Nuclear Energy Research Initiative (NERI) Program
DE-FG03-99SF21898/A000
Technical Progress Report

Narrative:

Project Initiation Activities (PM 1.4 through PM 1.12)

1. Status: Project initiation was completed and all sub-contractors are engaged in their work scopes.

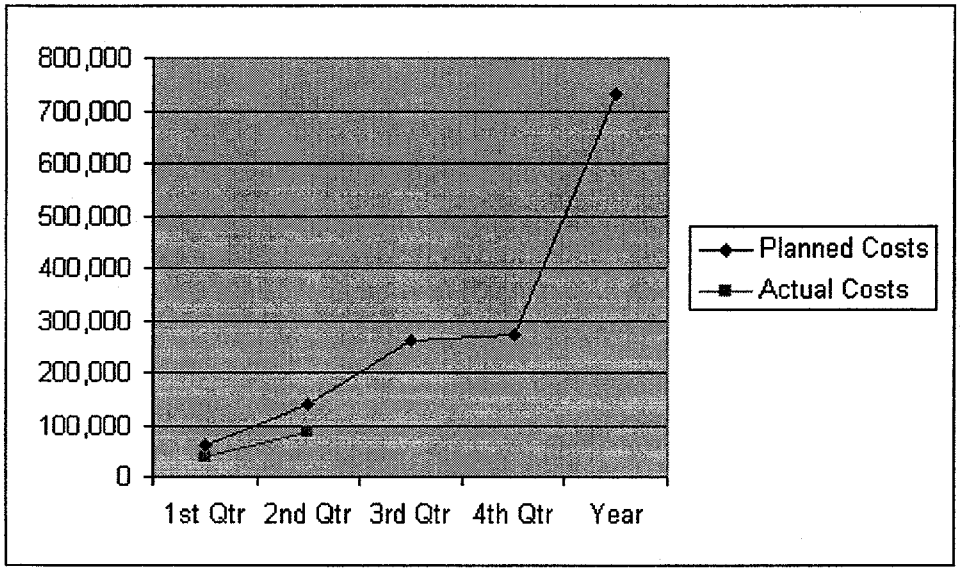
2. Issues/Concerns: None

Year One Research Activities (Y-1.1 through Y-1.11)

1. Status: The research activities have been underway. We have located a large body of source material from aerospace, shipbuilding and manufacturing businesses that is serving the basis for identifying improvement methodologies. Our work on developing the three models proposed to capture the extent of the improvement possibilities has been ongoing.

2. Issues/Concerns: None.

Cost Performance:



02/23/00

DISCLAIMER

Nuclear Energy Research Initiative (NERI) Program
DE-FG03-21898/A000
Technical Progress Report

Status Summary of NERI Tasks - Year 1:

Year 1 Project Initiation Activities

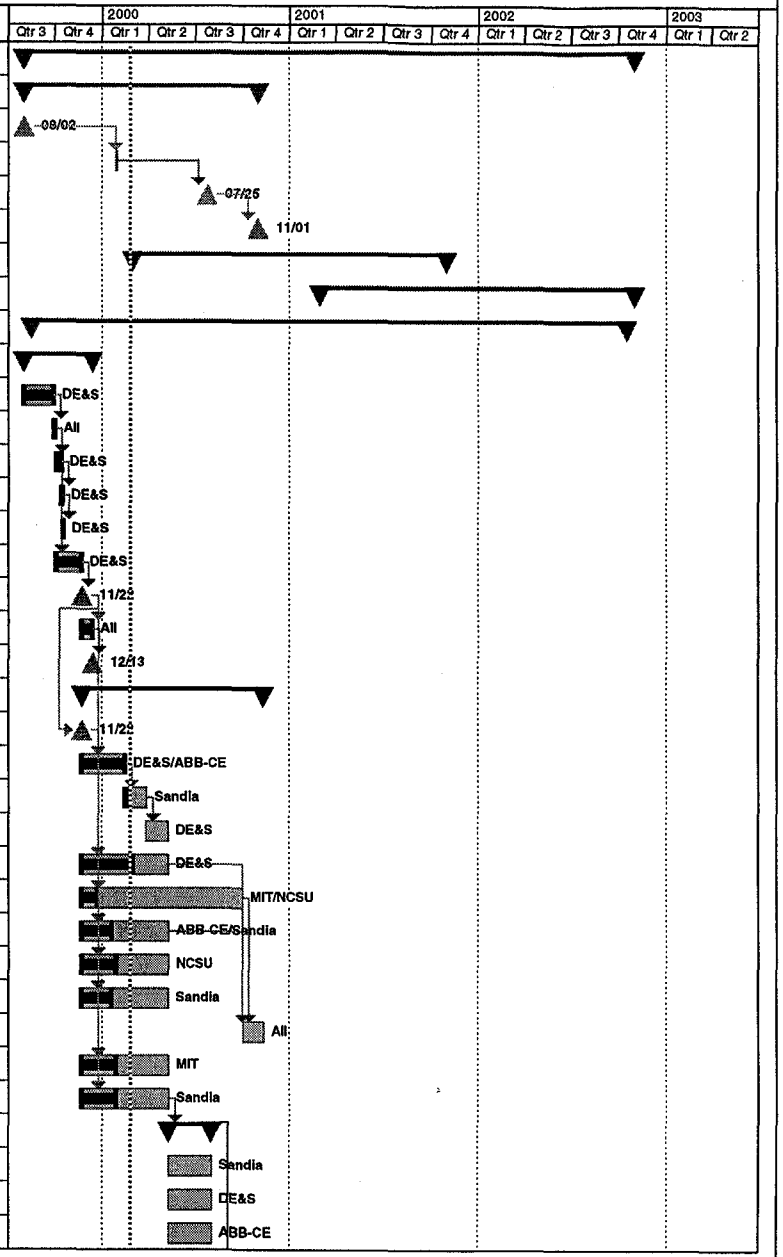
Milestone/Task Description	Planned Completion Date	Actual Completion Date
Project Kick Off Meeting	10/01/99	10/01/99
Revised PM Plan and Issue	10/14/99	10/14/99
Project Web Site On Line	10/15/99	10/02/99
Issue Detailed Schedule	10/18/99	10/18/99
Adjust Tasks to Schedule and Budget	12/10/99	12/10/99
Complete Project Startup Activities	12/10/99	12/10/99

Year 1 Project Research Activities

Milestone/Task Description	Planned Completion Date	Actual Completion Date
Y-1.1 Deconstruct DPCIT	5-30-00	
Y-1.2 Develop Metrics	5-30-00	
Y-1.3 Develop 3D Model	5-30-00	
Y-1.4 Research other Industries' Practices	5-30-00	
Y-1.5 Examine Modularity	9-30-00	
Y-1.6 Examine Key Technologies	5-30-00	
Y-1.7 Eliminate Excess Margin	5-30-00	
Y-1.8 Requirements for Shorten Cycles	5-30-00	
Y-1.9 System Dynamics	5-30-00	
Y-1.10 Finite Element Code Links	5-30-00	
Y-1.11 Containment Margins	5-30-00	

NERI DE-FC03-99SF21898/A000 Project Milestones Schedule (11/19/99)

