

EXHIBIT A

STANDING INSTRUCTIONS TO THE PROJECT OPERATOR FOR WATER CONTROL

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

Los Angeles District  
U. S. Army Corps of Engineers

December 1989

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TAT MOMOLIKOT DAM AND LAKE SAINT CLAIR

OPERATION DIAGRAM  
(WATER CONTROL RELEASE SCHEDULE)

ELEVATION IN FEET MSL	AREA IN ACRES	STORAGE IN ACRE-FEET	FC CONDUIT CAPACITY IN CFS	SPILLWAY CAPACITY IN CFS
1557.5	19,400	487,066	6,970	250,000
1552.9	17,495	402,421	6,520	162,000
1551.2	16,860	373,222	6,360	134,240
1539.0	11,790	198,547	4,960	0
1515.0	3,098	34,855	580	---
1509.0	2,050	19,562	0	---
1485.0	37	87	---	---
1480.0	0	0	---	---

Action Required When Water Is In The Pools  
Described In The Chart At The Left.

- Conservation pool (to 1509.0 ft, NGVD) will be operated by the Bureau of Indian Affairs (BIA). The civil engineer for the Land Operations Section of the Papago Indian Agency (P.O. Box 578, Sells, AZ, 85634, telephone no. (602) 383-3277 or -3224) shall notify the Los Angeles District (telephone no. (213) 894-4756 or FTS 798-4756) at the end of each month during periods of storage in the reservoir and provide the water surface elevation of the reservoir. Provisional conservation space is part of the reservoir storage volume allocated for sediment. Flash boards may be used to raise the invert elevation of the flood control outlet works to impound 6 additional feet of water from elevation 1509.0 ft, NGVD to elevation 1515.0 ft, NGVD.
- Flood control outlet shall be maintained free of trash and debris. The civil engineer of the Land Operations Section of the Papago Indian Agency shall notify Los Angeles District each day by telephone when in flood control operation and provide the storage, water surface elevation, inflow, outflow measurements and any supplemental information concerning the condition of the dam (cracks, erosion, status of stop logs, etc.). Water surface elevation should be read from the staff gage located on the upstream slope of the dam just east of the conservation outlet works.
- When water rises above the spillway crest, the Los Angeles District will be notified as soon as possible; and again if any problem should develop. The main dam and saddle dikes will be patrolled frequently. Reporting shall continue as specified in paragraph 2 above.
- Should the reservoir water surface elevation rise above 1551.2 ft, NGVD continue patrol of main dam and saddle dikes. Notify Los Angeles District as soon as possible for instructions. Alert residents in the downstream flood plain and prepare for evacuation as required. Reporting shall continue as specified in paragraph 2 above.

SANTA ROSA WASH, ARIZONA  
TAT MOMOLIKOT DAM

OPERATION DIAGRAM

Prepared in accordance with Code of  
Federal Regulations Title 33 Part 208.11

APPROVED: \_\_\_\_\_

APPROVED: \_\_\_\_\_

Effective Date: \_\_\_\_\_

Brigadier General, USA, Division Engineer  
South Pacific Division, Dept. of the Army

Area Director, USA, Bureau of Indian Affairs  
Dept. of Interior

## 1. GENERAL

a. This exhibit is prepared in accordance with instructions contained in EM 1110-2-3600, paragraph 9-02, (Standing Instructions to Project Operators for Water Control), and ETL 1110-2-251 and pertains to duties and responsibilities of the dam tender (in the case of Tat Momolikot Dam, the dam tender is the BIA) in connection with the operation of Tat Momolikot Dam and the reporting of required hydrologic data.

b. Operational instructions to the dam tender (BIA) are outlined with specific emphasis on flood emergencies. This exhibit is designed to be used in conjunction with the rest of the water control manual. Plates and tables referred to in this exhibit that are used in the main body of the water control manual are not duplicated. Other plates or tables such as chain of command for reservoir operations decisions, etc., that are in the main body of the manual are referenced in this exhibit as necessary. This avoids duplication of work and the possibility of two versions of the table in the same water control manual.

c. The dam tender is required to have available at the dam other pertinent books that complement these standing instructions. These books are the current year's Orange Book - "Instructions for Reservoir Operations Center Personnel," and the "Operation and Maintenance Manual for Tat Momolikot Dam."

## 2. RESERVOIR OPERATIONAL REQUIREMENTS

The flood control objective for Tat Momolikot Dam is to minimize flood damage and the flood risk to public safety along the Santa Rosa Wash downstream from the dam. See paragraph 7-05 for a detailed description of the flood control operation of Tat Momolikot Dam.

## 3. OPERATIONAL RESPONSIBILITIES

The primary responsibilities for operating Tat Momolikot Dam are delegated to units of the Bureau of Indian Affairs (BIA) and Engineering Division and Construction-Operation Division of the Los Angeles District (LAD), U.S. Army Corps of Engineers, as outlined below. The chain of command for reservoir operations decisions in the LAD is given in Table 9-01.

a. The Reservoir Regulation Unit (Reservoir Regulation Section, H&H Branch, Engineering Division) responsibilities are:

(1) Obtain current hydrometeorological data and weather forecasts for the region.

(2) Establish and update water control criteria for flood and nonflood periods and document in water control manual.

(3) Monitor meteorologic conditions, activate the Reservoir Operations Center (ROC), analyze current reservoir and hydrologic data, and issue appropriate water control instructions to the BIA (dam tender).

(4) Initiate the call out of mobile channel observation teams.

(5) Coordinate the control of water with, and make notifications to pertinent organizations. Keep up to date on all temporary conditions and actions that are restrictive or that require a change to established water control practices.

(6) Prepare reports relative to the control of water at the reservoir and keep district management and higher authority offices informed of ongoing water control activities.

