web (non project cost)**	02JUN08	29SEP08		**0.00**
8221-575	**Archiving doc & files in ops center**	02JUN08	26MAR09		**18,009.74**
8221-700	**As-built Drawing Updates**	01JUL08*	23DEC08		**232,562.06**
Kalish					
Job: 1361 - TF Fabrication-KALISH					
TF Title III and Fabrication Oversight					
131-033C	**Title III engr,inspection, support**	02JAN08A	18SEP08	LOE	**37,543.84**
TF Fabrication Contract					
1361C-115	**Fab, Test & Deliver Coil #15**	03JUL08*	03JUL08		**47,220.00**
1361C-116	**Fab, Test & Deliver Coil #16**	28JUL08*	28JUL08		**47,220.00**
1361C-117	**Fab, Test & Deliver Coil #17**	20AUG08*	20AUG08		**47,220.00**
1361C-118	**Fab, Test & Deliver Coil #18**	12SEP08*	12SEP08		**47,220.00**
1351-195X	**ALL TF COILS DELIVERED**		12SEP08		**0.00**



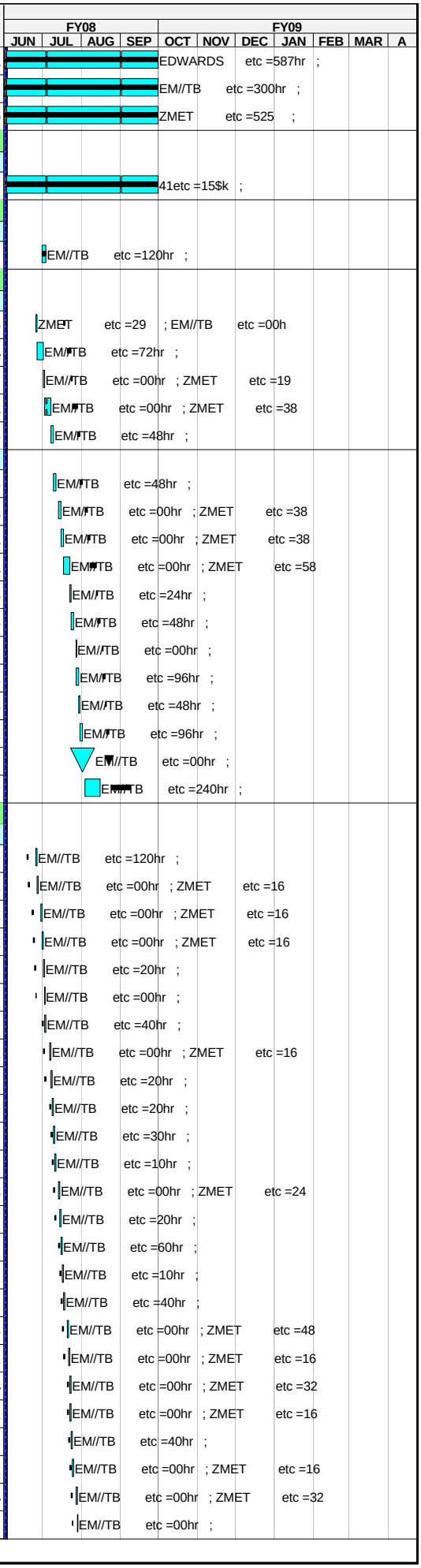
Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
Job: 1354 - Trim Coil Design &Procurement-KALISH					
Trim Coil **Updated estimate**					
TRIM-170	Complete Trim Coil Detailed Drawings	25MAR08A	30JUN08	80	12,769.36
TRIM-200	Assy drawings & parts list	01APR08A	30JUN08	90	10,998.36
Neilson					
Job: 8222 - Manuscripts and Papers - NEILSON					
Prepare Closeout report					
8222-900	Manuscripts, journal & papers (40 papers@40hrs)	02SEP08*	31MAR09		299,600.15
Perry					
Job: 8220 - Equipt Save & Facility Restora-PERRY					
Safe and store NCSX hardware assets					
8220-201	Coordination and oversight	02JUN08	23DEC08		60,133.75
8220-205	NCTC floor penetrations & PLT water hdr removal	01JUL08A	12AUG08		56,248.54
8220-209	Secure platform parts from CAS Bldg to NCTC	13AUG08	26AUG08		4,163.16
8220-215	Secure TF Coils from Dsite MG to NCTC	01JUL08*	15JUL08		3,000.86
8220-219	Electr trays & hw from D-site yard to dsite pad	01JUL08*	15JUL08		6,194.13
8220-223	Items f/TFTR bsmnt (incl spare MC cond) to NCTCB	01AUG08*	14AUG08		13,831.24
8220-227	Portable AC units to Dsite crib	27AUG08	03SEP08		631.76
8220-231	Drawing closeouts and field follow-up	01OCT08*	23DEC08		27,614.00
8220-235	Large and Small shield block to Dsite pad	02SEP08*	15SEP08		2,527.04
8220-239	Machine mock-up to NCTC	13AUG08	19AUG08		631.76
