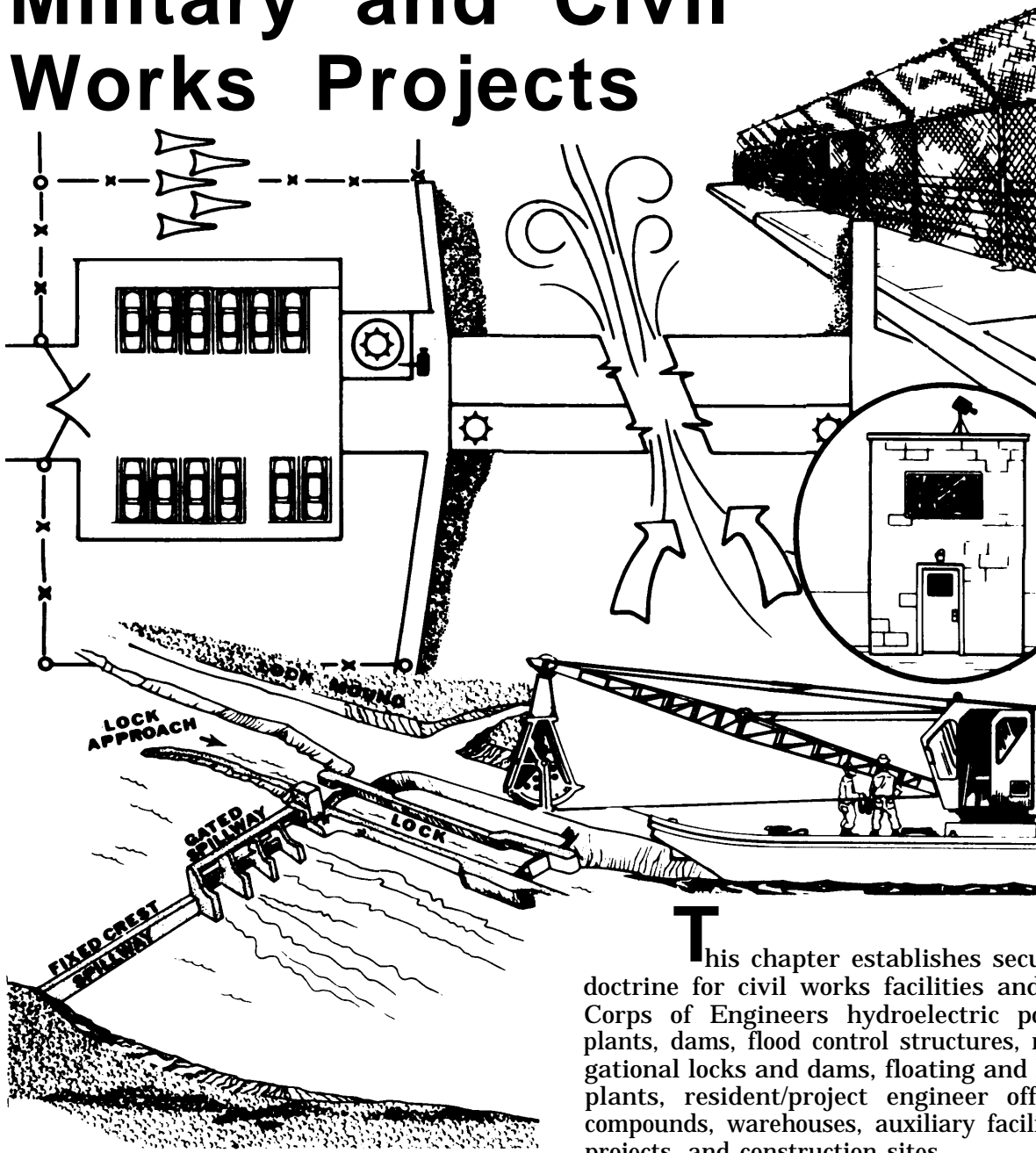


# Military and Civil Works Projects



This chapter establishes security doctrine for civil works facilities and for Corps of Engineers hydroelectric power plants, dams, flood control structures, navigational locks and dams, floating and land plants, resident/project engineer offices, compounds, warehouses, auxiliary facilities, projects, and construction sites.

Physical security planning for Corps of Engineers projects should be based on a total integrated systems approach and should include, as a minimum, the following factors:

- Environmental and human aspects of the project to include criminal, political, and economic considerations, accessibility, and locality.
- Importance of the projector activity to the national defense, OCE using agency, and environment.
- Vulnerability of the project to loss, theft, pilferage, or willful damage of equipment or supplies.
- Operational requirements to include aesthetics and access to the public.

## 16-1 Applicability

Guidance contained in this chapter applies to all Corps of Engineers divisions, districts, and field operating agencies.

## 16-2 Basic Philosophy

The basic philosophy of the Corps of Engineers encourages maximum use of projects for educational and recreational purposes. However, access to project facilities considered vulnerable/critical as defined in this chapter should be restricted or denied.

