

STANDING INSTRUCTIONS TO THE PROJECT OPERATOR
FOR WATER CONTROL

FULLERTON DAM

EAST FULLERTON CREEK

San Gabriel River Basin

Exhibit A
to the
Water Control Manual
for
Fullerton Dam

Los Angeles District Office
U.S. Army Corps of Engineers

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I. BACKGROUND AND RESPONSIBILITIES.

1-01 General Information.

(1) This exhibit is prepared in accordance with instructions contained in EM 1110-2-3600, paragraph 9-2, (Standing Instructions to Project Operators for Water Control), and ER 1110-2-240, and pertains to duties and responsibilities of dam tenders associated with the operation of Fullerton Dam.

Operational instructions to dam tenders are outlined with specific emphasis on flood emergencies when communication between the dam tender and the LAD Reservoir Operation Center (ROC) have been disrupted. This exhibit is designed to be used as an operational guide for the dam tender to use in implementing the Fullerton Dam and Reservoir Water Control Plan Reservoir Regulation schedule (Exhibit B). Associated plates are contained in the main body of the water control manual.

The dam tender is required to have available at the damsite this water control manual and exhibit, and the current version of other manuals that complement these standing instructions. These manuals are: (a) "Instructions for Reservoir Operations Center Personnel"; (b) "Operation and Maintenance Manual for Fullerton Dam"; and (c) Fullerton Dam Flood Emergency Plan. Any deviation from Standing Instructions will require approval of the District Commander.

(2) The purpose of Fullerton Dam is regulating flood stage flows through East Fullerton Creek, and minimizing flood damage downstream of the structure. The protected area includes the City of Fullerton and development on the adjacent coastal plain. The original (1938) stated purpose (ref. c, pl. 1-01) was protection of "the towns of Fullerton, Placentia, and Anaheim, and the adjacent highly developed agricultural area from floods originating in the watershed above."

(3) Table 9-01 is an organizational chart depicting the chain of command for reservoir regulation decisions.

Gate operation instructions to the dam tender are issued by the Reservoir Regulation Unit. Dam tenders are part of the Operations Branch, under the Construction-Operations Division.

(4) Fullerton Dam is located on East Fullerton Creek, in the San Gabriel River drainage, as seen on plate 2-04. The dam is situated in the eastern Coyote Hills, which provide the last topographic relief before East Fullerton Creek enters the coastal plain. The dam is located in Orange County, one mile south of the intersection of Imperial Highway and Orange Freeway, and approximately 2 miles northeast of the City of Fullerton. The local project area is shown on plate 2-05. Fullerton Dam consists of an earthfilled embankment with outlet works and a detached concrete spillway. The components of Fullerton Dam are shown in the site plan on plate 2-06.

(5) Debris accumulation on the trash racks can be an operational concern. During small inflow events, vegetative debris is primarily caught by the Loftus Diversion Channel debris basin and the natural stand of vegetation upstream of the outlet works. Larger inflows release much of this as a single plug of debris that catches on the trash racks. This debris interferes with visual reading of water surface elevation and can alter the outlet elevation-discharge relationship.

(6) Fullerton Dam is owned, operated, and maintained by the U.S. Army Corps of Engineers, LAD, which has complete regulatory responsibility. Fullerton Dam and Reservoir is operated for local flood control of Fullerton Creek.

1-02 Role of the Project Operator.

(1) Normal Conditions. The Project Operator (Dam tender) will be instructed by the Reservoir Regulation Unit as necessary for water control actions under normal conditions. The dam tender will verify that all equipment at the project is in good operating condition; test-operate gates and electrical facilities in the control house, and inspect all structures and equipment according to a pre-established schedule; and refer to the Operation and Maintenance Manual for instructions on actual operation procedures for all equipment.

(2) Emergency Conditions. The dam tender will be present at the dam during periods of significant runoff, as instructed by the Operations Branch; operate the dam in accordance with instructions from the Reservoir Regulation Section; and follow the Reservoir Regulation Schedule provided in Exhibit B during periods of communication disruption.