8220-243	Welding machines to RESA	01OCT08*	07OCT08		668.56
8220-247	Tools to Csite crib	01OCT08*	14OCT08		2,674.24
8220-251	Measuring Equipment to MU Shop	01OCT08*	07OCT08		1,337.12
8220-255	Inventory parts,material, tools to new location	01OCT08*	28OCT08		6,685.60
8220-409	Crates,cabinets,parts shelves f/TFTRTC to NCTCB	01OCT08*	14OCT08		10,362.68
8220-415	Coil winding station to NCTC	13AUG08	26AUG08		5,054.08
8220-419	MC bolts (incl crate) to NCTCB	09SEP08	15SEP08		2,076.20
8220-427	Assemble 4 remaining MC 3 packs	04AUG08	08SEP08		25,270.40
8220-431	Transport MC 3 packs (6) to NCTC	09SEP08	22SEP08		5,302.48
8220-501	Autoclave- Safe all AC power	21JUL08	25JUL08		3,762.80
8220-505	Autoclave-Removal and store Dsite pad & NCTCB	01OCT08*	23DEC08		154,843.44
8220-901	VV Diagnostic parts incl fab crates to NCTCB	09SEP08*	15SEP08		1,669.86
8220-903	Move tool crib from C-site back to D-Site	09SEP08*	15SEP08		9,476.40
8220-605	VV Spool piece crates to NCTCB	01JUL08*	02JUL08		473.82
8220-423	VVSA's (incl port extension crates) to NCTC	13AUG08	26AUG08		7,176.24
8220-609	Yellow wedge stands to NCTC	01OCT08*	02OCT08		334.28
8220-613	Wedge cover plates to NCTC	01OCT08*	02OCT08		334.28
8220-617	5 ton lift beam to RESA	01OCT08*	02OCT08		334.28
8220-621	14 ton lift beam to RESA	01OCT08*	02OCT08		167.14
8220-625	Remove coil winding rooms & dispose	02JUN08A	31JUL08	60	27,686.40
8220-633	Equipment in MU machine shop-Electrical to RESA	02SEP08*	29SEP08		11,536.00
8220-641	Equipment in MU machine shop-Mechanical to RESA	02SEP08*	15SEP08		12,635.20
8220-645	Cryo pump skid- Electrical to NCTCB	02JUL08*	23JUL08		13,815.44
8220-653	Cryo pump skid- Mechanical to NCTCB	24JUL08*	18AUG08		3,790.56
8220-657	Cryostat-dispose	02JUL08*	16JUL08		3,790.56
8220-661	Interlocked cryo room-leave in place	02JUN08*	02JUN08		0.00
8220-665	Spherical bearings (Dahlgren) to NCTCB	02JUL08*	03JUL08		78.97
8220-669	Prototype castings to NCTC	13AUG08	14AUG08		631.76
8220-673	Prototype VV cross sections-Scrap	02JUL08*	03JUL08		157.94
8220-677	TF coil fabrication fixtures to NCTC-VPI fixture	13AUG08	14AUG08		315.88
8220-681	TF coil fabrication fixtures to NCTC-Mandrel	13AUG08	14AUG08		315.88