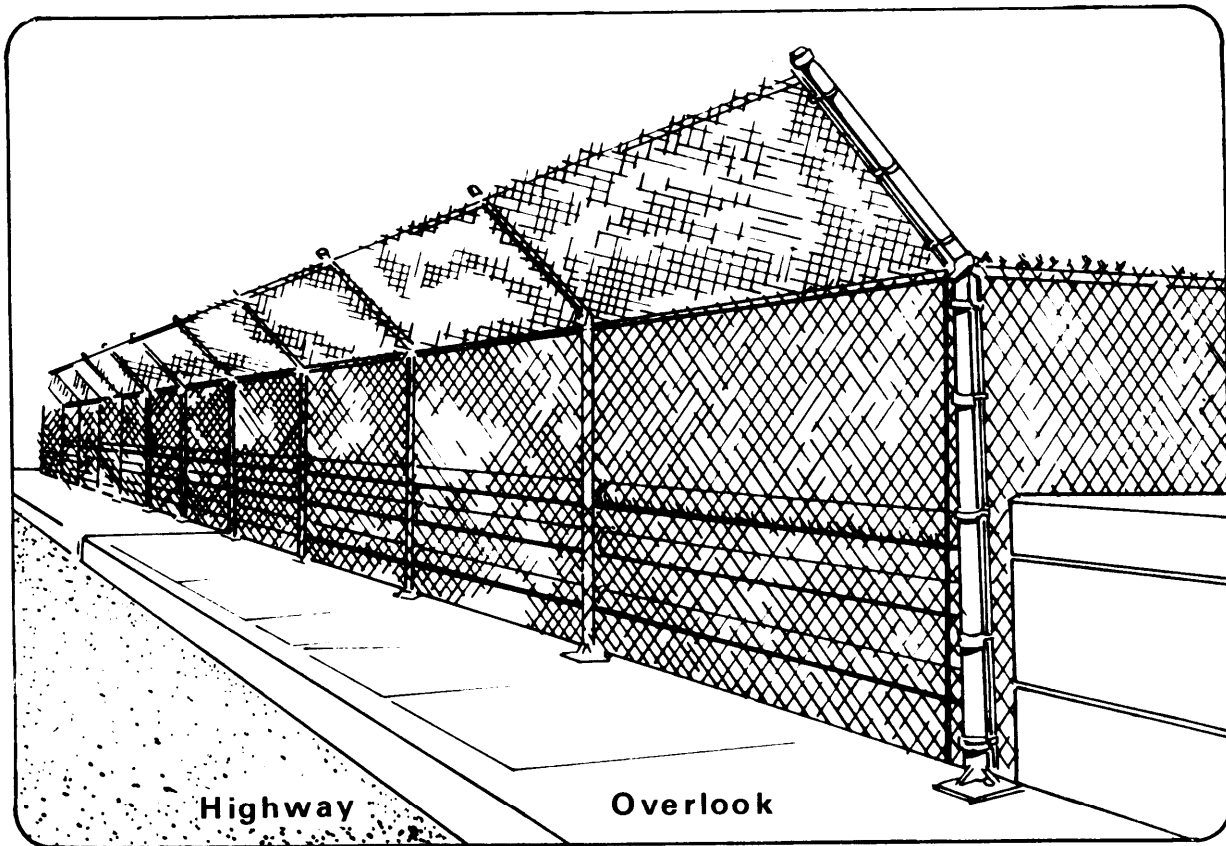
## 16-3 Security Aspects

**a.** In providing security to projects, district engineers should use well designed, quality perimeter fencing (OCE Drawing 40-16-08) which, where feasible, is lighted during hours of darkness to deny or discourage access to critical facilities or areas. Perimeter security fencing must be standard Corps of Engineers design or an aesthetic design equally secure and be set back sufficiently from the facility to prevent damage from explosives or flammable material thrown into the area. Where not practical to erect barrier fencing, ground level windows should be covered by heavy gauge security screen or equivalent aesthetic designed security material.

**b.** Also necessary are systems for vehicle and personnel control, adequate communications (secure inhouse telephone systems), effective liaison with responsible law enforcement agencies, and a security awareness program for all Corps personnel.

**c.** Permanent hire personnel deemed by the district engineer as being in a noncritical/sensitive position, should undergo limited and/or extended NACI checks.

**d.** All personnel should be trained thoroughly prior to assumption of duties and responsibilities. Training should be designed to accommodate formalized training (classroom), informal training (on-the-job), and on-going training. Passing criteria, evaluation



*Figure 91—Typical protective fence for dam with highway.*

and efficiency ratings should be used to the maximum. Where contract guards are employed, specific levels of proficiency expected should be identified in the contract specification (appendix G).

e. Discussion and/or communications concerning project security measures should be safeguarded. Written communication should be designated "FOR OFFICIAL USE ONLY," and discussion restricted to persons with a need to know. Appropriate secure communications procedures should be used in all transmissions.

f. Because of varying conditions relating

to the location of civil works projects, it may be necessary to develop special security requirements for certain projects. For example, a dam that has a state or Federal highway across the top, transformers, and/or switch yards, may be protected by fencing as shown in figure 91. The primary objective should be to maintain a controlled security posture. Generally, this posture can be attained by imposing reasonable restrictions of free access to critical areas of a project. When establishing the degree of protection necessary, security requirements should be coordinated with the district security officer, who, in turn, should coordinate with local law enforcement agencies in establishing a threat analysis.

