

CEMP-ES Regulation No. 1110-3-111	Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000	ER 1110-3-111 16 Mar 92
	Engineering and Design  LOST DESIGN	
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DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers  
Washington, D.C. 20314-1000

ER 1110-3-111

Regulation  
No. 1110-3-111

16 March 1992

Engineering and Design  
LOST DESIGN

1. Purpose. This regulation establishes procedures for identifying, reporting and controlling lost design.

2. Applicability. This regulation applies to HQUSACE/OCE elements, major subordinate commands, districts, laboratories, and field operating activities (FOA) in support of Army military construction.

3. Policy.

a. All Corps offices involved in the design of construction projects shall establish effective internal methods to identify, report, and control lost design.

b. The definition of lost design and codes that describe the reasons for its occurrence, as set forth in this regulation shall be used to report lost design.

4. General.

a. The Congress requires that design that must be redone during execution of the Military Construction (MILCON) program be reported annually. The results of recent DoD investigations reveal that lost design is underreported.

b. Lost design is a measure of inefficiency and uncertainty in the planning and design process. Changes in criteria or siting after design has begun are typical causes of lost design. Lost design is sometimes beyond the control of the design agent or even the customer (installation or major command). For example, changes made at higher levels, such as force realignment, weapon system reconfiguration, and funding controls can incur lost design. To improve the control of lost design, it is imperative that all lost design be reported and that reasons for its occurrence be identified.

c. Concurrent with improved reporting of lost design, separate initiatives will be pursued to control the occurrence of

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lost design. Better project planning and programming are needed to improve control. Corporate groups should discourage user-originated changes during design. Clearly, as lost design reporting is improved, lost design reduction measures can be implemented more effectively.

#### 5. Definitions.

a. Lost Design. Design that has been scrapped and/or redone prior to award of a construction contract because of changes in the scope of a project, criteria, weapon system requirement, design error, or any other reason that invalidates portions of a design is lost design. Design of an unawarded construction contract additive bid item is included as lost design. Design changes that do not result in increased design cost, and value engineering (VE) studies and any modification costs related to a VE study are not included as lost design.

b. Design Breakage. Design that has incurred a cost for any project not planned to be constructed as part of an ongoing or planned construction program is design breakage. Design breakage includes program drops, project cancellations, and projects deferred beyond the Six Year Defense Program (SYDP). Design breakage is not reported as lost design. Projects that were previously reported as incurring lost design and that subsequently fall into the category of design breakage will have all design costs reported as design breakage.

#### 6. Responsibilities.

a. The Director of Military Programs, HQUSACE, and commanders of major subordinate commands and districts are responsible for establishing/implementing internal methods, as necessary, to ensure that lost design is accurately reported and controlled.

b. The Director of Military Programs, HQUSACE, and commanders of major subordinate commands shall monitor progress in lost design reporting and initiate action where required to improve the control of lost design.

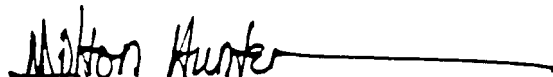
c. The Corporate Group shall approve all user-originated changes, including siting, that are within the project scope approved by Congress. User-originated changes will be evaluated on merit, considering design and other cost impacts.

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7. Reporting. Lost design reporting for all designs initiated on or after 1 April 1992 shall be reported in the Automated Management and Progress Reporting System (AMPRS), using the reason codes listed and defined in Appendix A. Districts are required to report lost designs consistent with the definitions and reason codes in Appendix A by using ENG Form 5029-R, Documentation of Lost Design, at Appendix B. The form will be retained by the district for recording purposes.

FOR THE COMMANDER

2 APPENDICES  
APP A - Lost Design Reason  
Codes and Definitions  
APP B - ENG FORM 5029-R

  
Milton Hunter  
Colonel, Corps of Engineers  
Chief of Staff

## APPENDIX A

### LOST DESIGN REASON CODE DEFINITIONS

Lost design can occur for many reasons. The following list of reasons, intended to be coded for reporting to higher authority, give a definition for each to provide uniformity in the reporting process. The reasons are grouped into five broad categories, each representing either a level in the chain of command or a particular phase of the design/construction process.