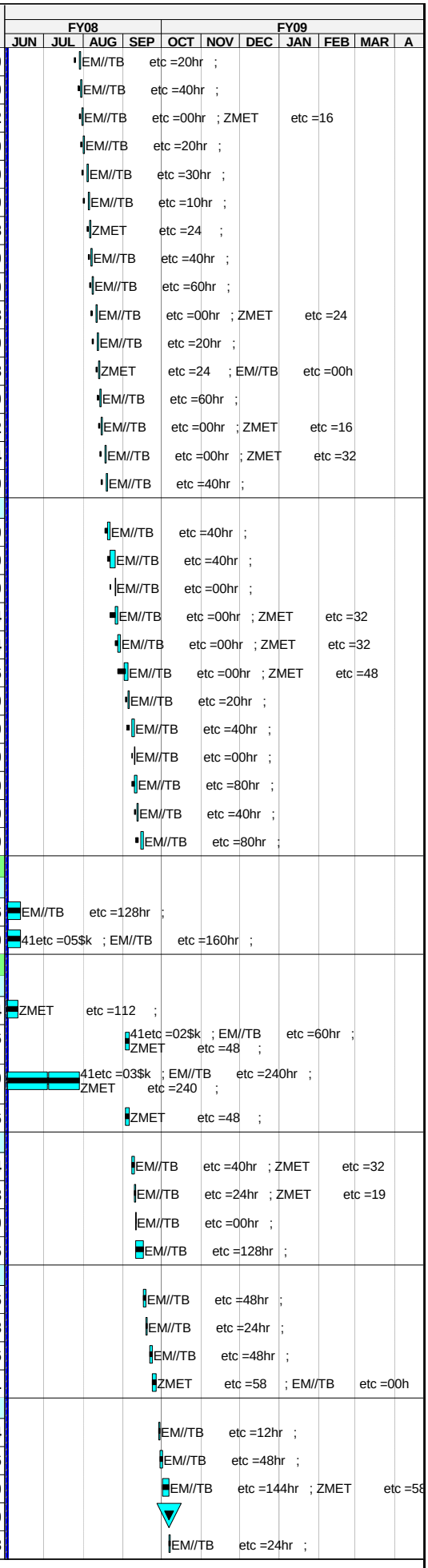
Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
8220-685	TF coil fabrication fixtures to NCTC-Misc fixtur	13AUG08	14AUG08		315.88
Rej					
Job: 8101 - Project Management &Control-REJ					
810.900	Project Management Office PPPL FY08 (LOE)	01OCT07A	30SEP08	LOE	216,292.20
810.9005A	Project Management Office PPPL fy08 etc	02JUN08	30SEP08	LOE	125,600.00
810.901	Project Management Office PPPL FY09 (SA LOE)	01OCT08*	31MAR09	LOE	290,785.02
Job: 8221 -Documentation Closeout-HEITZENROEDER					
Prepare Closeout report					
8221-602	Draft table of contents out for review		14JUL08*		0.00
8221-604	DOE concurrence on table of contents		21JUL08*		0.00
8221-606	Final Table of contents issued		28JUL08*		0.00
8221-608	Chapter & Appendices writers assigned		28JUL08*		0.00
8221-610	Writer guidance prepared & communicated		28JUL08*		0.00
8221-612	Chapter outlines finalized		29AUG08*		0.00
8221-614	Chapter Draftes complete		30SEP08*		0.00
8221-616	Chapter Draft reviews complete		15OCT08*		0.00
8221-618	Chapters Complete		17NOV08*		0.00
8221-636	Executive summary complete		05DEC08*		0.00
8221-639	Draft Report complete		05JAN09*		0.00
8221-642	Report Reviews Complete		02FEB09*		0.00
8221-646	DOE Concurrence		02MAR09*		0.00
8221-649	Final Report Issued		31MAR09*		0.00