ID	WBS #'s	Task Name	Duration	Start	Finish	Predecesso	Task Leader	Organizations
1		**Project Management & Reporting**	**849 days**	**Mon 08/02/99**	**Fri 11/01/02**		**Bernier**	**DE&S**
2	**PM 1**	**Year 1 Overview Actitivites**	**327 days**	**Mon 08/02/99**	**Wed 11/01/00**			
3	PM 1.1	Program Year 1 Start	0 days	Mon 08/02/99	Mon 08/02/99			
4	PM 1.2	Mid Project Year Meeting	2 days	Thu 01/27/00	Fri 01/28/00	3		
5	PM 1.3	Issue Year 1 Topical Report	0 days	Tue 07/25/00	Tue 07/25/00	4		
6	PM 1.4	Submit Year 1 form 269	0 days	Wed 11/01/00	Wed 11/01/00	5		
7	**PM 2**	**Year 2 Overview Activities**	**436 days**	**Wed 03/01/00**	**Thu 11/01/01**			
14	**PM 3**	**Year 3 Overview Activities**	**436 days**	**Thu 03/01/01**	**Fri 11/01/02**			
21	**PM 4**	**Quarterly Reports Includes SF 272**	**827 days**	**Mon 08/16/99**	**Tue 10/15/02**		**Bernier**	**DE&S**
73		**Project Initiation Activities**	**96 days**	**Mon 08/02/99**	**Mon 12/13/99**		**O'Connell**	**DE&S**
74	PM 1.4	Project Organization Task	43 days	Mon 08/02/99	Wed 09/29/99		O'Connell	DE&S
75	PM 1.5	Project & Year 1 Kick Off Meeting	2 days	Thu 09/30/99	Fri 10/01/99	74	O'Connell	All
76	PM 1.6	Revised Project Management Manual and Issue to Team	9 days	Mon 10/04/99	Thu 10/14/99	75	Bernier	DE&S
77	PM 1.7	Put Project Coordination Web Site On Line	1 day	Fri 10/15/99	Fri 10/15/99	76	O'Connell	DE&S
78	PM 1.8	Publish Project Directory Information	1 day	Mon 10/18/99	Mon 10/18/99	77	Bernier	DE&S
79	PM 1.9	Develop Year 1 Detailed Project Schedule	36 days	Mon 10/04/99	Mon 11/22/99	75	O'Connell	DE&S
80	PM 1.10	Issue Year 1 Detailed Project Schedule	0 days	Mon 11/22/99	Mon 11/22/99	79	O'Connell	DE&S
81	PM 1.11	Adjust Tasks to Schedule and Budget Changes	15 days	Tue 11/23/99	Mon 12/13/99	80	O'Connell	All
82	PM 1.12	Complete Project Start Up Activities	0 days	Mon 12/13/99	Mon 12/13/99	81	O'Connell	DE&S
83	**Y-1**	**Year 1 Detailed Activities- Knowledge Acquisition**	**254 days**	**Mon 11/22/99**	**Fri 11/10/00**		**O'Connell**	**DE&S**
84	Y-1.0	Initiate Year 1 Research Activities	0 days	Mon 11/22/99	Mon 11/22/99	80		All
85	Y-1.1	Deconstruct DPCIT	60 days	Tue 11/23/99	Mon 02/14/00	84		DE&S/ABB-CE
86	Y-1.2	Develop Metrics	30 days	Tue 02/15/00	Mon 03/27/00	85		Sandia
87	Y-1.3	Develop 3D Model of a basic plant	30 days	Tue 03/28/00	Mon 05/08/00	86		DE&S
88	Y-1.4	Research Other Industry Practices	120 days	Tue 11/23/99	Mon 05/08/00	80		DE&S
89	Y-1.5	Examine Modularity	224 days	Tue 11/23/99	Sat 09/30/00	80		MIT/NCSU
90	Y-1.6	Determine Component Lead Time implications	120 days	Tue 11/23/99	Mon 05/08/00	80		ABB-CE/Sandia
91	Y-1.7	Examine techniques to eliminate excess margin	120 days	Tue 11/23/99	Mon 05/08/00	80		NCSU
92	Y-1.8	Examine Finite Element Analysis for Rx Containment	120 days	Tue 11/23/99	Mon 05/08/00	80		Sandia
93	Y-1.9	New criteria to meet shorten DPCIT	30 days	Mon 10/02/00	Fri 11/10/00	88,89,90		All
94	Y-1.10	New Process Development	120 days	Tue 11/23/99	Mon 05/08/00	84		MIT
95	Y-1.11	Develop Links to Finite Element Codes	120 days	Tue 11/23/99	Mon 05/08/00	84		Sandia
96	**Y-1.12**	**Prepare Task Reports**	**60 days**	**Tue 05/09/00**	**Mon 07/31/00**	**95**	**O'Connell**	**DE&S**
97	Y-1.12.1	Process	60 days	Tue 05/09/00	Mon 07/31/00			Sandia
98	Y-1.12.2	Productivity	60 days	Tue 05/09/00	Mon 07/31/00			DE&S
99	Y-1.12.3	Product	60 days	Tue 05/09/00	Mon 07/31/00			ABB-CE