Hydroelectric power plants are generally the primary feature of a multipurpose project. They are designed, constructed and operated by the US Army Corps of Engineers with civil funding appropriated by Congress and are located throughout the United States. These facilities are used for:

- Flood control
- Electric power production
- Public recreation
- Fishing
- Boating
- Land conservation
- Forestry.

## 16-4 Critical/Sensitive Functional Areas

The following areas demand security attention:

- Powerhouses
- Switchyards
- Intake/outlet structures
- Transformers
- Generators.

## 16-5 Public Access

a. The general public should be given access to only the visitor's lobby, display areas, overlook facilities, and restrooms associated therewith, unless on a conducted tour under the direct supervision of

Corps personnel. During high visitation periods, trained temporary hire guides may be used to greet the public and conduct supervised tours. Controlled visitation should prevail at all times.

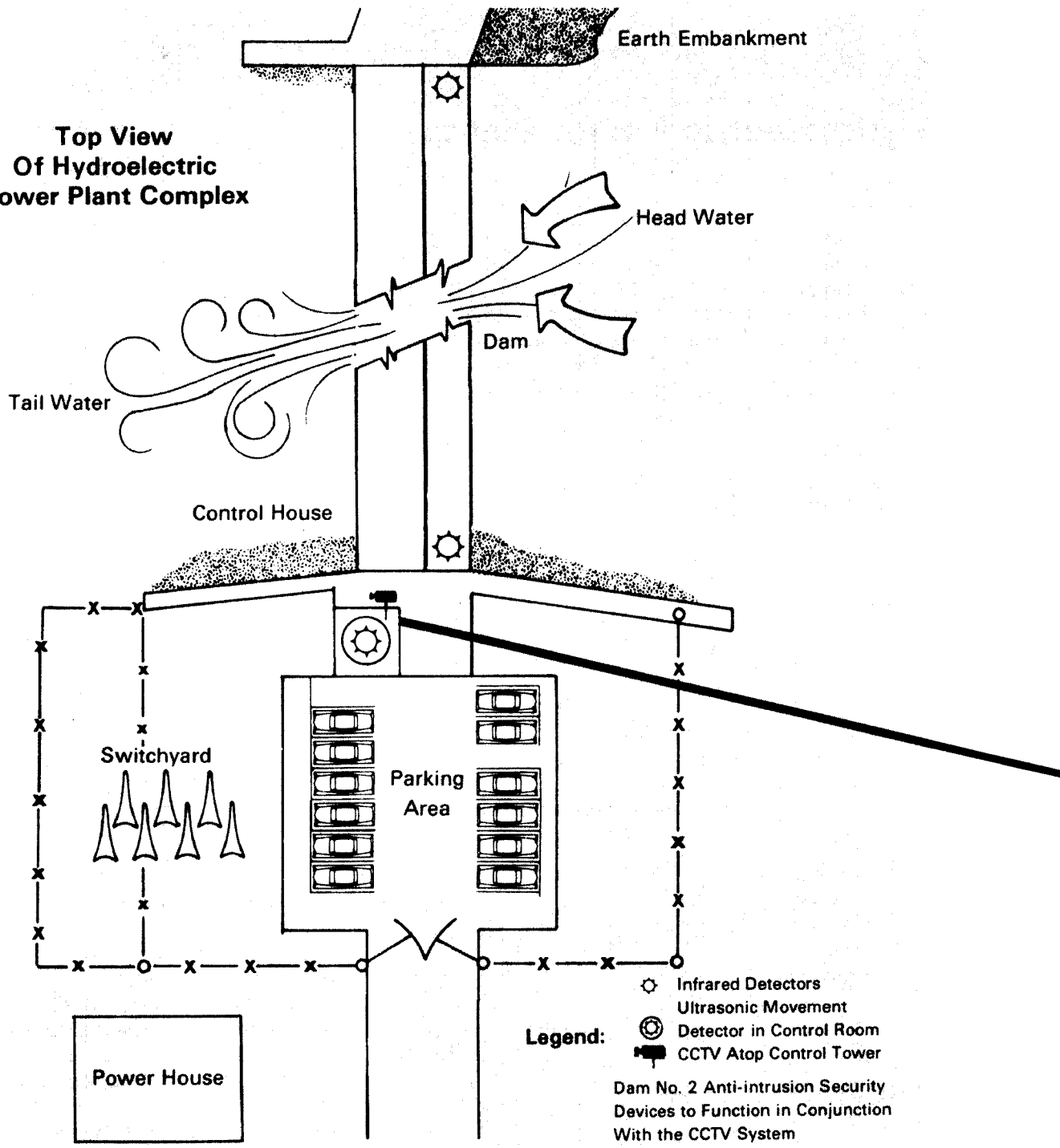
b. Packages, briefcases, camera and gadget bags, suitcases, etc., must not be permitted in any area of the powerhouse.

c. Explosive material should not be allowed within or near the powerhouse or switch yards. Firearms should also be prohibited except when carried by authorized Corps personnel or persons in the law enforcement community. During the winter season, on weekends, holidays, and at other times when public visitor activities cannot be monitored, powerhouse entrances and parking area gates should be kept locked.

