

Project Baseline Summary Report

Data Source: **EM CDB**
Operations/Field Office: **Richland**
Site Summary Level: **Hanford Site**
Project **RL-HM01 / HAMMER**

Report Number: **GEN-01b**
Print Date: **3/9/2000**
HQ ID: **0425**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

The primary mission of the HAMMER Program is to host, broker and provide regulatory-required health and safety training to the Hanford Site, involving hands-on use of realistic props and settings, in order to save lives, reduce injuries and increase worker productivity. These activities will be required throughout the life of the Hanford Site, which for planning purposes is assumed to be the year 2046.

The Department of Energy (DOE) recognizes that workers involved with Site cleanup activities will face safety hazards from construction, demolition and clean-up operations as well as risks from fires and explosions and health threats associated with exposures to toxic chemicals. In addition to these hazards, workers will confront high-level radioactive and mixed waste unique to DOE sites. DOE has taken a strong position concerning their commitment to worker health and safety and guaranteeing the American Public that no harm will come to the environment through DOE site clean-up activities.

HAMMER is a virtual organization, one that provides comprehensive and linked training and education programs, but does not actually exist under one roof or one management structure. It is operated by a small, highly skilled staff whose central function is to coordinate the input of expertise and resources of the partners. HAMMER's partners in the development of the center represent a variety of organizations, including DOE, DOE contractors, tribal agencies, other government agencies at all levels, international labor unions, academic institutions, and private sector interests.

As a virtual organization, partners and stakeholders play an important role in the operation of HAMMER. HAMMER does not simply provide a service for sale on the open market. Rather, its first priority is to provide a facility and the coordination of services that allow the stakeholders to pool their efforts to accomplish the mission of safe and efficient clean up of the DOE complex. The key to HAMMER's success is not to duplicate its stakeholders' capabilities, but to provide more effective means by which they can deliver their training.

The Volpentest HAMMER Training and Education Center accommodates an array of large hands on props, other job specific training devices, and training areas. These allow the training providers to simulate job site activities, especially for hazardous material and emergency response challenges. This facility provides realistic props and settings for hands on training. This variety of training experiences does not exist elsewhere at this time.

Definition of Scope:

Specific project scope from the Hanford Site technical baseline is provided below in terms of the systems that the project has responsibility for.

HAMMER

- Maintain Safe & Compliant HAMMER Facility: The facilities, structures, and equipment associated with HAMMER will be maintained until they are ready for cleanup.

- Maintain HAMMER Facility: HAMMER is operated as a virtual organization that provides the facilities, infrastructures, and coordination for user

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education and training. It will act as a broker between users and suppliers, and will not staff in house instructors.

Training at HAMMER is conducted in specific areas titled Product Lines. The Product Lines are Environmental and Waste Management, Emergency Operations, Fire Operations, Occupational Safety and Health, Technology Supported Learning, Transportation, technology and Law Enforcement. The further workscope, which ensures a successful training operation at HAMMER, includes:

- Conduct of Training & Learning Services - ensures quality control and continuous improvement evaluations, maximizes hands-on training using various props and simulations. Included is the Learning Resource Center, which also houses the Safety Resource Center and plays an integral role in the safety and training needs of the Hanford Site.

- Operations & Maintenance - required for safe and professional operations of training equipment and props, maintenance of facilities and training support services. This includes but is not limited to resource scheduling, industrial safety and hygiene assessment activities, transportation of equipment and materials and facility enhancements.

- Business Management - includes budget planning, financial and contract administration, project management, performance measurement, financial analysis and financial policy development.

HAMMER has established and continues to establish working relationships with various other federal agencies, including the: DOT, EPA, FEMA, and OSHA. The relationships are focused on developing agreements that help ensure that HAMMER can cost effectively provide required training for DOE and other federal agencies.

The partnerships are designed to leverage the federal investment in the HAMMER facility and to reduce Hanford costs by exchanging health, safety, and training expertise. They are also designed to increase worker health, safety, and productivity while spreading the cost for the facility's operation and maintenance over a broader base. The training may be initiated by DOE/HAMMER or by other agencies, allowing personnel from various agencies to attend.

Technical Approach:

The end point targets in the Hanford Strategic Plan addressed by this project include:

- Protect public health and the environment Reduce or eliminate emissions and effluents Regulatory and TPA compliance
- Protect worker health and safety; reduce accidents and radiological exposure; achieve voluntary protection program "star" status

The technical approach and technology initiatives for the Project to accomplish the Hanford Strategic Plan end point targets are identified below.