(7) Advise the District Engineer, through the chain of command, whenever there is evidence that Tat Momolikot Dam will not be able to provide flood protection along the Santa Rosa Wash.

b. The Water Control Data Unit (Reservoir Regulation Section, H&H Branch, Engineering Division) responsibilities are:

(1) Assist in the operation and maintenance of all hydrologic recording and telemetry system equipment as requested.

(2) Calculate and maintain a record of all hydrologic data including stage, inflows, outflows, storage, weather data, etc.

c. The Dam Tender's (BIA's) responsibilities are:

(1) Be present at the dam when significant rainfall or runoff occurs or as requested by the Reservoir Regulation Unit through appropriate organization channels.

(2) Ensure that all equipment at the project, including recording and indicating gages, gate mechanisms, power units, etc., are in good operating condition.

(3) Record and report all pertinent conditions at the dam such as erosion problems, condition of the embankment, hydraulic connections of stage recorders, hazardous public actions at the project, intensity of rainfall, and any other conditions pertinent to the safe and successful operation of the dam.

(4) Maintain records, including water surface elevations, precipitation amounts, and a log of all communications.

(5) Periodically test/operate the mechanical and electrical facilities and inspect all structures and equipment according to the preestablished schedule.

(6) Refer to the O&M manual for the instructions on actual operating procedures for all mechanical equipment.

#### 4. GATE/VALVE OPERATION

There are no flood control outlet gates at Tat Momolikot Dam.

#### 5. NORMAL OPERATION PROCEDURES

Tat Momolikot Dam under normal operation procedures is operated as a multiple-purpose facility on Santa Rosa Wash according to the Operation Diagram provided at the front of this exhibit. The flood control outlet is ungated, so no regulation of flows through the flood control outlet can be achieved. For more information on flood control operation see paragraph 7-05 in the main text.

#### 6. LIMITATIONS ON STORAGE

There are no legal limitations on storage, as the project boundary is above the maximum conservation pool water surface elevation of 1515.0 ft, NGVD.

#### 7. LIMITATIONS ON RELEASES

The maximum discharge that can be released without exceeding the downstream channel capacity is 5,000 cfs. This release would be nearly achieved when the flood control outlet conduit was flowing full and the water surface elevation reached the spillway crest at 1539.0 ft, NGVD.

#### 8. EMERGENCY DEVIATION FROM NORMAL REGULATION

Emergency departures from the regulation instructions issued by the ROC or the BIA may be required because of operating equipment failures, accidents such as a drowning, or other emergencies that require immediate action. The dam tender should contact the ROC when possible by telephone for instructions when the deviation involves flood control. The BIA's main office and other agencies should be informed as soon as practical. In most cases the dam tender will be required to act independently of others' instructions due to the lack of communication facilities at the dam. The ROC and BIA should be notified of departures from normal regulation as soon as possible. All other nonemergency deviations should be approved by the ROC and BIA in advance.

#### 9. EMERGENCY NOTIFICATIONS

Emergency notifications to local emergency officials are normally made by the BIA dam tender. The BIA's Supervisory Civil Engineers of Land Operations for the Papago Agency are authorized to make flood warnings on behalf of the BIA concerning water release from the dam.

The parties listed below are to be notified immediately upon declaration of an uncontrollable emergency. Notification should include: (a) description of the type and extent of emergency that exists or is impending; (b) advice to evacuate people from flood plains; (c) information on the time that the release of hazardous amounts of water began or is estimated to begin; and (d) the name of the person making the notification and a telephone number where an informed BIA representative can be reached.

- a. Tohono O'odham Tribal Police Department (602) 383-3280
- b. Pinal County Sheriff's Office in Stanfield (602) 836-8226  
1-800-352-3796

Upon completing the above notifications, the LAD office should be contacted. Document all notifications made and refer to the Orange Book, "Instructions for Reservoir Operations Center Personnel", for more information on additional desirable emergency notifications.

#### 10. MEASUREMENT OF HYDROLOGIC DATA

All measurements taken should be documented. During flood situations hourly measurements are usually sufficient. Measurements should include the reservoir staff reading (water surface elevation), the "tape" reading, incremental precipitation since the last reading, the time of these measurements, and the initiation and termination of spillway flow. When reporting these measurements, the dam tender should clearly describe the silt and debris situation at the outlet conduit. When instruments are not working properly or are stuck in the silt, the dam tender should not report the erroneous reading, but should rather state the instrument or staff problem. When debris or silt cause the flows to be deceptively perched above the invert or result in a loss of contact with a staff board, the dam tender should report a descriptive message identifying the limitation and quantifying the average streamflow depth and width or estimated reservoir depth as appropriate.

#### 11. REPORTS

There are no permanent attendants, telephones, or radios located at Tat Momolikot Dam. Communication with the dam tender can only be achieved away from the damsite. The BIA will notify the Reservoir Regulation Unit (telephone no. (213) 894-4756) when any of the following conditions occur: rainfall of 1 1/2 inches at Tat Momolikot Dam or at Casa Grande, and when the water surface elevation reaches 1505.0 ft, NGVD. Every call made will be noted, whatever its purpose.