## 16-6 Security Measures

- Fence/barriers (chapter 5).
- Protective lighting (chapter 6).
- Intrusion detectors and sensors (chapter 7).
- Metal and explosive detectors (appendix D).
- Access control and identification systems (chapter 4).
- Closed circuit television surveillance (appendix M).
- Lock and key control (chapter 8).
- Security force (chapter 9).
- Contingency forces (chapter 9).
- Contractor personnel (appendix G).

**Top View  
Of Hydroelectric  
Power Plant Complex**



*Figure 92—Sample security setup for dam, including CCTV.*

## 16-7 Intrusion Detection Devices

These devices are especially ideal for remote facilities or land areas adjacent to dam structures. Detailed explanation is contained in specific Corps of Engineers regulations and chapter 7 of this manual.

greatly improve security and public safety, especially for remote facilities such as the following (see appendix M):

- Switchyards
- Transformers
- Head and tail water
- Powerhouse compounds.

## 16-8 Closed Circuit Television

In an effort to monitor personnel activity, the use of CCTV (figure 92) will

## 16-9 Guard Forces

During maximum security condition, security officers should identify areas for guard forces, to include static, mobile, and response force protection.

## Dams

## Section III

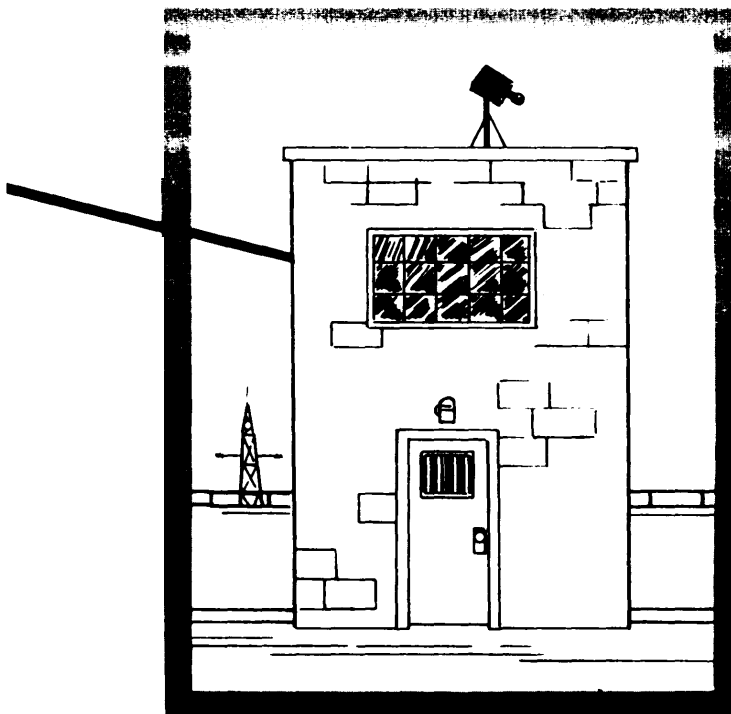


Figure 93-Detail of control structure.

## 16-10 Control Structures

Flood control dams provide flood control as well as water supply, public recreation, fishing, boating, land and forestry conservation.

a. The control structure, generally a concrete tower-type building at the dam site, houses the inlet and outlet control gates and is the critical facility at such projects (figure 93). Project visitation is encouraged; however, public access to control mechanisms should be denied or restrained. Increased physical security measures should be taken to safeguard all facilities housing control mechanisms.

**b.** Since intake valves are critical to the operation of the entire dam structures, the following special security measures should be considered:

**(1)** Use of personnel surveillance/CCTV to detect floating or drifting high explosives into the dam's intake valves.

**(2)** Use of buoy lines or log booms strategically placed in front of intake valves to prevent access.

## **16-11 Protective Lighting**

Protective lighting should be used to illuminate critical control structures and be of sufficient brightness for observation of critical areas such as intake and outlet structures. Transformer decks, generators, switchyards, exterior powerhouse doors/gates should be considered in developing any protective lighting plan.

## **Navigational Locks and Dams**

## **Section IV**

Navigational locks and dams (figure 94) are the primary features of US inland navigational systems located throughout the United States and its possessions. These facilities provide an economical means of water transportation which is critical to the national economy.

### **16-12 Public Access**

**a.** Public visitation and use are encouraged; however, visitor facilities should be developed only where warranted.

**b.** The public should not be allowed access to lock walls, lock and tainter gates, control rooms, operating machinery, or the power supply unless under supervision of Corps personnel.

**c.** All entrance doors to control houses and control shelters for all locks should be kept securely locked at all times.

**d.** During supervised tours, no packages,

briefcases, or suitcases will be permitted in critical areas.

### **16-13 Security Safety**

Access to the lock wall should be secured by fencing (Corps of Engineers Standard Drawing 40-16-08, Type FE-6). Also, at least a 20-foot clear zone should be established.

### **16-14 Protective Lighting**

The following guidelines apply to the use of protective lighting at lock and dam facilities:

Inside and outside chambers.

- Upper and lower gate and controls.
- Dam gate spillway component security.
- Restricted access to system controls.
- Walkways and gate hoists.
- Restricted access to hydraulic structures.