- Technical Objectives - HAMMER: The HAMMER technical objectives are to host and facilitate hands on performance based health and safety training appropriate to Hanford Site needs, facilitate training of emergency responders along the hazardous materials transportation routes, create a

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highly skilled workforce capable of meeting the cleanup needs of the DOE by hosting proven training programs, decrease recordable injuries and exposures while increasing productivity at Hanford, demonstrate and test new waste management and clean up technologies at HAMMER by utilization of simulated waste sites and props.

HAMMER's emphasis is the delivery of its products and services for the Hanford Site and its contractor workers, managers and emergency responders at the Hanford Site and along DOE's transportation corridors, including training that can make effective use of HAMMER Facilities and programs.

Beyond Hanford, the entire DOE complex will benefit from the training approach demonstrated at the HAMMER facility. Thus, HAMMER will:

Train to save lives and reduce injuries by: - Improving worker health and safety through the facilitation of hands on performance based training programs. - Providing hands on practical training utilizing state art training props and simulated job site conditions for workers and emergency responders. - Training workers to recognize both known and unknown hazards associated with environmental restoration and waste management. - Preparing workers to react quickly, safely and intuitively in uncontrolled incidents. - Evaluating the impact of health and safety training in the work place to demonstrate the value added by hands on training. - Implementing education and training programs to enhance the safety and health of the Hanford work force.

Reduce Costs of Training by: - Operating as a virtual organization by utilizing the skills and competencies and resources of other site organizations, federal agencies, and the private sector as needed. - Partnering with other Federal agencies to host high quality certified training at reduced development costs. - Brokering educational and training products to other federal agencies, state, and local governments by matching needs and supplies. - Maintaining the active involvement of the HAMMER partners to ensure continued support, satisfaction and the appropriate high quality products for achieving greater worker safety and productivity. - Developing safety and health demonstration projects that will establish a model process for safety and health training reciprocity at HAMMER that can be exported throughout the DOE complex.

Establish a New Training Industry by: - Assisting the community in establishing a diversified and stable economic base through private sector participation in training, creation of local training companies, and effective use of the HAMMER facility. - Leveraging HAMMER resources to create a training industry in the region.

HAMMER facilities and programs will be versatile enough to meet the training needs of the Hanford Site as clean up evolves and as new technologies are utilized.

Project Status in FY 2006:

In FY 2006 the HAMMER Program will continue to support the Hanford Site as an operating project, and ongoing operations are required as long as there is activity on the Hanford Site.

Post-2006 Project Scope:

Post FY 2006 the HAMMER Program will continue to support the Hanford Site as an operating project, and ongoing operations are required as long as there is activity on the Hanford Site.

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Project End State

The endpoint of the HAMMER Program parallels the accomplishment of the Hanford site mission which for planning purposes that is assumed to be in the year 2046.

Cost Baseline Comments:

The HAMMER Program utilizes activity based costing for the preparation of the budget estimate. Definition of the operational required work scope and supporting schedule were developed at the task and sub-task level, resource loaded, quantified and estimates were calculated using planning rates and escalation defined by the FDH CFO and approved by DOE-RL. Traceability defining the estimate is provided by the unification of the estimate, resource loaded schedule and the budget into a consolidated planning process. Cost estimate assumes there will be no future reductions/rate increases. No contingency is included in the cost baseline.

Safety & Health Hazards:

HAMMER is critical to delivering hands-on training to DOE workers involved in hazardous materials management and emergency response. Training at HAMMER enables workers to train in lifelike situations, i.e. emergency preparedness, firefighting, confined space rescues, toxic spills, transportation accidents in simulated conditions. This hands-on training allows the workers to identify the potential associated hazards involved in real life experiences and prepares them to face real life emergencies. Worker safety is the #1 priority onsite and HAMMER is an integral part of achieving this priority.

Thousands of workers are exposed to the risks of handling hazardous material and wastes, responding to emergencies, and environmental restoration activities. Protecting workers from lost-time injuries or longer-term work-related health effects cannot be accomplished by engineering safety controls alone. The workers need systematic training appropriate to their tasks and associated risks. HAMMER's hands-on training is the most effective method to satisfy these knowledge, skill and ability (KSA) requirements. Hands-on performance based training is proven to sharply increase the retention of KSA during training. Workers and emergency responders are trained to recognize and respond appropriately to anticipated and unanticipated hazards in simulated work environments.