II. DATA COLLECTION AND REPORTING.

2-01 Normal Conditions.

(1) During normal conditions, measurements are made daily at 0800 hours local time by the dam tender to determine reservoir staff reading (water surface elevation), float well or manometer gauge "tape" reading, incremental precipitation since last report, total accumulated precipitation for the season, the settings of each outlet gate, and the times of these measurements. This information will be logged on the appropriate forms and reported by radio to the Reservoir Regulation Unit, WUK4ROC as requested.

(2) The dam tender will also maintain records, including water surface elevations, outflow gauge heights, precipitation amounts, outlet gate settings, and log all radio and telephone communications on forms prescribed below.

(a) The Record of Calls Form (SPL-188). This form is used each time a message is transmitted or received by radio or telephone. The purpose of every call will be noted, whether for a radio check, reservoir report, etc.

(b) Flood Control Basin Operation Report Form (SPL-19). The dam tender should log all of the information on this form each time a water surface elevation measurement is taken or a gate change has been completed.

(c) Rainfall Record Form (SPL-31). This form should be filled in each time a rainfall measurement is taken from a glass tube rainfall gauge.

(d) All of these forms should be submitted monthly to the Water Control Data Unit CESPL-ED-HR (BASEYARD) of the Reservoir Regulation Section for archival storage. A copy of each of these forms is included in the Fullerton Dam Water Control Manual in figures 5-01 through 5-04.

2-02 Emergency Conditions.

During flood events, the dam tender should follow instructions as issued by the Reservoir Regulation Section on measurement type and frequency. Due to the speed with which events occur at Fullerton Dam, measurements at fifteen minute intervals are often necessary. When reporting to the Reservoir Regulation Section, the dam tender should clearly describe the silt and debris situation at the trash racks, gates, and downstream gauges. When instruments are not working or are stuck in the silt, the operator should not report the erroneous reading, but should rather state the instrument or staff problem. Care should be taken to avoid issuing misleading reports due to siltation at the reservoir staff boards. When debris or silt causes flows to be deceptively perched above the invert, or causes a loss of contact with the staff board, the dam tender should report a descriptive message identifying the limitations, and quantifying the estimated reservoir depth. If the radio system, including the dam tender's mobile unit, malfunctions, the Reservoir Regulation Section will contact the operator via telephone. It is especially important to maintain all records discussed above during emergency conditions.

2-03 Regional Hydrometeorological Conditions.

Dam tenders will be informed by the Reservoir Regulation Section of regional hydrometeorological conditions that may/will impact the Fullerton Dam. If regional conditions change, the dam tender should notify Reservoir Regulation Section of those conditions.

III. WATER CONTROL ACTION AND REPORTING.

3-01 Normal Conditions.

Except during times of emergency when fast action is critical, the Reservoir Regulation Section must approve all gate changes. The Reservoir Regulation Section will originate the request for a gate change, and will provide settings for both gates whenever a gate change is necessary. Generally, both gates should be set at the same elevation. The dam tender should implement gate changes immediately following acknowledgment of instructions. Delaying a gate change may have serious impacts on affected activities. If other concurrent activities cause a delay in implementation of a gate change, the dam tender should advise the Reservoir Regulation Section by calling radio call sign WUK4ROC and request guidance.

Once a gate change is completed, the dam tender should radio back to the Reservoir Regulation Section (WUK4ROC) to report the time the change was completed, the staff and tape readings, the downstream discharge reading, and the current settings of both gates. All individuals involved should strive to achieve accuracy and complete clarity regarding gate settings.

The two vertical lift gates are electrically controlled from the control house. The dam tender should refer to the O&M Manual for instructions on actual operating procedures.

3-02 Emergency Conditions.

During flood events and other emergency conditions water control actions and reporting are vital to the successful operation of the dam reservoir.