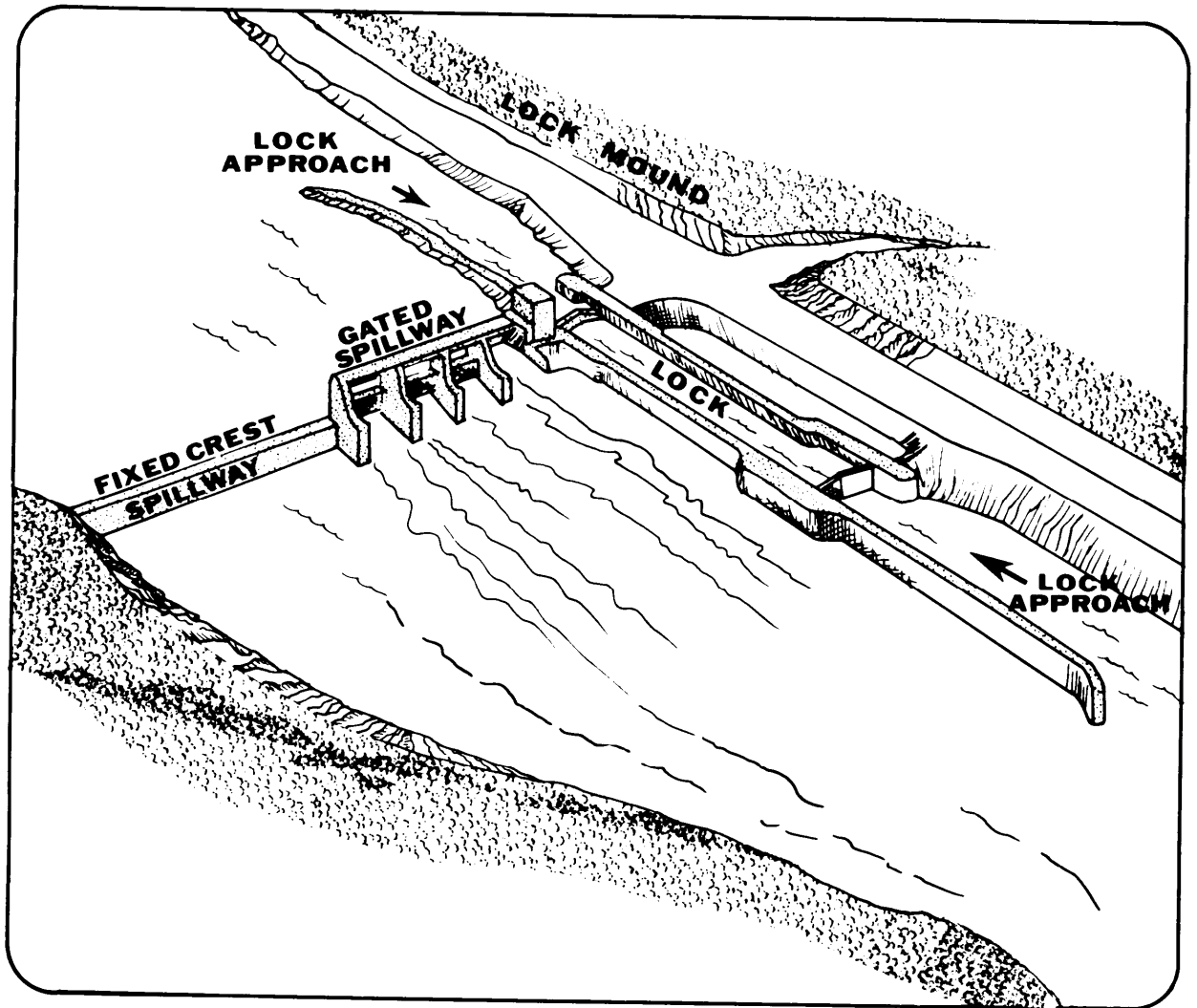


Figure 94—Typical navigational lock and dam.



## 16-15 Inside/Outside Chambers

- Periodic inspection of walls.
- Identify and protect or restrict access to structural areas that could conceal high explosive charges.
- Barriers should be erected to eliminate foot traffic by public and access to tunnels and pumps.

- Periodic inspection of upper and lower gate structures for high explosive charges and for objects that, if pinned in the gates, would cause severe damage to gate structures and supporting hydraulic pumps.
- Consider use of CCTV for visual surveillance of the entire project from control building.

## Floating and Land Plants

## Section V

Land and floating plants (figure 95) support intercostal river navigational systems and ocean ports throughout the United States and its possessions.

### 16-16 Floating Plants

a. Corps of Engineers floating plants include:

- (1) Dredges.
- (2) Barges.
- (3) Tug, tow, snag, derrick and survey boats.
- (4) Work and patrol boats.

#### b. Floating plant security measures:

- (1) Establish a physical security plan for boat operations, drydock or waterborne service.
- (2) Notify civil authorities/Coast Guard in case of emergencies.
- (3) Continual surveillance of area—

during operation, rest breaks, and after termination of workday.

#### c. Vessel damage/larceny prevention measures:

- (1) Brief personnel on the need for security.
- (2) Establish port watch for off-duty periods.
- (3) Use transom locks to secure boat motors.
- (4) Sleep on board vessels when appropriate.
- (5) Remove small boats from the water whenever feasible and place in secure areas. Use of rented marina facilities is encouraged.

d. Security considerations should include the following:

- (1) Sea cocks and valves should be secured to prevent sinking of vessel.
- (2) Electric power source, to include controls, should have security measures applied to restrict access and/or tampering.