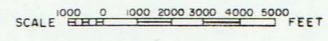
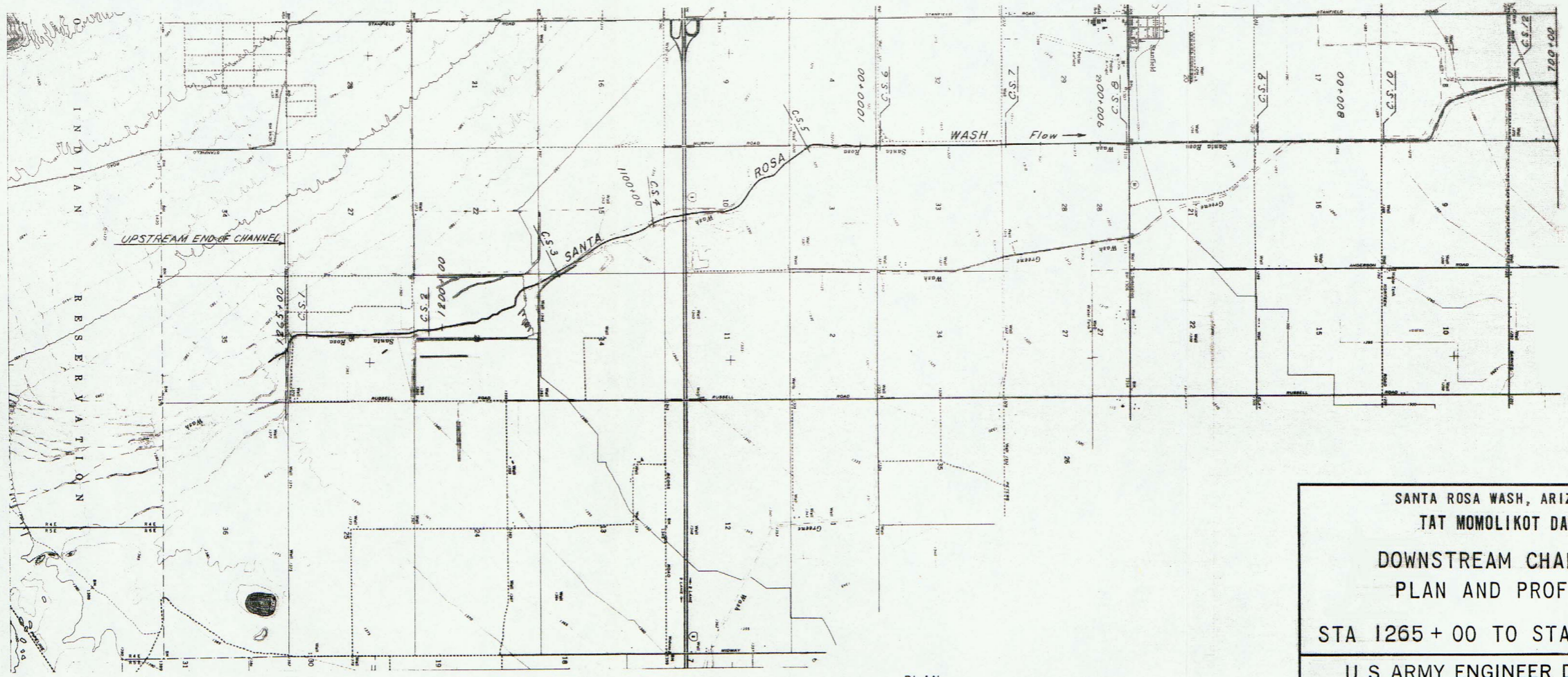
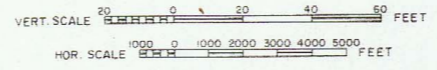
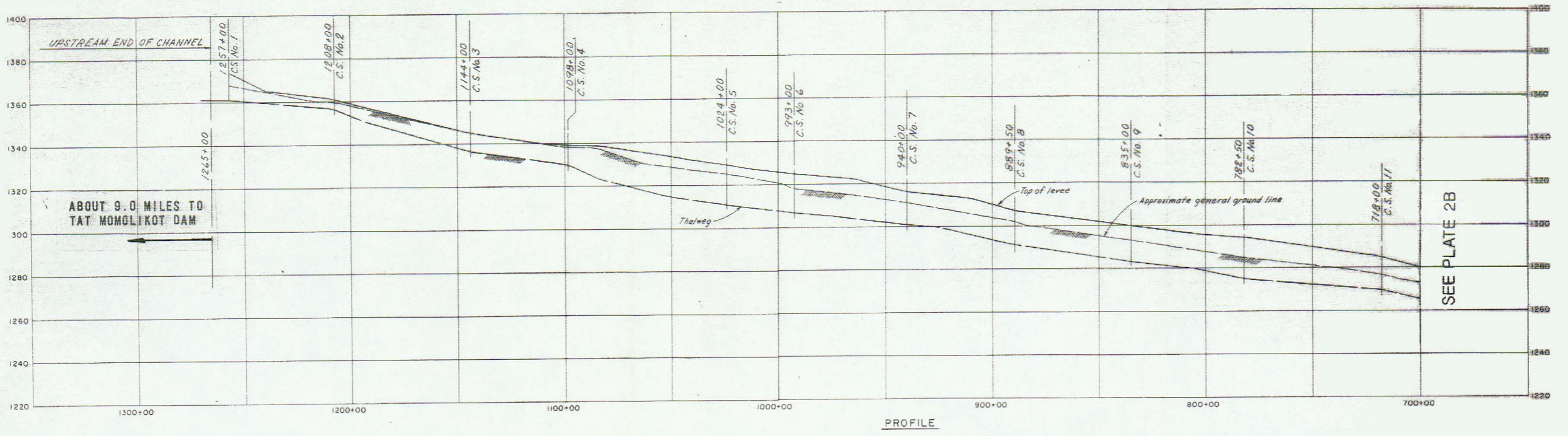
EXHIBIT B

