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Nuclear Energy Research Initiative

Cooperative Agreement DE-FC03-99SF21902

TECHNICAL PROGRESS REPORT 2Q00



July 21, 2000

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Narrative:

Task 0: Project Management

Task Status: Conference calls and e-mail messages continued on an as-needed basis to ensure that the tasks for this project were properly coordinated. In addition to technical matters, these calls and messages addressed planning for the annual review meeting in July and the annual topical report which is due in early August.

CE Nuclear Power LLC (previously ABB Combustion Engineering Nuclear Power, Inc.) was purchased by Westinghouse Electric Company. This merger will not decrease the performance or schedule commitments for this project. Some improvements may be achieved due to increased access to technical resources.

A. Issues/Concerns: None.

Task 1: Development of Risk-Informed Methodologies

A. Task Status: Under Task 1.1, the NRC's database cross-referencing regulatory documents and industry codes and standards was converted to Microsoft Access 2000 software. The NRC web-site was reviewed, and available regulatory criteria documents were listed. Under Task 1.2, a cost estimate for a 50% reduction in Emergency Core Cooling System equipment (\$10 million) was made based on data for a typical plant. Under Task 1.3, the first version of the regulatory framework document was issued. It may be revised during the second year of this project to reflect lessons learned in the implementation of the new framework as part of Tasks 1.4 – 1.6. Under these three tasks, a PSA model for a simplified ECCS system was developed and used to demonstrate that the core damage frequency would not change if credit were taken for lower initiating event frequencies. The development of a generic PSA model applicable to other reactor designs was initiated. Under Task 1.7, a report on the NRC hearing process and potential improvements was drafted. Notably, cross-examination on technical matters – a time-consuming and usually non-productive characteristic of past hearings - is not actually required by the Administrative Procedures Act. Under Task 1.8, Westinghouse attended the IAEA Consultancy Group on Water-Cooled Reactor Technology in April to develop the second draft of its technical document and to plan for an expert group meeting in December, 2000. The technical report being developed will reflect the goals of the three NERI projects (Risk Informed Assessment, Improved Design and Construction, and Smart Equipment).

B. Issues/Concerns: None.

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Task 2: Strengthening the Reliability Database

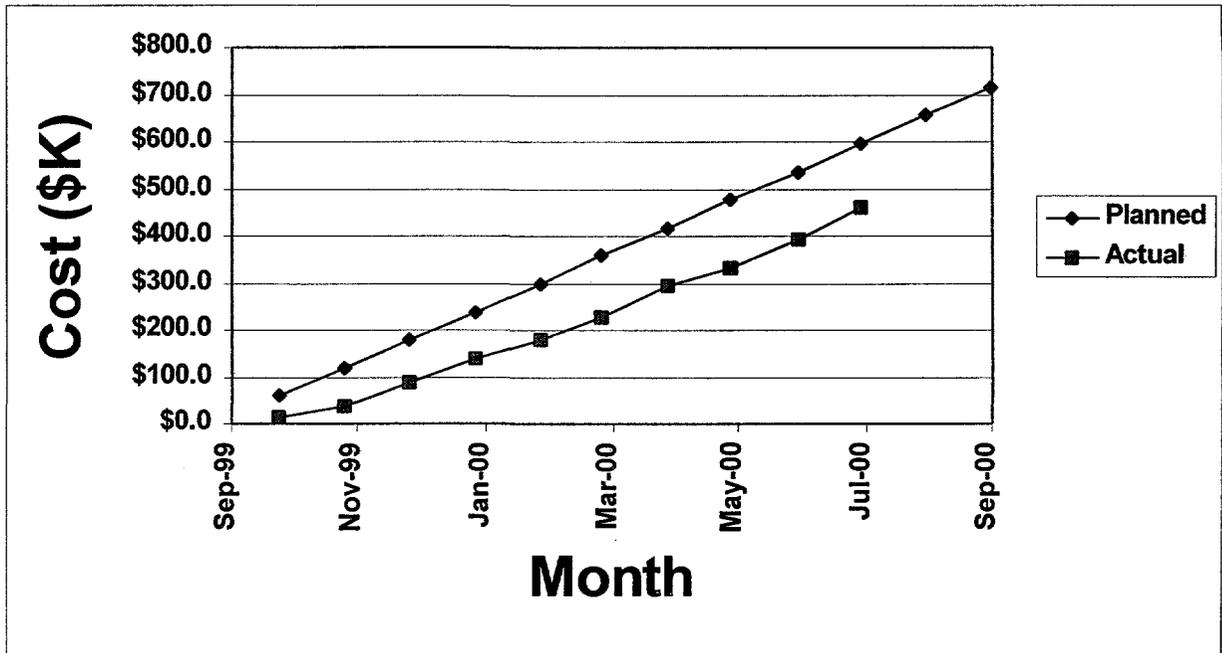
A. Task Status: Under Task 2.1, the search for data available to support the reliability of nuclear plant structures, systems, and components in the new risk-informed design and regulatory process was essentially completed. Under Task 2.2, the evaluation of these databases was initiated. Input on this progress was provided for the annual review meeting and the first draft of the annual report.