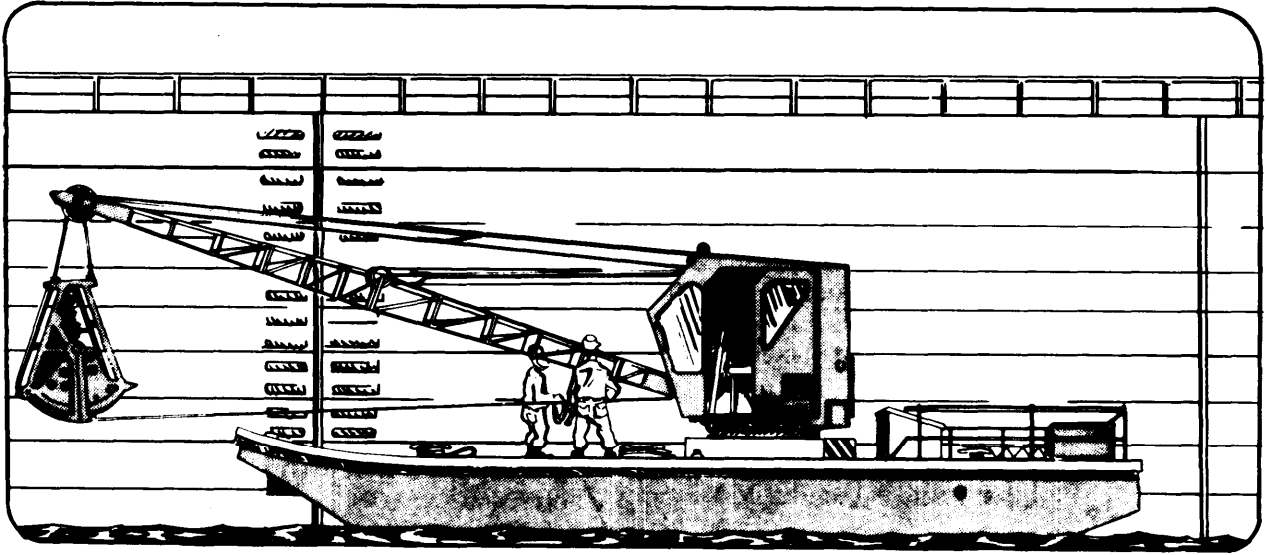


Figure 95—A dredge is one example of a floating plant.

(3) Ground fuel storage tanks and tanks located on vessels should have locking caps and protective lighting.

## 16-17 Land Plants

a. Corps of Engineers land plants include:

- Ports.
- Shipyards and machine shops.
- Harbors.
- Marine terminals.
- Docks and piers.
- Lighthouses.
- Maintenance yards, construction yards, and warehouses.

b. **Land plant security measures.** Standard Corps of Engineers compound perimeter security fences and gates (Standard Drawing 40-16-08, Type FE-6) with clear zones, be secured with a 3-foot-8-inch case

hardened steel chain with case hardened padlocks.

c. **Protective lighting**— see chapter 6.

d. **Building lock and key control systems.**

(1) All exterior doors and high value storage areas should be secured with series 1000 (86), mortise, dead bolt lockset with a 1-inch throw or a case hardened steel hasp and padlock and be rotated annually.

(2) See chapter 8.

(3) All exposed bolts should be protected by a baffle plate (strip of metal overlapping bolt area) to prevent tampering with the bolt.

(4) Exterior doors should have steel frames.

(5) Hingepins should contain security set screws or pins to prevent removal.

(6) Peened or welded hingepins should be the standard, not the exception.

**e. Windows and other openings.**

(1) Ventilation openings should be secured by security screens or bars.

(2) All ground level windows on equipment storage buildings, toolrooms, supply rooms, and other high value storage areas should have security screening of 6-gauge steel mesh with 2-inch diamond grids or steel bars not more than 4 inches apart with horizontal bars welded to vertical bars so that openings do not exceed 32 square inches.

(3) Use of IDS/CCTV should be considered for critical and sensitive areas/structures. (See chapter 7 and appendix M.)

**f. POL security.**

(1) Filler caps to bulk fuel and oil storage tanks should be secured with case hardened steel security type padlocks or equivalent devices.

(2) The electrical power switch to all electric-operated gas pumps are generally left unmarked and are located inside a secured area. Switches are normally turned off during nonduty hours.

(3) Nozzles to gas pumps should be locked with case hardened steel locks/padlocks when not in use.

(4) All POL items (gas, diesel and oil) should be locked during nonduty hours.

**g. Vehicle security.**

(1) Vehicles should be secured at the close of business daily, on weekends and holidays, or when vehicles are to be left unattended/unoccupied. Minimal vehicular security should include the following:

(a) Apply emergency brake.

(b) Place transmission in "Park" position.

(c) Lock steering column/transmission and remove key from vehicle.

(d) Raise all windows to their maximum upward positions.

(e) Remove all extraneous and unmounted property from vehicle (such as radios, equipment, instruments, tools, etc.).