- A. Higher Authority Change. Changes directed by a level above the organization charged with executing the mission supported by the project. Congressional, OSD, or Service Headquarters staffs would be the usual source of these changes.
  - A.1. Program Amount. Changes in available funding imposed by higher authority, e.g., program/budget revisions, appropriated amounts, and Service reallocations after appropriation.
  - A.2. Scope. Changes in scope to a project directed by higher authority, e.g., expanded requirement.
  - A.3. Criteria. Changes in criteria directed by higher authority.
  - A.4. Weapon System. Changes in design caused by revisions to a weapon system, e.g., reduced production rate, different basing scheme, etc.
  - A.5. Schedule. Changes in schedule resulting from higher authority action.
- B. User Changes. Changes usually imposed by the installation, operating unit, or major command
  - B.1. Available Finding. Changes resulting from redesign to keep project within funding availability
  - B.2. Scope. Changes caused by technical difficulties, planning omissions, etc.
  - B.3. Criteria. Changes caused by command preference, technology advances, facts of life.
  - B.4. Weapon System. Inadequate facilities planning during weapon system development, bed-down reality.
  - B.5. Schedule. Changes resulting from a scheduling constraint imposed by the using activity.
- C. Cost Constraints. Changes resulting from funding shortfalls.
  - C.1. Redesign Within Available Funds. Redesign required as a result of a funding shortfall.
  - C.2. Additions Not Awarded. Projects with additive bid items requiring design that are not awarded due to funding constraints.
  - C.3. Schedule Delays. Redesign caused by delays occurring during the design process.
- D. Design Error or Omission. Changes resulting from inadequate performance on the part of the design agent or the A-E.
  - D.1. A-E Design Error. Changes due to inadequate design provided by the A-E.
  - D.2. In-house Design Error. Changes due to inadequate design provided by the in-house design team.
  - D.3. Design Agent Error. Changes due to inadequate guidance to the A-E including vague contract language, ambiguous criteria, etc.

APPENDIX B

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DOCUMENTATION OF LOST DESIGN		Routing
1. PROJECT		1
		2
		3
2. LOCATION		3 PROG YR

4. PROJECT NO	5. AMPRS PROJ. KEY	6. COEMIS WORKCODE
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**DEFINITIONS:**  
**Breakage:** Lost design for any project not planned to be constructed as part of an ongoing or planned program. Breakage includes program drops and project cancellations. (NOTE: Breakage is not reported as lost design.)  
**Lost Design:** Design cost which must be scrapped and/or redone prior to award of a construction contract because of changes in the scope of a project, criteria, weapon system requirements, or any other reason which invalidates completed portions of design.  
**NOTE:**  
 (1) Scope designed as an additive construction contract bid item, but not awarded, will be included as lost design.  
 (2) Design changes which do not result in increased design cost are not lost design.  
 (3) The cost of Value Engineering (VE) studies and any contract modification costs related to a VE study will not be included as lost design.

7. ESTIMATE OF LOST DESIGN COST					8. LOST DESIGN PERIOD (report to nearest onth end): From _____ To _____	
ORGANIZATION	OFFICE SYMBOL	TOTAL MANHOURS	DESIGN COST	A D P WORKCODE	9. PERCENT COMPETE WHEN LOST DESIGN OCCURRED ----- %	
ENGINEERING DIVISION STAFF					10. CIT DIRECTIVE, CORRESPONDENCE OR OTHER BASIS FOR LOST DESIGN.	
SOILS SECTION						
GEOLOGY SECTION						
SITE DEVELOPMENT SECTION						
SURVEY SECTION						
ELECTRICAL SECTION						
MOD & SPECIFICATIONS SEC						
COST ENGINEERING SECTION						
<b>FOR ILLUSTRATION PURPOSES ONLY</b>						
<b>(Local reproduction authorized - blank masters available from local FMO)</b>						
STRUCTURAL SECTION					(Reserved for use by Program Mgmt Section <i>ONLY!</i> )	
ARCHITECTURAL SECTION						
DESIGN BRANCH				1		
MILITARY PLANNING SECTION						
ARMY PROJECT MGMT SECTION						
AIR FORCE PROJECT MGMT SEC						
FAC ENGR SUPPORT SECTION						
PROGRAM MANAGEMENT SEC						
SURVEY FIELD						
CORE DRIL OPER						
REPORDUCTION BRANCH						
A-E SURVEY						
A-E DESIGN						
TOTAL						