Safety & Health Work Performance:

HAMMER training focuses on product areas known as product lines. The product lines cover numerous ES&H areas, therefore the Functional Area breakout identifies areas where training will occur. Present product lines include:

- Emergency Operations - focuses on training and services to emergency responders and managers, enabling them to identify training needs and perfect response techniques before a catastrophe occurs. Domestic preparedness programs held at HAMMER include weapons of mass destruction, non-proliferation and counter narcotics training.

- Technology-Supported Learning - focuses on using technology to make classroom training and distance learning more interactive. TSL is made up of three components: computer-based training, video tele-conferencing and web-based training.

- Occupational Safety & Health - focuses on offering a complete line of occupational safety and health training for general industry and construction, OSH brings some of the nation's best training providers to HAMMER for confined space, fall protection, behavioral-based safety and hazardous waste

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courses. Classes help workers identify and/or mitigate hazards in the workplace. Mastery Courses for safety professionals, compliance officers and safety/health instructors are also offered.

- Fire Operations - focuses on utilizing authentic on-site props, to those involved with the fire service. Fire fighting, HAZMAT, technical rescue and industrial fire training are some of the many courses offered to customers at the HAMMER facility.

- Environmental & Waste Management - focuses on and designed for those who deal with substances or processes adversely affecting the environment, typical customers may handle hazardous waste shipments, manage superfund sites or monitor radiation zones. They may seek pesticide application certification or decontamination & decommissioning training. Regulatory compliance needs are met through HAMMER's performance-based training.

- Transportation - focuses on addressing the concerns of customers involved with hazardous materials transportation and emergency preparedness. HAMMER serves as the National DOE Center of Excellence for Regulatory Compliance, as well as Transportation Emergency Preparedness Program training. These activities are funded by other national EM program PBS elements, not HAMMER's HM01.

- Technology - keeps pace with evolving technologies by identifying health and safety issues related to technology and training the work force on new technology. Exemplifying this product line, the Geophysical Test Bed can be used to develop new technologies that locate cultural sites, waste sites and underground utilities, non-intrusively.

- Law Enforcement - focuses on law enforcement and security personnel. With six firing ranges, an ammunitions shoot house, MILES laser equipment and an obstacle course, law enforcement and security personnel are offered uncountable training opportunities at HAMMER. Hostage negotiation, tactical response, crisis entry and interviewing/interrogation are just a few of the skill-building courses.

In addition to the product lines, HAMMER has other services to support the health and safety training that is conducted at HAMMER. These services include:

- HAMMER operations - required for safe and professional operations of training equipment and props, maintenance of facilities and training support services in a safe and cost efficient manner. This also includes but is not limited to resource scheduling, safety and healthoversight, engineering, environmental oversight, facility enhancement (project) management, and training.

- Business Management - includes budget planning, financial and contract administration, information system planning, performance measurement, financial analysis and financial policy development.

- Conduct of Training & Learning Services - includes ensuring quality control and continuous improvement evaluations, maximizing hands-on training using various props and simulations. Also this covers the Learning Resource Center and the FDH Safety Resource Library

By providing Training as real as it gets' HAMMER instruction props offer realistic hazardous environments under simulated conditions. Worker awareness and skills will be enhanced by hands-on training. Workers will be able to practice with devices in settings that can provide challenges similar to those in the actual work environment. By manipulating and testing properties and features of objects and by varying their context workers

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learn relationships and associations between events and outcomes. Continued and increasingly complex interactions with the environment form the basis for insight, predictive abilities, and problem solving. Hands-on training activities is the only way to learn how to put gear on, move, and manipulate tools and equipment. Props and mockups of particularly hazardous tasks and work settings for training can reduce not only the risks of on-the-job training accidents but also reduce the amount of time necessary to bring new workers into specific work settings. Access to this type of comprehensive training clearly demonstrates DOE's commitment to enhancing safety through the application of state-of-the-art training environments and devices for thorough training of workers.

PBS Comments:

The target level funding reflected in section B.1 is different than the baseline budget contained in this PBS, and reflects reductions in scope that would be taken from this project if needed enhanced performance targets are not realized for the site to meet the overall anticipated funding level. The HAMMER FY 1999 budget shortfall is \$1.354M. Specific impacts in FY 1999 and their consequence would be:

1) Tulane Workslope Integration ~ \$850K

Scope includes integration of processes and implementation of scope developed and performed by Tulane and Xavier Universities into FDH

HAMMER operations. Specific programs include:

- Level 1, 2, and 3 Evaluation Process, Third Party Evaluations of Classroom Presentations, Regulatory review of training being conducted at HAMMER, Integration of HAMMER training with national Occupational and Health Programs, Support to trainers in integration of props and simulations into curriculum, Learning Resource Center (LRC)/Distance Learning, Education Programs (Literacy, basic skills enhancement), Safety Library, Improved Lessons Learned process using EJTA and Occupational Health data to improve safety and health training, Implementation of the Integrated Safety Management Plan.