(f) Lock all doors, windows, compartments, hatches, trunks and gas tanks.

(2) Where possible, all vehicles should have lockable gas caps and be parked in a fenced, well-lighted area. Vehicles may be parked in secured engineer equipment storage yards, post motor pools, and other secured US Government agency motor pools or commercial parking areas that have on-duty attendants, provided an agreement is made with the supporting activities.

(3) Privately owned vehicles should not be parked in Engineer motor pools/maintenance areas/equipment storage yards.

(4) Vehicle keys and US Government credit cards must be secured at all times in **separate heavy metal locked cabinets/safes** when vehicles are not on dispatch. Credit cards must be secured by the operator at all times while vehicle is on dispatch and will not be left in vehicle when unattended. All credit cards must be inventoried quarterly by serial number by a disinterested person; and a written record must be retained for 2 years. Any loss/discrepancy must be reported immediately to the security officer.

**16-18 Offices, Warehouses, Etc.**

Corps of Engineers **resident/project engineer offices, warehouses, compounds and auxiliary facilities** are operated throughout the world to provide administrative, technical, and logistical support for the various Corps of Engineers projects cited previously. They provide points of contact for assistance to public users of Corps facilities and recreation areas, and provide ranger support for recreational areas with responsibility for liaison with civil law enforcement and federal investigative agencies.

**a.** The general public should be made to feel welcome; however, their access should be limited to controlled areas. Direct assistance may be provided under emergency conditions when they occur if security aspects are not compromised. Indirect assistance, such as telephonic guidance/direction, etc., will be provided when security aspects are unclear or unknown.

**b. Security measures** for these facilities are the same as defined for land plant facilities in paragraph 16-17.

**c.** Warehouses/storerooms where **nice-to-have/high-value Government property** is stored, should require as a minimum, the following additional security requirements:

- (1) Exterior doors equipped with security type mortise locksets, series 1000 (86) with 1-inch throw or case hardened steel hasps and case hardened steel security padlocks. Locks rotated semi-annually and recorded on the key control register.
- (2) All small high-value items secured in locked containers/cages/room within the warehouse.
- (3) Access restricted to responsible persons.
- (4) Windows covered by security mesh or equivalent aesthetic material.

## 16-19 Construction Projects

**a.** Corps of Engineers military and civil works construction projects are designed and supervised by Corps personnel for execution by civilian contractors throughout the world. **During construction, the contractor has worksite security responsibility**, including Government furnished materials on-site, until accepted by the using agency.

**b. Site security considerations:**

- (1) Presite security conference will be

conducted by key installation personnel, the district security officer, and contractor personnel.

- (2) Follow-up inspections conducted as required.
- (3) Schedule and inventory arrival of equipment and materials in construction priority.
- (4) Secure storage areas and facilities (such as semitrailers).
- (5) Protective lighting/fencing.
- (6) Security forces and auxiliary equipment and liaison with local law enforcement agencies.
- (7) Contractor and subcontractor employee identification.
- (8) Separate employee and project vehicle parking/registration procedures.
- (9) Post-construction inventory of materials by a Corps of Engineers representative.

**c. Tool and equipment security:**

- (1) Gang boxes secured with case hardened hasps and locks.
- (2) Color code/markings of all tools/equipment.
- (3) Frequent inventories/inspections by supervisory personnel.

**d. For buildings, vehicles and equipment security**, see land plant security considerations, paragraph 16-17.

**e. Security of explosives:**

- (1) Military projects secured IAW AR 190-11.
- (2) Civil works projects secured IAW Title XI, Regulations of Explosives (P.L.91-452) and part 181, Title 26, Code of Federal Regulations. Corps of Engineers on-site representative should immediately notify the district security officer when explosives are to be stored on-site. The physical

security officer then should conduct a physical security inspection, preferably with representatives assigned to the Bureau of Alcohol, Tobacco, and Firearms (ATF).

(3) The CFR prescribes **minimum** legal standards of explosive security. On-site

storage usually requires adding additional requirements to contract specifications for daily issue/turn-in/accountability procedures, security fencing, lighting and watchman services. **Failure to comply could result in explosives being stored off-site by the contractor** at his storage area.

## Other Considerations

## Section VI

### 16-20 Control, Warning, And Prohibition Signs

Proper and strategic selection of sign locations will assist greatly in external security measures.

#### a. Control signs.

(1) Used to regulate foot and motor vehicle traffic at entrances and exits to parking and sightseeing areas near project operational areas.

(2) To regulate visitors to recreational and wildlife management areas.

#### b. Warning/prohibition signs.

(1) Displayed in accordance with established policy.

(2) Displayed in areas noticeable to the public and erected according to the degree of security desired or criticality of project operation.

c. **Water release horn** at dams will be specified on signs conspicuously located to warn the public of rush waters (figure 96).

#### d. Sign criteria.

(1) AR 190-13.

(2) AR 380-20.

(3) Internal Security Act 1950.

(4) Appropriate engineer regulations.

### 16-21 Support Agreements

a. Written agreements should be prepared, coordinated, and maintained by the project manager with appropriate state police, and local police authorities when special support requirements are necessary.

#### b. Agreement considerations:

(1) Authority-local authorities jurisdiction.