EXISTING CHANNEL ON SANTA ROSA WASH

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

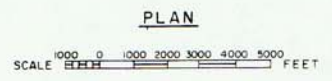
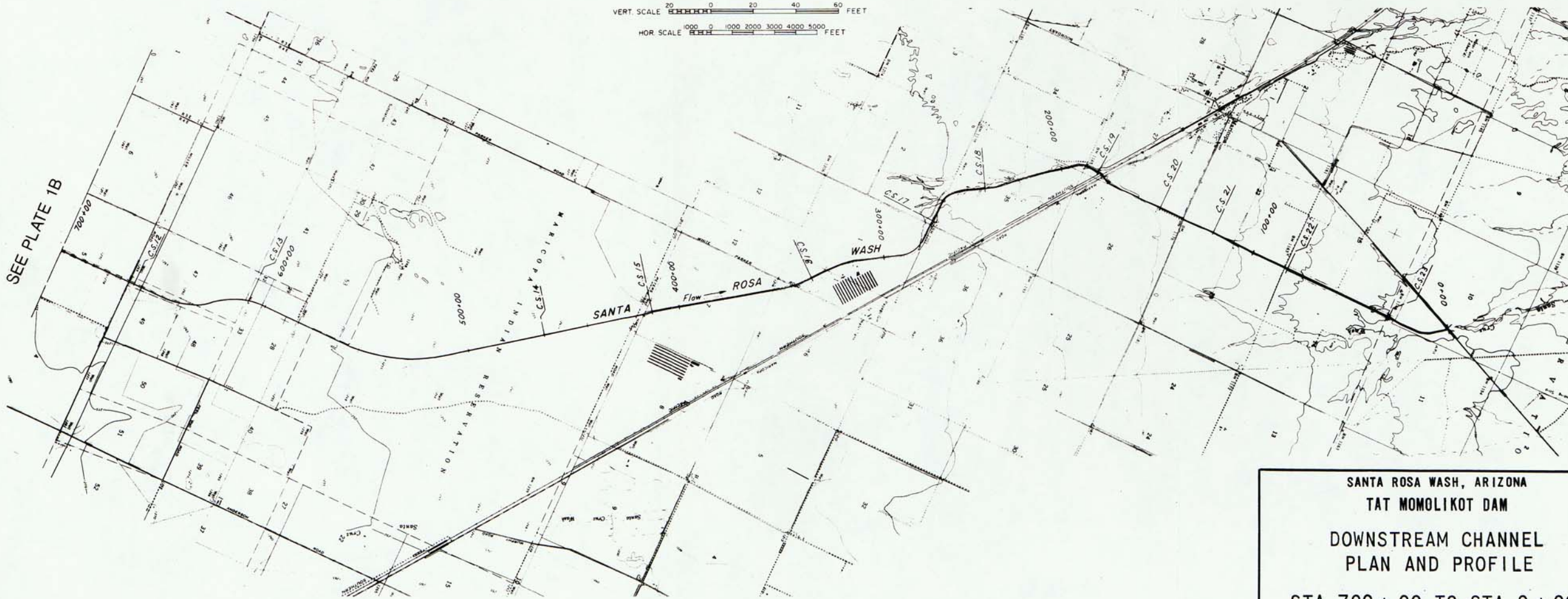
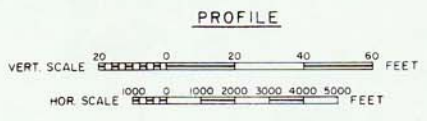
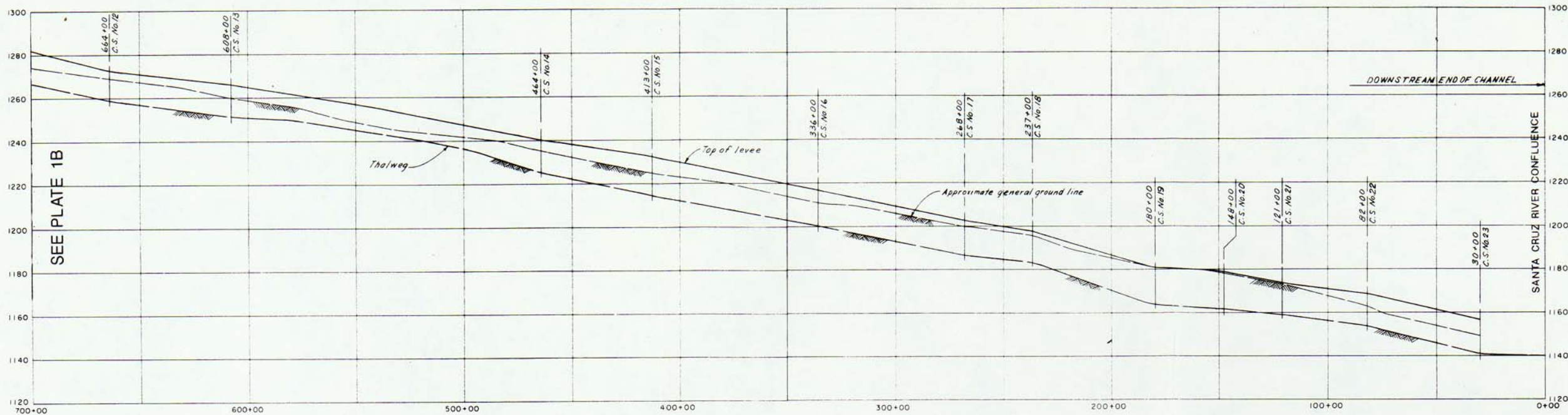
Los Angeles District  
U. S. Army corps of Engineers