Strykowsky					
Job: 8998 - Allocations-STRYKOWSKY					
99.08	PPPL Allocations FY08 LOE	01OCT07A	29SEP08	LOE	142,323.48
99.09C	PPPL Allocations FY09 LOE	01OCT08*	31MAR09	LOE	59,465.00
Viola					
Job: 1802 - FP Assy Oversight&Support-VIOLA					
Oversight and Supervision					
1802ORNL02	ORNL Title III field period assy station 2/3	02JUN08	30SEP08	LOE	13,860.00
R1802-003	Metrology Engr Super FY08	01OCT07A	30SEP08	LOE	45,122.13
R1802-007	FPA Management FY08	01OCT07A	30SEP08	LOE	85,747.73
R1802-009	PU Title III support	02JUN08	30SEP08	LOE	62,742.24
R1802-010	Drexel co-op student support	02JUN08	30JUN08	LOE	2,520.00
R1802-015	HP Coverage in the TFTR TC LOE FY08	01OCT07A	30SEP08	LOE	53,157.42
R1802-016	HP Coverage in the TFTR TC LOE FY09	01OCT08*	23DEC08	LOE	36,276.45
1802MISC	Misc materials,tools, GSA vehicle,rigging	01FEB08A	30SEP08	LOE	55,890.00
Station 3 procedures,JHA,ACC,Training,Prep					
R1802-309	JHA completed	01JUL08	09JUL08		0.00
R1802-315	Pre-job brief completed	10JUL08	17JUL08		0.00
R1802-320	Update FPA cost estimate for FPA station 2&3	14OCT08	20OCT08		0.00
Job: 1810 - Field Period AssyStation 1,2,3 VIOLA					
General Assy Support					
R1810-003	LOE Crane support, fixture setupfor FY08	01OCT07A	30SEP08	LOE	55,605.94
R1810-025	Crane & Rigging inspections	01FEB08A	30SEP08	LOE	3,948.50



Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
R1810-007	LOE Field Supervision for FY08	01OCT07A	30SEP08	LOE	79,035.61
R1810-2001	Misc Hardware and hardware rework (1/2 fte loe)	01FEB08A	30SEP08	LOE	23,691.00
S21-4.02	Perform routine metrology set-up and checks (loe	01FEB08A	30SEP08	LOE	61,094.25
Setup					
R1810-2034	Misc Tool and Hardware	02JUN08	30SEP08	LOE	18,630.00
Pre-Measuring and fitup checks					
Pre measurement of MCHP A2,B2,C2 flanges					
2-2-2.99	Drill Stycast fill holes C2	01JUL08*	03JUL08		9,476.40
Station 2 MC subassy A1B1C1					
AB-C MC Assembly					
2-1-7.35	After tightening hardware, meas position of monu	26JUN08*	26JUN08		3,351.46
2-1-7.36	Weld B / C nose region solenoid side	27JUN08	01JUL08		5,685.84
2-1-7.37	Measure positions of all monuments	02JUL08	02JUL08		2,234.30
2-1-7.38	Back office of above results & INSTALL wing supp	03JUL08	07JUL08		4,468.61
2-1-7.39	Fill all lose bushings with Stycast 2850FT	08JUL08	09JUL08		3,790.56
Stycast shim bags & final measurements					
2-1-8.01	Fill all wing bladders & cure	10JUL08	11JUL08		3,790.56
2-1-11.01	Measure tooling balls on all coils.	14JUL08	15JUL08		4,468.61
2-1-11.02	Install or identify three primary fiducials	16JUL08	17JUL08		4,468.61
2-1-11.03	Scan "B" flange Type-C coil & interfacing base	18JUL08	22JUL08		6,702.91
2-1-11.04	Measure bolt length on all tension fasteners	23JUL08	23JUL08		1,895.28
2-1-11.05	Perform Electrical Megger test on each coil	24JUL08	25JUL08		3,790.56
2-1-11.06	Mark part for identification	28JUL08	25JUL08		0.00
2-1-11.07	Install lift support beams	28JUL08	29JUL08		7,581.12
2-1-11.08	Remove from stand & measure weight of completed	30JUL08	30JUL08		3,790.56
2-1-11.09	Move to holding area.	31JUL08	01AUG08		7,581.12
S21-11.07M	Complete 1st MCHP Assy (Sta 2)		01AUG08		0.00
2-1-11.10	Lift upper wedge & reinstall & grout at Assembly	04AUG08	15AUG08		18,952.80
Station 2 MC subassy A2B2C2					
AB-C MC Assembly					
2-2-7.01	lift (A-B) coil, along with fixture, onto anot	26JUN08*	26JUN08		9,476.40
2-2-7.02	Select a subset of monuments for initial alignm	27JUN08	27JUN08		1,861.92
2-2-7.03	Align set of monuments selected in 7.02.	30JUN08	30JUN08		1,861.92
2-2-7.04	Establish a set of global monuments	01JUL08	01JUL08		1,861.92
2-2-7.05	Mark nose shim locations & puck locations.	02JUL08	02JUL08		1,579.40
2-2-7.06	Place initial set shims (4-8) on Type-B	03JUL08	02JUL08		0.00
2-2-7.08	Lower mating "C" coil into position.	03JUL08	03JUL08		3,158.80
2-2-7.081	Perform alignment "C" coil tooling balls	07JUL08	07JUL08		1,861.92
2-2-7.09	Install jack screws & dial indicators	08JUL08	08JUL08		1,579.40
2-2-7.10	Position coil within ±.002"	09JUL08	09JUL08		1,579.40
2-2-7.11	Install shims studs, & "wiggle"	10JUL08	10JUL08		2,369.10
2-2-7.12	Torque50% of final value.	11JUL08	11JUL08		789.70
2-2-7.13	Measure position of all monuments	14JUL08	14JUL08		2,792.88
2-2-7.14	Measure shim puck height	15JUL08	15JUL08		1,579.40
2-2-7.15	remove puck locating rings & install all nose s	16JUL08	16JUL08		4,738.20
2-2-7.16	"Lightly" tack weld nose flex shims	17JUL08	17JUL08		789.70
2-2-7.17	remove "C" coil & place it on a separate fixtur	18JUL08	18JUL08		3,158.80
2-2-7.18	Recheck part alignment & weld all Type-B flex s	21JUL08	21JUL08		5,585.76
2-2-7.19	After welding "B" coil nose shims recheck align	22JUL08	22JUL08		1,861.92
2-2-7.20	Back office assessment of part after weld	23JUL08	23JUL08		3,723.84
2-2-7.21	Measure "C" fiducials	23JUL08	23JUL08		1,861.92
2-2-7.22	Weld all Type-C (A-flange) flex shims plasma sid	24JUL08	24JUL08		3,158.80
2-2-7.23	After welding determine metrology acceptance	25JUL08	25JUL08		1,861.92
2-2-7.24	Back office assessment	28JUL08	28JUL08		3,723.84
2-2-7.25	Remove shims for alignment mating coil	29JUL08	28JUL08		0.00