(2) Response during routine and emergency situations.

(3) Communication checks.

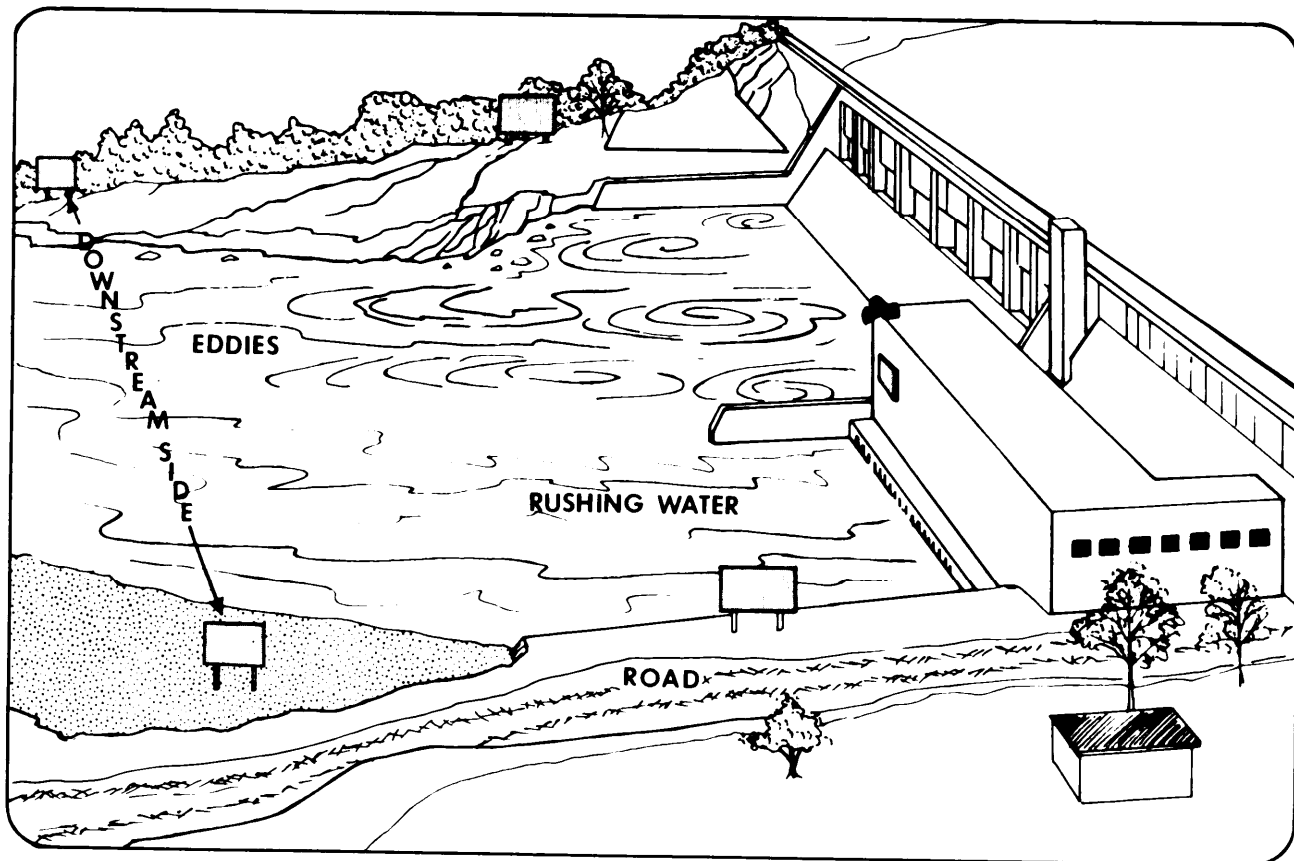


Figure 96—Correctly placed release horn warning signs below a dam.

- (4) IDS interface.
- (5) Emergency Equipment.

### 16-22 Visitor Registers

Visitation room sign-in/sign-out registers should be reviewed every 6 months by security personnel. These can serve as an excellent source for determining visitation patterns involving the same people.

### 16-23 Visitation Room

a. Should be controlled through IDS and CCTV.

b. Periodically inspected for strange objects or stay-behind persons.

c. Located to prevent access to critical facilities.

d. Pamphlets or project cut-away charts, if displayed, should not depict access routes or critical functioning areas of the plant, dam structure or facility.

### 16-24 Impress/Recreation Fee Funds

a. Impress/recreation fee funds should be secured in GSA specified safes or vaults.

**b.** Safes or vaults should be secured to a permanent structural fixture.

**c.** Money should not exceed amounts outlined in appropriate regulations (AR 190-13, AR 37-103, AR 37-103-1, ASPR 3-607.2(c)), and appendix L of this manual.

## **16-25 Contingency Plans**

The following points should be covered in all contingency planning:

**a.** Plant and facility evacuation.

**b.** Public warning in case of actual or possible dam rupture.

**c.** Response force:

**(1)** Airmobile

**(2)** Motor vehicle

**(3)** Foot.

**d.** Isolation of public during hazard conditions (extended rains, etc.).

**e.** Investigating/reporting of crimes against persons and property, fraud and conflict of interest.

**f.** Pursuit operations.

**g.** Bomb threats.