December 1989

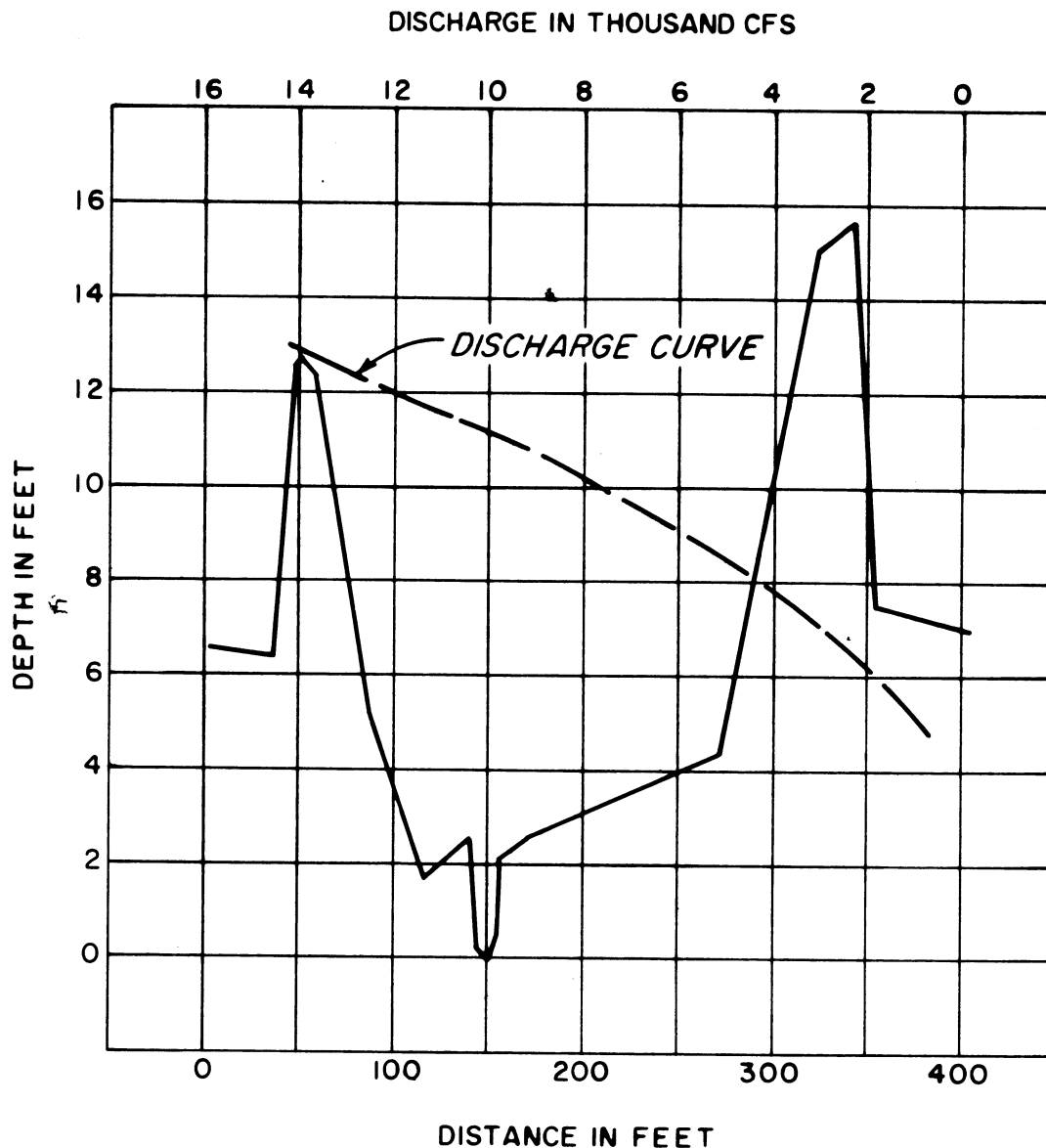


SANTA ROSA WASH, ARIZONA  
 TAT MOMLIKOT DAM  
 DOWNSTREAM CHANNEL  
 PLAN AND PROFILE  
 STA 1265 + 00 TO STA 700 + 00  
 U S ARMY ENGINEER DISTRICT  
 LOS ANGELES, CORPS OF ENGINEERS





SANTA ROSA WASH, ARIZONA  
 TAT MOMOLIKOT DAM  
 DOWNSTREAM CHANNEL  
 PLAN AND PROFILE  
 STA 700 + 00 TO STA 0 + 00  
 U S ARMY ENGINEER DISTRICT  
 LOS ANGELES, CORPS OF ENGINEERS



\*NOTE: CROSS-SECTIONAL PLOTS AND DISCHARGE CURVES FOR CROSS-SECTIONS 2 THROUGH 23 ARE AVAILABLE AT THE LAD OFFICES

SANTA ROSA WASH, ARIZONA  
 TAT MOMOLIKOT DAM  
**CROSS SECTION NO. 1**  
**STA. 1257+00**  
 U. S. ARMY ENGINEER DISTRICT  
 LOS ANGELES, CORPS OF ENGINEERS

EXHIBIT C

CODE OF FEDERAL REGULATIONS,  
TITLE 33, PARAGRAPH 208.11

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

Los Angeles District  
U. S. Army Corps of Engineers

December 1989

'absence of any indication that further public comment would shed any new light on the matter, OSHA concludes that no change in the standard is warranted. Accordingly, the ground-fault protection standard at 29 CFR 1910.309(c) and 29 CFR 1926.400(h), as promulgated on December 21, 1976, is hereby reaffirmed.

(Secs. 6(b) and 8(c), Pub. L. 91-596, 84 Stat. 1593, 1599 (29 U.S.C. 655, 657); sec. 107, Pub. L. 91-54, 83 Stat. 96 (40 U.S.C. 333); Secretary of Labor's Order No. 8-76 (41 FR 25059); 29 CFR Part 1911.)

Signed at Washington, D.C., this 3d day of October 1978.

EULA BINGHAM,  
Assistant Secretary of Labor.

(FR Doc. 78-28687 Filed 10-12-78; 8:45 am)

[3710-92-M]

**Title 33—Navigation and Navigable Waters**

**CHAPTER II—CORPS OF ENGINEERS,  
DEPARTMENT OF THE ARMY**

(ER 1110-2-241)

**PART 208—FLOOD CONTROL  
REGULATIONS**

**Use of Storage Allocated for Flood  
Control and Navigation Purposes**

AGENCY: U.S. Army Corps of Engineers, DOD.

ACTION: Final rule.

SUMMARY: This revision of 33 CFR 208.11 regulations prescribes the policy and procedure for regulating reservoir projects capable of regulation for flood control or navigation and the use of storage allocated for such purposes and provided on the basis of flood control and navigation. The revised regulations are applicable to dam and reservoir projects licensed, maintained, and operated under provisions of the Federal Power Act (41 Stat. 1063 (16 U.S.C. 791(A))), Pub. L. 83-436, and other similar authorizing legislation; as well as to reservoir projects constructed wholly or in part with Federal funds as directed by section 7 of the Flood Control Act of 1944. These regulations are intended to establish an understanding between project owners, operating agencies and the Corps of Engineers with regard to certain activities and responsibilities concerning water control management throughout the Nation in the interest of flood control and navigation. Interested persons were given until November 2, 1977 (42 FR 57141) to submit comments. No written comments were received.