B. Issues/Concerns: None.

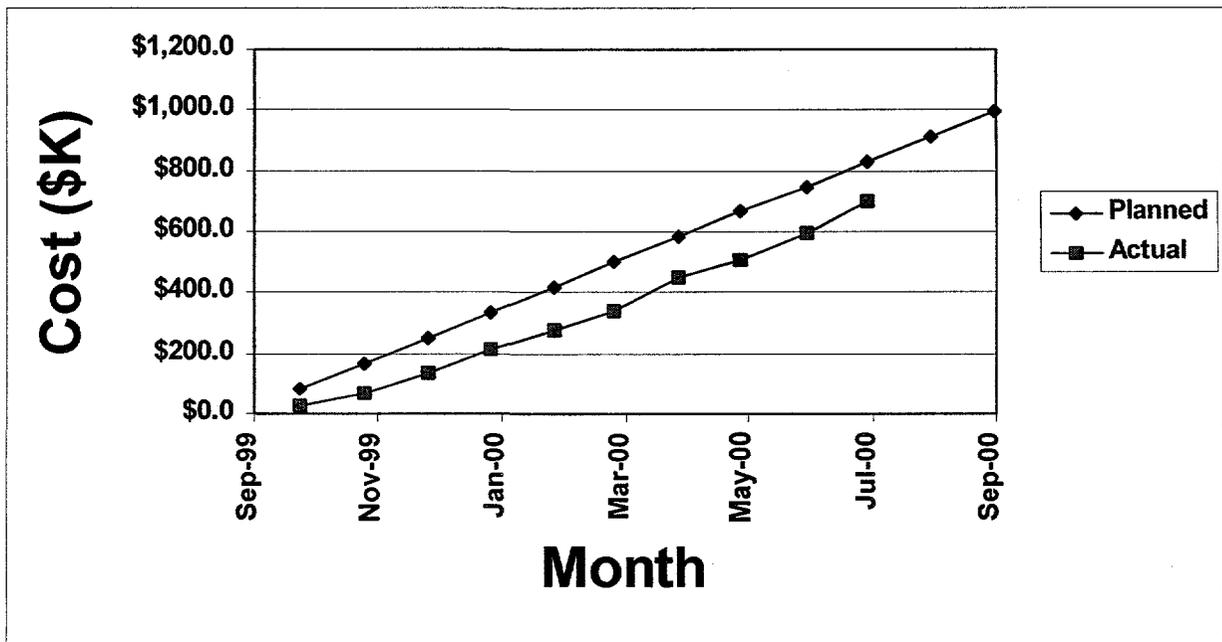
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Cost Performance:

ABB CENP and Subcontractors (DE&S, MIT, NCSU, Egan & Associates):



Total Project Costs (ABB CENP, Subcontractors, SNL, INEEL):



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Status Summary of NERI Tasks – Phases 1-3:

Phase 1: 8/20/99 – 8/19/00

Milestone/Task Description	Planned Completion Date	Actual Completion Date
Completion of subtask 1.1, identify all applicable regulatory requirements	4/13/01 (R1)	
Completion of subtask 1.2, identify SSCs and typical costs	4/13/01 (R1)	
Begin subtask 1.3, develop methodology to risk-inform regulations	See Phase 2	
Begin subtask 1.4, develop methodology to simplify SSCs	See Phase 2	
Begin subtask 1.5, identify high priority requirements and SSCs	See Phase 2	
Begin subtask 1.7, evaluate reg. process	See Phase 3	
Begin subtask 1.8, coordinate activities with industry and NRC	See Phase 3	
Completion of subtask 2.1, identify current data sources	12/30/99 8/19/00 (R2)	
Begin subtask 2.2, identify weaknesses	See Phase 2	

Phase 2: 8/20/00 – 8/19/01

Milestone/Task Description	Planned Completion Date	Actual Completion Date
Completion of subtask 1.3, develop methodology to risk-inform regulations	8/1/01	
Completion of subtask 1.4, develop methodology to simplify SSCs	8/1/01	
Completion of subtask 1.5, identify high priority requirements and SSCs	8/1/01	
Begin subtask 1.6, apply methodologies	See Phase 3	
Continue subtask 1.7, evaluate regulatory process	See Phase 3	
Continue subtask 1.8, coordinate activities with industry and NRC	See Phase 3	
Completion of subtask 2.2, begin subtask 2.2, identify data weaknesses	8/31/00 8/19/01 (R2)	
Begin subtask 2.3, develop programs	See Phase 3	

Phase 3: 8/20/01 – 3/19/02

Milestone/Task Description	Planned Completion Date	Actual Completion Date
Completion of subtask 1.6, apply methodologies to sample SSCs	3/1/02	
Completion of subtask 1.7, evaluate regulatory process	3/19/02	
Completion of subtask 1.8, coordinate activities with industry and NRC	3/19/02	
Completion of subtask 2.3, develop programs to correct weaknesses	3/1/02	

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OMB Control No.
1510-0400

**U.S. DEPARTMENT OF ENERGY
FEDERAL ASSISTANCE MILESTONE PLAN**

DOE F-600.3
(02-94)
Replaces EIA-459B

OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, Records Management Division, HR-422 - GTN, Paperwork Reduction Project (1910-0400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-0400), Washington, DC 20503.

1. Program/Project Identification No. DE-FC03-99SF21902		2. Program/Project Title Risk-Informed Assessment of Design and Regulatory Requirements for NPPs													
3. Performer (Name, Address) ABB Combustion Engineering Nuclear Power, Inc. 2000 Day Hill Road Windsor, CT 06095-0500		4. Program/Project Start Date 8/20/99													
Attn: PI Stanley Ritterbusch		5. Program/Project Completion Date 3/19/02													
6. Identification Number	7. Planning Category (Work Breakdown Structure Tasks)	8. Program/Project Duration (t)												9. Comments (Notes, Name of Performer)	
		S	N	J	M	J	S	N	J	M	J	S	N		J
1.1	Identify Reg. Requirements														ABB (2)
1.2	Identify SSCs & Costs														ABB (2)
1.3	Develop Reg. Methods														ABB (2)
1.4	Dev. Simplification Methods														ABB (2)
1.5	Identify Priority SSCs														ABB (2)
1.6	Apply Methods to Sample														ABB (2)
1.7	Evaluate Reg. Process														ABB (2)
1.8	Industry Coordination														ABB (2)
2.1	Identify Data Sources														ABB (2)
2.2	Identify Data Weaknesses														ABB (2)
2.3	Develop Corrective Programs														ABB (2)
10. Remarks (1) Two months/box (2) ABB is lead organization; collaborating orgs are Sandia, INEEL, MIT, DESS, NCSU, Egan & Associates															
11. Signature of Recipient and Date <i>Stanley Ritterbusch</i> 6/23/00															
														12. Signature of U.S. Department of Energy (DOE) Reviewing Representative and Date	

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