Activity ID	Activity Description	Forecast Start	Forecast Finish	% cmplt	ETC
2-2-7.07	Place unfilled shim bags in wing areas	29JUL08	29JUL08		1,579.40
2-2-7.26	Lower mating “C” coil into position.	30JUL08	30JUL08		3,158.80
2-2-7.261	alignment “C” coil tooling balls	31JUL08	31JUL08		1,861.92
2-2-7.27	position coil accurately in x, y, & z directio	01AUG08	01AUG08		1,579.40
2-2-7.28	Install shims;studs,, & "wiggle"	04AUG08	04AUG08		2,369.10
2-2-7.29	Torque50% of final value.	05AUG08	05AUG08		789.70
2-2-7.30	Measure position of all monuments	06AUG08	06AUG08		2,792.88
2-2-7.31	Adjust shims locally. Re-torque all studs50%.	07AUG08	07AUG08		3,158.80
2-2-7.32	Install bushing. Replace nut & tighten back50%	08AUG08	08AUG08		4,738.20
2-2-7.33	After super bolt tightening, measure position	11AUG08	11AUG08		2,792.88
2-2-7.34	Tighten all bolts to final torque.	12AUG08	12AUG08		1,579.40
2-2-7.35	After tightening hardware, meas position of monu	13AUG08	13AUG08		2,792.88
2-2-7.36	Weld B / C nose region solenoid side	14AUG08	14AUG08		4,738.20
2-2-7.37	Measure positions of all monuments	15AUG08	15AUG08		1,861.92
2-2-7.38	Back office of above results & INSTALL wing supp	18AUG08	18AUG08		3,723.84
2-2-7.39	Fill all lose bushings with Stycast 2850FT	19AUG08	19AUG08		3,158.80
Stycast shim bags & final measurements					
2-2-8.01	Fill all wing bladders & cure	20AUG08	21AUG08		3,158.80
2-2-8.02	Inject stycast in all shim spaces	22AUG08	25AUG08		3,158.80
2-2-10.0	Complete local service & interface details	26AUG08	25AUG08		0.00
2-2-11.01	Measure tooling balls on all coils.	26AUG08	27AUG08		3,723.84
2-2-11.02	Install or identify three primary fiducials	28AUG08	29AUG08		3,723.84
2-2-11.03	Scan “B” flange Type-C coil & interfacing base	02SEP08	04SEP08		5,585.76
2-2-11.04	Measure bolt length on all tension fasteners	05SEP08	05SEP08		1,579.40
2-2-11.05	Perform Electrical Megger test on each coil	08SEP08	09SEP08		3,158.80
2-2-11.06	Mark part for identification	10SEP08	09SEP08		0.00
2-2-11.07	Install lift support beams	10SEP08	11SEP08		6,317.60
2-2-11.08	Remove from stand & measure weight of completed	12SEP08	12SEP08		3,158.80
2-2-11.09	Move to holding area.	15SEP08	16SEP08		6,317.60
Station 3 Setup/Preparations/General					
Misc Prep activities					
R1810-3112	Load Test 3 legged actuator lift fixtur	03JUN08*	12JUN08		10,108.16
R1810-3113	Procure wire rope slings & 6 17ton shackles	03JUN08*	12JUN08		18,845.20
Station 3-Assemble Mod Coils and VVSA-FP#1					
Set-up and Prep					
3-1-1.01	transfer CAD models	02JUN08*	10JUN08		13,033.44
3-1-1.02	Install Station 3 site monuments	03SEP08	05SEP08		12,807.96
3-1-1.021	Design, fabricate and calibrate photogrammetry	02JUN08A	28JUL08	50	25,303.80
3-1-1.07	Reconfirm Leica position	03SEP08	05SEP08		5,585.76
Install Laser Screen					
3-1-6.02	Place all laser screens	08SEP08	09SEP08		6,882.64
3-1-6.03	Turn each lasers on & measure each laser source	10SEP08	10SEP08		4,129.58
3-1-6.04	Print path on milar paper	11SEP08	10SEP08		0.00
3-1-6NEW	Dry-run MCHP thru laser screen path without VVSA	11SEP08	16SEP08		10,108.16
Install Vacuum Vessel					
3-1-7.02	Install VV NBI port support stand.	17SEP08	18SEP08		3,790.56
3-1-7.03	Install VVSA to base support and make connection	19SEP08	19SEP08		1,895.28
3-1-7.04	take tooling ball readings and secure VVSA	22SEP08	23SEP08		3,790.56
3-1-7.05	Scan VV surface and compare data	24SEP08	26SEP08		6,702.91
Trial fit MCHP over VV					
3-1-8.01	Install any bumper protection components on the	29SEP08	29SEP08		947.64
3-1-8.03	Install MCHP lift fixture, disengage leveler	30SEP08	01OCT08		3,900.96
3-1-8.05	Move right MCHP over the VV	02OCT08	06OCT08		19,130.40
3-1-8.05M	MCHP test fit over VVSA Complete		06OCT08		0.00
3-1-6.05	Disengage the right MCHP & position on floor	07OCT08	07OCT08		2,005.68