Impact if not funded includes; HAMMER may not assure regulatory compliance or continuous improvement of training, nor meet HAMMER's vision of being a premier training facility. With no support to national programs HAMMER will lose a major avenue of partnership development. Without the LRC workers will lack skills necessary to react appropriately to known and unknown hazards, causing increased risk to workers in the workplace. Without Distance Learning the ability to access National Programs from other institutions in a cost-effective manner would not occur.

2) HAMMER Outreach/Revenue Generation ~ \$504K

Scope includes HAMMER's outreach, communications and contracting activities required to fully utilize the HAMMER facility. HAMMER will not be able to effectively broker training, the facility, props, products and services to outside entities, nor generate revenue. Resources will not be in place to meet the diverse contracting and other support needs of the HAMMER customers, thereby losing non-DOE customers and their capabilities of using the HAMMER facility.

Impact if not funded includes: HAMMER will not be able to fulfill its mission of creating partnerships with other government agencies, labor, tribal governments, and the private sector to maximize the use of HAMMER. In addition HAMMER will be unable to offer training services to non-DOE customers, thus resulting in the inability of HAMMER to spread fixed costs to a larger customer base. Additionally HAMMER will be unable to fulfill the role of being a pilot program for demonstrating new approaches to health and safety training, thus increasing costs and decreasing safety and efficiency. This equates to approximately a reduction of 5 FTEs out of a total of 37.

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Baseline Validation Narrative:

NA

General PBS Information

Project Validated? **Date Validated:**

Has Headquarters reviewed and approved project? Yes

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project?

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y				Y	Y	Y

Project Identification Information

DOE Project Manager: June E. Ollero

DOE Project Manager Phone Number: 509-376-3825

DOE Project Manager Fax Number: 509-376-4963

DOE Project Manager e-mail address: june_e_ollero@rl.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	79,751	373,637	453,388	13,203	16,470	9,995	9,140	5,054	6,905	7,051	7,199	7,350	7,506	7,663	7,825

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	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (constant 1999 dollars)	75,464	205,127	280,591	13,203	16,470	9,995	9,140	5,054	6,763	6,757	6,751	6,744	6,739	6,732	6,726	
PBS EM Baseline (current year dollars)	79,751	373,637	453,388	13,203	16,470	9,995	9,140	5,054	6,905	7,051	7,199	7,350	7,506	7,663	7,825	
PBS EM Baseline (constant 1999 dollars)	75,464	205,127	280,591	13,203	16,470	9,995	9,140	5,054	6,763	6,757	6,751	6,744	6,739	6,732	6,726	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	7,575	7,734	7,898	8,065	42,960	42,572	39,134	43,455	48,271	53,641	59,629	12,703				
PBS Baseline (constant 1999 dollars)	6,371	6,365	6,360	6,354	31,724	28,196	23,246	23,152	23,067	22,990	22,922	4,380				
PBS EM Baseline (current year dollars)	7,575	7,734	7,898	8,065	42,960	42,572	39,134	43,455	48,271	53,641	59,629	12,703				
PBS EM Baseline (constant 1999 dollars)	6,371	6,365	6,360	6,354	31,724	28,196	23,246	23,152	23,067	22,990	22,922	4,380				

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	2.10%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070

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2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2046
 Current Projected End Date of Project: 9/30/2046
 Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	245,803	Actual 1997 Cost:	16,470	Actual 1998 Cost:	9,140
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	220,193	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			5,945
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	226,138				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	226,138	
Additional Amount to Reconcile (+):	31,255	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	257,393	

Milestones

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Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Begin HAMMER Project	PBS-97-039		2/28/1997								
PBS Mission Completion	PBS-MC-039		9/30/2046								
PBS Project End	PBS-PE-039		9/30/2046								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Begin HAMMER Project	PBS-97-039			Y							Administrative input to document the start of this PBS.
PBS Mission Completion	PBS-MC-039					Y					Administrative input to document the mission completion of this PBS.
PBS Project End	PBS-PE-039				Y						Administrative input to document the project end of this PBS.