11. REASON CODES FOR LOST DESIGN (See definitions on reverse.)				
<b>A HIGHER AUTHORITY CHANGE</b>	<b>B USER CHANGES</b>	<b>C COST CONSTRAINTS</b>	<b>D DESIGN ERROR OR OMISSION</b>	<b>E CHANGED CONDITIONS</b>
<input type="checkbox"/> Program Amount <input type="checkbox"/> Scope <input type="checkbox"/> Criteria <input type="checkbox"/> Weapon System <input type="checkbox"/> Schedule	<input type="checkbox"/> Available Funding <input type="checkbox"/> Scope <input type="checkbox"/> Criteria <input type="checkbox"/> Weapon System <input type="checkbox"/> Schedule	<input type="checkbox"/> Redesign Within Available Funds <input type="checkbox"/> Additions Not Awarded <input type="checkbox"/> Schedule Delays	<input type="checkbox"/> A-E Design Error <input type="checkbox"/> In-house Design Error <input type="checkbox"/> Design Agent Error	<input type="checkbox"/> Differing Site Conditions <input type="checkbox"/> Regulatory (Environmental, zoning, etc.)
10. PREPARED BY			OFFICE SYMBOL	DATE

**DOCUMENTATION OF LOST DESIGN**

ROUTING

1. PROJECT

1	
2	
3	

2. LOCATION

3. PROG YR

4. PROJECT NO

5 AMPRS PROJ KEY

6. COEMIS WORKCODE

**DEFINITIONS:**

Breakage: Lost Design for any project not planned to be constructed as part of an ongoing or planned program. Breakage includes program drops and project cancellation. (NOTE: Breakage is not reported as lost design.)

Lost Design: Design cost which must be scrapped and/or redone prior to award of a construction contract because of changes in the scope of a project, criteria, weapon system requirements, or any other reason which invalidates completed portions of design.

**NOTE:**

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(2) Design changes which do not result in increased design cost are not lost design.

(3) The case of Value Engineering (VE) studies and any contract modification costs related to a VE study will not be included as lost design.

**7 ESTIMATE OF LOST DESIGN COST**

ORGANIZATION	OFFICE SYMBOL	TOTAL MANHOURS	DESIGN COST	ADP WORKCODE
ENGINEERING DIVISION STAFF				
SOILS SECTION				
GEOLOGY SECTION				
SITE DEVELOPMENT SECTION				
SURVEY SECTION				
ELECTRICAL SECTION				
MOD & SPECIFICATIONS SEC				
COST ENGINEERING SECTION				
MECHANICAL SECTION				
DRAFTING SECTION				
STRUCTURAL SECTION				
ARCHITECTURAL SECTION				
DESIGN BRANCH				
MILITARY PLANNING SECT10N				
ARMY PROJECT MGMT SECTION				
AIR FORCE PROJECT MGMT SEC				
FAC ENGR SUPPORT SECTION				
PROGRAM MANAGEMENT SEC				
SURVEY FIELD				
CORE DRILL OPER				
REPRODUCTION BRANCH				
A-E SURVEY				
A-E DESIGN				
TOTAL				

8. LOST DESIGN PERIOD (report to nearest month end)  
From \_\_\_\_\_ To \_\_\_\_\_

9. PERCENT COMPLETE WHEN LOST DESIGN OCCURRED  
\_\_\_\_\_ %

10 CITE DIRECTIVE, CORRESPONDENCE, OR OTHER BASIS FOR LOST DESIGN.

*(Reserved for use by Program Mgmt Section ONLY)*

**11. REASON CODES FOR LOST DESIGN (See definitions on reverse)**

4 HIGHER AUTHORITY CHANGE	B. USER CHANGES	C. COST CONSTRAINTS	D DESIGN ERROR OR OMISSION	E. CHANGED CONDITIONS
( ) Program Amount ( ) Scope ( ) Criteria ( ) Weapons system ( ) Schedule	( ) Available funding ( ) Scope ( ) Criteria ( ) Weapon system ( ) Schedule	( ) Redesign Within Available funds ( ) Additions not Awarded ( ) Schedule Delays	( ) A-E Design Error ( ) In-house Design Error ( ) Design Agent Error	<input type="checkbox"/> Differing Site Conditions <input type="checkbox"/> Regulatory (environmental, zoning, etc.)
10 PREPARED BY			OFFICE SYMBOL	DATE