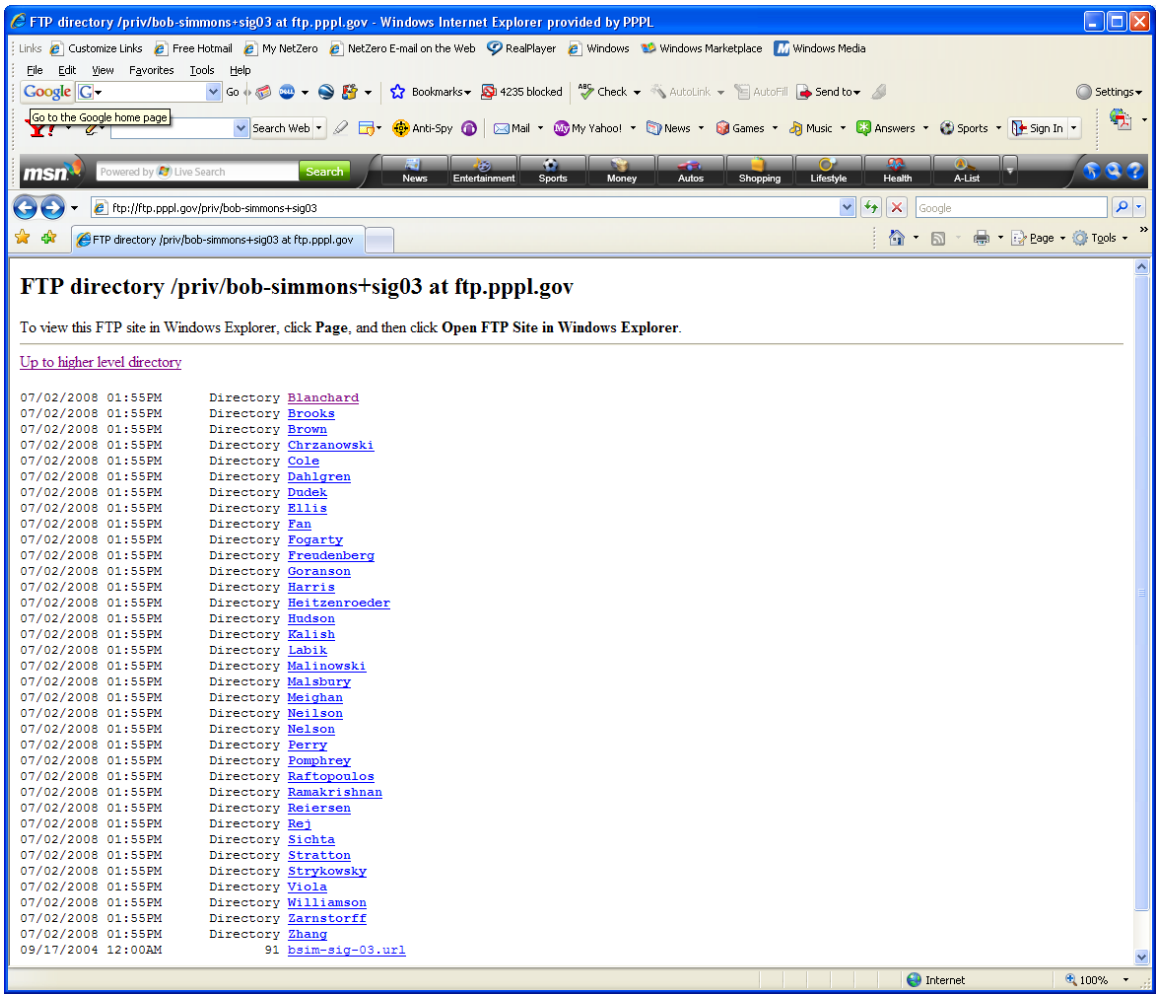


Guidelines for Posting/Archiving Information

The NCSX Engineering Web page will be the final repository for posting/archiving pertinent NCSX design information. ***The goal is to have all files that are currently archived in other sites (e.g., department or ftp sites) be copied over to the NCSX Engineering Web.*** To facilitate this, a special ftp folder has been established on the PPPL anonymous ftp private site to permit ease in transferring information from your computer to the NCSX Engineering Web. This site can be accessed by opening your web browser and typing in:

ftp://ftp.pppl.gov/priv/bob-simmons+sig03

I have tentatively set up folders in your name with and also included subfolders listing all the potential jobs that you may desire to archive files to. If the subfolder is not applicable, just let me know. Below are is the top screen shot of this site:



As discussed when the "Checklist for NCSX Documentation and Records Archiving", information already approved and posted, need not be duplicated. However, any appropriate backup information and analyses (and any backup ANYSY and/or NASTRAN models) that may prove useful in understanding the information posted, should be gathered and archived (even if in its native format). ***It is the responsibility of***

Guidelines for Posting/Archiving Information

each Job Manager to identify what information should be archived. This should not be just a "data dump" or your computer! For example, if a final design is posted, while the intermediate evolution of the design may be interesting, unless the Job Manager determines that this evolution is vital to understanding the final design selected, that information would not be a candidate for archiving.

Please archive the data that you believe should be retained in this ftp site folder and proceed to post that information in appropriate job subfolders (or other descriptive name). Please send me an e-mail when you have posted the info with a brief description to assist me in posting to the correct site. In addition to assist future readers to understand what is being archived, it is very important that each of you prepare a brief "read me" file that describes in general what is being archived in each folder you post. I will include this "read me" file in each folder that I post on the NCSX Engineering Web. All your archiving should be completed not later than September 30, 2008. Also, please do not forget your closeout notes.

