

## **Chapter 1**

### **Introduction**

#### **1-1. Purpose**

This manual is issued for guidance of individuals and elements within the Corps of Engineers engaged in the structural planning, layout, and design of navigation dams for civil works projects. The structural design of gates is not covered in this manual.

#### **1-2. Applicability**

This manual applies to all HQUSACE elements, major subordinate commands, districts, laboratories, and field operating activities (FOA) having responsibilities for the design and construction of civil works projects.

#### **1-3. References**

Required and related publications are listed in Appendix A.

#### **1-4. Scope**

This manual provides guidance for the planning and design of navigation dams and appurtenant structural

features. The appurtenant features include embankments, dam piers, stilling basins, training walls, separation walls, galleries, sills, service bridges, and machinery houses. This manual is structured so that Chapters 2 through 4 contain layout and planning information; Chapter 5 provides detailed descriptions of types of dam structures; Chapter 6 discusses maintenance and emergency closure facilities; Chapter 7 discusses appurtenant seepage control features; Chapter 8 discusses appurtenant channel protection features; Chapters 9 through 11 present detailed requirements for stability and structural analysis and design; Chapter 12 discusses concrete and joint materials, waterstops, etc.; and Chapter 13 discusses design consideration for miscellaneous dam features. Appendix A covers references; Appendix B contains a design check list; and Appendix C describes lessons learned from case histories.

#### **1-5. Supersession**

This EM supersedes EM 1110-2-2607, dated 1 July 1958.