NERI DE-FC03-99SF21898/A000 Project Milestones Schedule (11/19/99)

ID	WBS #'s	Task Name	Duration	Start	Finish	Predecesso	Task Leader	Organizations
100	**Y-2**	**Year 2 Detailed Activities- Collaboration on Model Characteristics**	**260 days**	**Tue 08/01/00**	**Mon 07/30/01**		**O'Connell**	**DE&S**
101	Y-2.1	Year 2 Kickoff meeting	2 days	Tue 08/01/00	Wed 08/02/00	96		All
102	**Y-2.2**	**Develop Smart/Adjustable Schedule Approach**	**90 days**	**Thu 08/03/00**	**Wed 12/06/00**			
103	Y-2.2.1	Apply Data Driven Process Analysis	90 days	Thu 08/03/00	Wed 12/06/00	101		DE&S/ABB-CE
104	Y-2.2.2	Apply Systems Dynamics Analysis	90 days	Thu 08/03/00	Wed 12/06/00	101		MIT
105	Y-2.2.3	Apply Analysis techniques for containment/structure simplificatic	90 days	Thu 08/03/00	Wed 12/06/00	101		Sandia/NCSU
106	Y-2.3	Incorporate new tools into design process	75 days	Thu 12/07/00	Wed 03/21/01	03,104,105		All
107	Y-2.4	Incorporate other NERI insights	30 days	Thu 03/22/01	Wed 05/02/01	106		All
108	Y-2.5	Results Meeting/Screen Prospective Improvements	3 days	Thu 05/03/01	Mon 05/07/01	107		All
109	Y-2.6	Validate Proposed Improvements	30 days	Tue 05/08/01	Mon 06/18/01	108		All
110	Y-2.7	Publish 2nd interim report covering Model Specifications	30 days	Tue 06/19/01	Mon 07/30/01	109		DE&S
111	**Y-3**	**Year 3 Detailed Activities- Developing of Prototype Models**	**232 days**	**Tue 07/31/01**	**Wed 06/19/02**	**110**	**O'Connell**	**DE&S**
112	Y-3.1	Year 3 Coordination Meeting	2 days	Tue 07/31/01	Wed 08/01/01			
113	**Y-3.2**	**Develop new DPCIT process**	**60 days**	**Thu 08/02/01**	**Wed 10/24/01**			
114	Y-3.2.1	Develop 1st Draft Product Model	60 days	Thu 08/02/01	Wed 10/24/01	112		ABB-CE
115	Y-3.2.2	Develop 1st Draft Productivity Model	60 days	Thu 08/02/01	Wed 10/24/01	112		DE&S
116	Y-3.2.3	Develop 1st Draft Process Model	60 days	Thu 08/02/01	Wed 10/24/01	112		Sandia
117	Y-3.3	Meet at DE&S and Perform table top exercises	5 days	Thu 10/25/01	Wed 10/31/01	14,116,115		All
118	Y-3.4	Review lessons learned and incorporate	30 days	Thu 11/01/01	Wed 12/12/01	117		All
119	**Y-3.5**	**Build Final Model/Schedule**	**60 days**	**Thu 12/13/01**	**Wed 03/06/02**	**118**		
120	Y-3.5.1	Finalize Product Model	60 days	Thu 12/13/01	Wed 03/06/02			ABB-CE
121	Y-3.5.2	Finalize Productivity Model	60 days	Thu 12/13/01	Wed 03/06/02			DE&S
122	Y-3.5.3	Finalize Process Model	60 days	Thu 12/13/01	Wed 03/06/02			Sandia
123	Y-3.6	Publish Models	30 days	Thu 03/07/02	Wed 04/17/02	20,121,122		DE&S
124	Y-3.7	Publish Draft Project Report	15 days	Thu 04/18/02	Wed 05/08/02	123		DE&S
125	Y-3.8	Review and Comment Incorporation	30 days	Thu 05/09/02	Wed 06/19/02	124		DE&S