DATES: This regulation is effective on October 15, 1978.

ADDRESSES: HQDA (DAEN-CWE-HY) Washington, D.C. 20314.

**FOR FURTHER INFORMATION CONTACT:**

Mr. Edgar P. Story, Engineering Division, Civil Works Directorate, Office of the Chief of Engineers, Washington, D.C. 20314 202-693-7330.

**SUPPLEMENTARY INFORMATION:** This final regulation is essentially the same as the proposed rule (42 FR 53637), however, certain reordering has been done of the reference material presented in § 208.11(b). Specifically, excerpts from sections 4(e), 10(a), and 10(c) of the Federal Power Act have been added for improved clarity. Also Federal Power Commission order No. 540 issued October 31, 1975, and published November 7, 1975 (40 FR 51998), amending § 2.9 of the Commission's general policy and interpretations which prescribed standardized conditions (Forms) for inclusion in preliminary permits and licenses issued under part I of the Federal Power Act has been cited and appropriately excerpted. Reference to and citation from article 33 of Federal Power Commission license No. 2009 have been deleted in lieu thereof.

In addition to the proposed action, certain project names and pertinent data are added to and deleted from the list of projects shown in § 208.11(e), list of projects (42 FR 53637). The following projects are added to the list of projects:

- (a) U.S. Army Corps of Engineers, Missouri River Division area: Webster Dam and Lake.
- (b) U.S. Army Corps of Engineers, New England Division area:
  - (i) Bear Swamp Pumped Storage Project.
  - (ii) Turners Falls Reservoir.
- (c) U.S. Army Corps of Engineers, North Pacific Division area:
  - (i) American Falls Dam and Reservoir.
  - (ii) Anderson Ranch Dam and Reservoir.
  - (iii) Arrowrock Dam and Reservoir.
  - (iv) Brownlee Dam and Reservoir.
  - (v) Grand Coulee Dam and Franklin D. Roosevelt Lake.
  - (vi) Hells Canyon Dam and Reservoir.
  - (vii) Kerr Dam and Flathead Lake.
  - (viii) Mayfield Dam and Reservoir.
  - (ix) Mossyrock Dam and Davisson Lake.
  - (x) Oxbow Dam and Reservoir.
  - (xi) Priest Rapids Dam and Reservoir.
  - (xii) Ririe Dam and Reservoir.
  - (xiii) Rocky Reach Dam and Lake Entiat.
  - (xiv) Ross Dam and Reservoir.
  - (xv) Upper Baker Dam and Baker Lake.

- (xvi) Wanapum Dam and Reservoir.
- (xvii) Wells Dam and Lake Pateros.
- (d) U.S. Army Corps of Engineers, South Atlantic Division area: Lewis M. Smith Dam and Reservoir.
- (e) U.S. Army Corps of Engineers, South Pacific Division area:
  - (i) Indian Valley Dam and Reservoir.
  - (ii) Lemon Dam and Reservoir.
  - (iii) Navajo Dam and Reservoir.
  - (iv) Paoiina Dam and Reservoir.
  - (v) Vallecito Dam and Reservoir.

The following projects are deleted from the list of projects:

- (a) U.S. Army Corps of Engineers, South Atlantic Division area: H. Neely Henry Dam and Reservoir.
- (b) U.S. Army Corps of Engineers, South Pacific Division area:
  - (i) Causey Dam and Reservoir.
  - (ii) Devil Creek Dam and Reservoir.

**NOTE:**—The Chief of Engineers has determined that this rule does not contain a major proposal requiring preparation of an inflation impact statement under Executive Order 11821 and OMB Circular A-107 (Statutory Authority Pub. L. 90-483).

Dated: October 10, 1978.

CHARLES I. MCGINNIS,  
Major General, USA,  
Director of Civil Works.

Section 208.11 is revised to read as follows:

§ 208.11 Regulations for use of storage allocated for flood control or navigation and/or project operation at reservoirs subject to prescription of rules and regulations by the Secretary of the Army in the interest of flood control and navigation.

(a) *Purpose.* This regulation prescribes the responsibilities and general procedures for regulating reservoir projects capable of regulation for flood control or navigation and the use of storage allocated for such purposes and provided on the basis of flood control and navigation, except projects owned and operated by the Corps of Engineers; the International Boundary and Water Commission, United States and Mexico; and those under the jurisdiction of the International Joint Commission, United States, and Canada, and the Columbia River Treaty. The intent of this regulation is to establish an understanding between project owners, operating agencies, and the Corps of Engineers.

(b) *Responsibilities.* The basic responsibilities of the Corps of Engineers regarding project operation are set out in the cited authority and described in the following paragraphs:

(1) Section 7 of the Flood Control Act of 1944 (58 Stat. 890, 33 U.S.C. 709) directs the Secretary of the Army to prescribe regulations for flood control and navigation in the following manner:

Hereafter, it shall be the duty of the Secretary of War to prescribe regulations for the use of storage allocated for flood control or navigation at all reservoirs constructed wholly or in part with Federal funds provided on the basis of such purposes, and the operation of any such project shall be in accordance with such regulations: *Provided*, That this section shall not apply to the Tennessee Valley Authority, except that in case of danger from floods on the lower Ohio and Mississippi Rivers the Tennessee Valley Authority is directed to regulate the release of water from the Tennessee River into the Ohio River in accordance with such instructions as may be issued by the War Department.

(2) Federal Energy Regulatory Commission (formerly Federal Power Commission (FPC)) licenses.

(i) Responsibilities of the Secretary of the Army and/or the Chief of Engineers in Federal Energy Regulatory Commission (FERC) licensing actions are set out in the Federal Power Act. Pertinent sections of that Act are cited herein. The Commission may also stipulate, as part of license conditions, that the licensee enter into an agreement with the Department of the Army providing for operation of the project during flood times, in accordance with rules and regulations prescribed by the Secretary of the Army.

