

STANDING INSTRUCTIONS TO THE PROJECT OPERATOR
FOR WATER CONTROL

HANSEN DAM

TUJUNGA CREEK

Los Angeles River Basin

Exhibit A
to the
Water Control Manual
for
Hansen Dam

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

July 1990

STANDING INSTRUCTIONS TO THE PROJECT OPERATOR
FOR WATER CONTROL
HANSEN DAM

TABLE OF CONTENTS

<u>Paragraph</u>	<u>Title</u>	<u>Page</u>
<u>I. BACKGROUND AND RESPONSIBILITIES</u>		
1-01	General Information.....	A-1-1
1-02	Role of the Project Operator.....	A-1-2
	(1) Normal Conditions.....	A-1-2
	(2) Emergency Conditions.....	A-1-2
<u>II. DATA COLLECTION AND REPORTING</u>		
2-01	Normal Conditions.....	A-2-1
2-02	Emergency Conditions.....	A-2-1
2-03	Regional Hydrometeorological Conditions.....	A-2-2
<u>III. WATER CONTROL ACTION AND REPORTING</u>		
3-01	Normal Conditions.....	A-3-1
3-02	Emergency Conditions.....	A-3-1
3-03	Inquiries.....	A-3-2
3-04	Water Control Problems.....	A-3-2
3-05	Communication Outage.....	A-3-2

STANDING INSTRUCTIONS TO THE PROJECT OPERATOR
FOR WATER CONTROL
HANSEN DAM

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 Hansen 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 Hansen Dam Reservoir Regulations 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 Hansen Dam"; and (c) Hansen Dam Flood Emergency Plan. Any deviation from Standing Instructions will require approval of the District Commander.

(2) The purpose of Hansen Dam is regulating flood stage flows through Tujunga Creek, and minimizing flood damage downstream of the structure. Hansen Dam is an essential element for flood control in the Los Angeles River drainage basin. In conjunction with Sepulveda and Lopez Dams, Hansen Dam is vital for the flood protection of lower portions of the San Fernando Valley and the City of Los Angeles. Storage regulation given by the flood control basins permits efficient use of the Los Angeles River Channel. The storage allocation for Hansen Dam is shown on plate 2-2.

(3) Plate 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) Hansen Dam is located near the northern edge of the San Fernando Valley on Tujunga Wash, about one mile below the confluence of Tujunga and Little Tujunga Washes, and about four miles southeast of the town of San Fernando, in Los Angeles County. The boundary of the drainage area is formed by the San Gabriel Mountains on the north and west, and by the Verdugo Mountains and a secondary range of the San Gabriel Mountains on the south and

east. The location of the project is shown on plate 2-1A. The drainage area is shown on plate 2-1B.

(5) Debris accumulation on the trash racks can be an operational concern. Repetitive blocking of the trash racks by floatable debris has threatened the water control regulation of Hansen Dam in the past when it was necessary to bring heavy cranes to pull debris from in front of the trash racks in order to discharge flood waters. Due to past forest fires, Hansen Dam has the heaviest sediment load of COE dams in LAD. These fires have also contributed to floatable debris, which must be monitored and physically removed until trash rack modifications can be implemented.

(6) Hansen Dam was constructed and is owned and operated by the U.S. Army Corps of Engineers, Los Angeles District (LAD), which has complete regulatory responsibility. Hansen Dam is operated for local flood control on Tujunga Wash and is part of the Los Angeles County Drainage Area (LACDA) system for flood control in the Los Angeles River Drainage Area.

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 on week days 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) Record of Data From Digital Recorders Form (SPL 648). This form is filled in once daily at 08:00 when the dam tender reads the recorder drum on the digital punch tape record and logs the number read onto Form SPL 648.

(e) 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 Hansen Dam Water Control Manual in within figure set 9-1 through 9-7.

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. 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 Hansen 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 the gates whenever a gate change is necessary. 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 all 8 gates. All individuals involved should strive to achieve accuracy and complete clarity regarding gate settings.

The eight vertical lift gates are hydraulically 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. Hansen Dam is operated in flood events with all eight gates at standby (1.0 feet open) position until the debris pool elevation of 1010.5 feet NGVD is reached, at which point all gates are opened to 8.0 feet. See Exhibit B.

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 Hansen 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 hour, the dam tender

should use water surface elevations 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 1060 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.

Los Angeles Police Department
(ask for Foothill Division)

818-989-8861

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.