If flooding conditions or some other emergency occurs at the dam, the dam tender should notify the Reservoir Regulation Section as soon as possible with a description of the conditions.

During an emergency condition such as a hazardous chemical spill or a potential drowning where immediate action is necessary, the dam tender should make the appropriate gate changes and report in to the Reservoir Regulation Section as soon as possible.

During a flood event, it is important to maintain the procedures for data collection and water control actions (gate changes) used during normal conditions.

The Reservoir Regulation Section should keep the dam tender apprised of operational objectives and critical operational constraints whenever possible. This will afford the dam tender a greater opportunity to recognize and identify potential problems in the field. The Reservoir Regulation Section may also provide additional water surface elevation criteria, instructing the dam tender to alert them via radio channel WUK4ROC when the reservoir pool reaches the indicated level. Such an action would normally be conducted during periods of intense storm runoff, and would require the operator to remain at the control house.

3-03 Inquiries.

All significant inquiries received by the dam tender from citizens, constituents or interest groups regarding water control procedures or actions must be referred directly to the Reservoir Regulation Section.

3-04 Water Control Problems.

The Reservoir Regulation Section must be contacted immediately by the most rapid means available in the event that an operational malfunction, erosion, or other incident occurred that could impact project integrity in general or water control capability in particular.

Emergency departures from the regulation instructions issued by the Reservoir Regulation Section may be required, because of equipment failures, accidents, or other emergencies requiring immediate action. Under these situations, the dam tender should contact the Reservoir Regulation Section via radio for instructions. When communications are broken, or the situation demands immediate action, the dam tender may proceed independently. The Reservoir Regulation Section should be notified of such actions as soon as possible. All other emergency deviations from normal procedure should be approved in advance by the Reservoir Regulation Section. The District Engineer, Los Angeles District, U.S. Army Corps of Engineers, may make temporary modifications to the water control regulations. Permanent changes are subject to approval by the Division Engineer, South Pacific Division, U.S. Army Corps of Engineers.

The dam tender should immediately alert the Reservoir Regulation Section via radio channel WUK4ROC whenever the requested gate change cannot be fully implemented due to mechanical or other physical problems. For example, debris occasionally prevents total gate closure. The Reservoir Regulation Section will evaluate the problem and provide further instructions to the dam tender.

3-05 Communication Outage.

Coordination of flood control operation is under the direction of the Reservoir Regulation Section, Corps of Engineers, Los Angeles District. During flood periods, close contact will be maintained between operating personnel at Fullerton Dam and the Reservoir Regulation Section in Los Angeles. If communication is broken between the dam tender and the Reservoir Regulation Section, initially continue releases in accordance with the last instructions from the Reservoir Regulation Section, and make every attempt to re-establish communications. If this effort is unsuccessful for one half hour, the dam tender should use water surface elevations and precipitation data to make releases following the Reservoir Regulation Schedule (Exhibit B).

Emergency notifications are normally made by the Reservoir Regulation Section. However, if the dam tender loses communication with the Reservoir Regulation Section, and an emergency notification situation arises, such as an imminent dam failure or uncontrolled spillway flow (water surface

elevation above 290 feet NGVD), the dam tender should make the necessary notifications. The parties listed below are to be immediately notified upon declaration of an uncontrollable emergency.

Orange County Communications Center	714-834-2127
Fullerton Police Department	714-738-6719
Corps Emergency Management Branch	213-894-3440

Notifications should include: (a) description of the type and extent of existing or impending emergency; (b) advisement for evacuation from the flood plain; (c) information on the time of initial release of hazardous amounts of water; (d) the depth of water behind the dam; and (e) the dam tender's name and telephone number.

Upon completing the above notifications, attempt to re-establish communications with the Reservoir Regulation Section. Document all notifications made, and refer to the Orange Book (Instructions for Reservoir Operations Center Personnel) for more information on additional emergency notifications. The dam tender should not leave the dam unless his safety is in jeopardy.