(A) Section 4(e) of the Federal Power Act requires approval by the Chief of Engineers and the Secretary of the Army of plans of dams or other structures affecting the navigable capacity of any navigable waters of the United States, prior to issuance of a license by the Commission as follows:

The Commission is hereby authorized and empowered to issue licenses to citizens . . . for the purpose of constructing, operating, and maintaining dams, water conduits, reservoirs, powerhouses, transmission lines, or other project works necessary or convenient for the development and improvement of navigation and for the development, transmission, and utilization of power across, along, from or in any of the streams or other bodies of water over which Congress has jurisdiction . . . *Provided further*, That no license affecting the navigable capacity of any navigable waters of the United States shall be issued until the plans of the dam or other structures affecting navigation have been approved by the Chief of Engineers and the Secretary of the Army.

(B) Sections 10(a) and 10(c) of the Federal Power Act specify conditions of project licenses including the following:

(1) Section 10(a). That the project adopted . . . shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use of benefit of interstate or foreign commerce, for the improvement and utilization of waterpower development, and for other beneficial public use . . .

(2) Section 10(c). That the licensee shall . . . so maintain and operate said works as

not to impair navigation, and shall conform to such rules and regulations as the Commission may from time to time prescribe for the protection of life, health, and property. . . .

(C) Section 18 of the Federal Power Act directs the operation of any navigation facilities built under the provision of that act, be controlled by rules and regulations prescribed by the Secretary of the Army as follows:

The operation of any navigation facilities which may be constructed as part of or in connection with any dam or diversion structure built under the provisions of this Act, whether at the expense of a licensee hereunder or of the United States, shall at all times be controlled by such reasonable rules and regulations in the interest of navigation; including the control of the pool caused by such dam or diversion structure as may be made from time to time by the Secretary of the Army. . . .

(ii) Federal Power Commission order No. 540 issued October 31, 1975, and published November 7, 1975 (40 FR 51998), amending section 2.9 of the Commission's general policy and interpretations prescribed standardized conditions (forms) for inclusion in preliminary permits and licenses issued under part I of the Federal Power Act. As an example, article 12 of standard form L-3, titled: "Terms and Conditions of License for Constructed Major Projects Affecting Navigable Waters of the United States," sets out the Commission's interpretation of appropriate sections of the Act, which deal with navigation aspects, and attendant responsibilities of the Secretary of the Army in licensing actions as follows:

The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operation of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property. . . . and the Licensee shall release water from the project reservoir at such rate . . . as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

(3) Section 9 of Public Law 436, 83d Congress (68 Stat. 303) provides for the development of the Coosa River, Ala. and Ga., and directs the Secretary of the Army to prescribe rules and regulations for project operation in the interest of flood control and navigation as follows:

The operation and maintenance of the dams shall be subject to reasonable rules and regulations of the Secretary of the Army in the interest of flood control and navigation.

**Note.**—This Regulation will also be applicable to dam and reservoir projects operated under provisions of future legislative acts wherein the Secretary of the Army is directed to prescribe rules and regulations in the interest of flood control and navigation. The Chief of Engineers, U.S. Army Corps of Engineers, is designated the duly authorized representative of the Secretary of the Army to exercise the authority set out in the congressional acts. This regulation will normally be implemented by letters of understanding between the Corps of Engineers and project owner and will incorporate the provisions of such letters of understanding prior to the time construction renders the project capable of significant impoundment of water. A water control agreement signed by both parties will follow when deliberate impoundment first begins or at such time as the responsibilities of any corps-owned projects may be transferred to another entity. Promulgation of this regulation for a given project will occur at such time as the name of the project appears in the FEDERAL REGISTER in accordance with the requirements of § 208.11(d)(11). When agreement on a water control plan cannot be reached between the corps and the project owner after coordination with all interested parties, the project name will be entered in the FEDERAL REGISTER and the Corps of Engineers plan will be the official water control plan until such time as differences can be resolved.

(c) *Scope and terminology.* This regulation applies to Federal authorized flood control and/or navigation storage projects, and to non-Federal projects which require the Secretary of the Army to prescribe regulations as a condition of the license, permit or legislation, during the planning, design and construction phases, and throughout the life of the project. In compliance with the authority cited above, this regulation defines certain activities and responsibilities concerning water control management throughout the Nation in the interest of flood control and navigation. In carrying out the conditions of this regulation, the owner and/or operating agency will comply with applicable provisions of Pub. L. 85-624, the Fish and Wildlife Coordination Act of 1958, and Pub. L. 92-500, the Federal Water Pollution Control Act Amendments of 1972. This regulation does not apply to local flood protection works governed by § 208.10, or to navigation facilities and associated structures which are otherwise covered by part 207 (Navigation Regulations) of title 33 of the code. Small reservoirs, containing less than 12,500 acre-feet of flood control or navigation storage, may be excluded from this regulation and covered under § 208.10, unless specifically required by law or conditions of the license or permit.

(1) The terms "reservoir" and "project" as used herein include all water resource impoundment projects constructed or modified, including natural lakes, that are subject to this regulation.

(2) The term "project owner" refers to the entity responsible for maintenance, physical operation, and safety of the project, and for carrying out the water control plan in the interest of flood control and/or navigation as prescribed by the Corps of Engineers. Special arrangements may be made by the project owner for "operating agencies" to perform these tasks.

(3) The term "letter of understanding" as used herein includes statements which consummate this regulation for any given project and define the general provisions or conditions of the local sponsor, or owner, cooperation agreed to in the authorizing legislative document, and the requirements for compliance with section 7 of the 1944 Flood Control Act, the Federal Power Act or other special congressional act. This information will be specified in the water control plan and manual. The letter of understanding will be signed by a duly authorized representative of the Chief of Engineers and the project owner. A "field working agreement" may be substituted for a letter of understanding, provided that the specified minimum requirements of the latter, as stated above, are met.