Please note that since the ftp site has only limited security (in that you need to know the specific site name), once you have posted the information and I have reviewed it, I will then remove it from the ftp site and post it in the appropriate folder on the NCSX Engineering Web.

For those ORNL or PPPL personnel not having PPPL computer accounts (e.g., Goranson, etc.), you can post the information on an ftp outgoing site and then e-mail me the appropriate URL.

TEMPLATE FOR CLOSE OUT NOTE

GUIDELINE/FORMAT

The following guidelines are intended to provide a template for each job manager to use when preparing their closeout notes A closeout note is required for each and every job that was in process at the time of NCSX cancellation or will be completed as part of the MIE Project closeout plan. (e.g, items with either yellow or green background). Those jobs already completed and/or closed prior to cancellation, will not require a closeout note, except as specifically requested – such as lessons learned from the VVSA or Modular Coil Winding Form contracts. A draft sample (Job 1601-161 from Paul Goranson) is included for information and to provide a good concept of what is required.

TEMPLATE

TO: **RLM and/or Mike Cole for ORNL Scope**
FROM: **Job Manager**

SUBJECT: **Identify Job Title and Number**

Date:

Scope
This section should describe the scope of the job. Should include the entire scope (whether or not it was completed), including design, key R&D and/or prototyping, procurement, fabrication, and Title III follow-up activities. Should also describe what constitutes "completion" of this job.

Should also identify future jobs anticipated related to this WBS.

Status
Provide the status of work completed at the time of closeout. This should be a more general overview status – more details will be provided below.

Interfaces
Define key interfaces and any changes anticipated at time of closeout. Basically, should address the interfaces defined in the SRD and indications of where these interfaces are defined. It is important to define those areas in which interfaces are not yet defined.

Specifications
Identify specifications (BSPEC or CSPEC) completed or in progress at time of closeout. If completed, identify where that is posted. A formal FMECA was not anticipated but a failure mode and mitigation plan was included in the PDR.

TEMPLATE FOR CLOSE OUT NOTE

Schematics and PIDs

Identify schematics and other drawing completed or in progress at closeout. To the extend that these schematics/P&IDs have been converted to drawings, if they are already included no action is needed. However, if these schematics/P&IDs are represented on sketches or presentations, these should be identified for posting (or reference made to where they already exist on the web).

Models

Identify what Pro E models were completed and posted – be specific as possible. Provide name of model and file number in INTRALINK.

For those models not yet completed or in process of being updated, please identify their file number for potential retrieval from INTRALINK.

Drawings

Identify drawings or series of drawings that are completed and posted – be specific as possible. If all in the PPPL drawing listing for NCSX, merely state that.

For those drawings not yet completed or in process of being updated, please identify their file number for potential retrieval from INTRALINK – if possible, identify specific drawing numbers and status (e.g, rev # or in process).

Analyses

Provide a listing of analyses and their purpose that were completed and fully checked and posted. Also include any draft analyses in progress -- we likely will post these also.

Testing

Identify any testing completed and a summary of the status/results.

Costs

If there are any pending cost updates, use this section to identify them with a brief description of what you feel this adjustment is necessary.

Remaining Work

- Pressure drop in the corrugated hosing was based on Manufacturer's estimates but remain un-collaborated; it may well be much higher than the estimates. An R&D program to measure the actual pressure drops in the hoses using both water and LN2 was planned to benchmark the calculations. Changes in pressure drop would not affect the design.
- The G10 breaks were to be pressure tested under actual operating conditions, i.e. LN2 at 10 atmospheres.
- The control valves and pressure gauges had not been chosen. Suggestions for possible choices were made by participants in the PDR.
- Thermal analysis of the MC Lead Blocks was to be performed to determine whether they required cooling. The coolant would be supplied by one or more of the spare bibs included on the PF ring manifolds.

TEMPLATE FOR CLOSE OUT NOTE

Note: Identify any pending work that should be archived in this section.

Lessons Learned: *Identify any things you would have done differently or lessons learned.*

Conclusion: *Provide any recommendations you might have for your successor in completing this work.*