(4) The term "water control agreement" refers to a compilation of water control criteria, guidelines, diagrams, release schedules, rule curves and specifications that basically govern the use of reservoir storage space allocated for flood control or navigation, and/or release functions of a water control project for these purposes. In general, they indicate controlling or limiting rates of discharge and storage space required for flood control and/or navigation, based on the runoff potential during various seasons of the year.

(5) For the purpose of this regulation, the term "water control plan" is limited to the plan of regulation for a water resources project in the interest of flood control and/or navigation. The water control plan must conform with proposed allocations of storage capacity and downstream conditions or other requirements to meet all functional objectives of the particular project, acting separately or in combination with other projects in a system.

(6) The term "real-time" denotes the processing of current information or data in a sufficiently timely manner to influence a physical response in the system being monitored and controlled. As used herein the term connotes . . . the analyses for and execution of water control decisions for both minor and major flood events and for navigation, based on prevailing hydrometeorological and other conditions and constraints, to achieve efficient management of water resource systems.

(d) *Procedures.* (1) *Conditions during project formulation.* During the planning and design phases, the project owner should consult with the Corps of Engineers regarding the quantity and value of space to reserve in the reservoir for flood control and/or navigation purposes, and for utilization of the space, and other requirements of the license, permit or conditions of the law. Relevant matters that bear upon flood control and navigation accomplishment include: runoff potential, reservoir discharge capability, downstream channel characteristics, hydrometeorological data collection, flood hazard, flood damage characteristics, real estate acquisition for flowage requirements (fee and easement), and resources required to carry out the water control plan. Advice may also be sought on determination of and regulation for the probable maximum or other design flood under consideration by the project owner to establish the quantity of surcharge storage space, and freeboard elevation of top of dam or embankment for safety of the project.

(2) *Corps of Engineers involvement.* If the project owner is responsible for real-time implementation of the water control plan, consultation and assistance will be provided by the Corps of Engineers when appropriate and to the extent possible. During any emergency that affects flood control and/or navigation, the Corps of Engineers may temporarily prescribe regulation of flood control or navigation storage space on a day-to-day (real-time) basis without request of the project owner. Appropriate consideration will be given for other authorized project functions. Upon refusal of the project owner to comply with regulations prescribed by the Corps of Engineers, a letter will be sent to the project owner by the Chief of Engineers or his duly authorized representative describing the reason for the regulations prescribed, events that have transpired, and notification that the project owner is in violation of the Code of Federal Regulations. Should an impasse arise, in that the project owner or the designated operating entity persists in noncompliance with regulations prescribed by the Corps of Engineers, measures may be taken to assure compliance.

(3) *Corps of Engineers implementation of real-time water control decisions.* The Corps of Engineers may prescribe the continuing regulation of flood control storage space for any project subject to this regulation on a day-to-day (real-time) basis. When this is the case, consultation and assistance from the project owner to the extent possible will be expected. Special requests by the project owner, or appropriate operating entity, are preferred

before the Corps of Engineers offers advice on real-time regulation during surcharge storage utilization.

(4) *Water control plan and manual.* Prior to project completion, water control managers from the Corps of Engineers will visit the project and the area served by the project to become familiar with the water control facilities, and to insure sound formulation of the water control plan. The formal plan of regulation for flood control and/or navigation, referred to herein as the water control plan, will be developed and documented in a water control manual prepared by the Corps of Engineers. Development of the manual will be coordinated with the project owner to obtain the necessary pertinent information, and to insure compatibility with other project purposes and with surcharge regulation. Major topics in the manual will include: Authorization and description of the project, hydrometeorology, data collection and communication networks, hydrologic forecasting, the water control plan, and water resource management functions, including responsibilities and coordination for water control decisionmaking. Special instructions to the dam tender or reservoir manager on data collection, reporting to higher Federal authority, and on procedures to be followed in the event of a communication outage under emergency conditions, will be prepared as an exhibit in the manual. Other exhibits will include copies of this regulation, letters of understanding consummating this regulation, and the water control agreements. After approval by the Chief of Engineers or his duly authorized representative, the manual will be furnished the project owner.

(5) *Water control agreement.* (i) A water control diagram (graphical) will be prepared by the Corps of Engineers for each project having variable space reservation for flood control and/or navigation during the year; e.g., variable seasonal storage, joint-use space, or other rule curve designation. Reservoir inflow parameters will be included on the diagrams when appropriate. Concise notes will be included on the diagrams prescribing the use of storage space in terms of release schedules, runoff, nondamaging or other controlling flow rates downstream of the damsite, and other major factors as appropriate. A water control release schedule will be prepared in tabular form for projects that do not have variable space reservation for flood control and/or navigation. The water control diagram or release schedule will be signed by a duly authorized representative of the Chief of Engineers, the project owner, and the designated operating agency, and will be used as the basis for carrying out this

regulation. Each diagram or schedule will contain a reference to this regulation.

(ii) When deemed necessary by the Corps of Engineers, information given on the water control diagram or release schedule will be supplemented by appropriate text to assure mutual understanding on certain details or other important aspects of the water control plan not covered in this regulation, on the water control diagram or in the release schedule. This material will include clarification of any aspects that might otherwise result in unsatisfactory project performance in the interest of flood control and/or navigation. Supplementation of the agreement will be necessary for each project where the Corps of Engineers exercises the discretionary authority to prescribe the flood control regulation on a day-to-day (real-time) basis. The agreement will include delegation of the responsibility. The document should also cite, as appropriate, section 7 of the 1944 Flood Control Act, the Federal Power Act and/or other congressional legislation authorizing construction and/or directing operation of the project.

(iii) All flood control regulations published in the FEDERAL REGISTER under this section (part 208) of the code prior to the date of this publication which are listed in paragraph 208.11(e) are hereby superseded.

(iv) Nothing in this regulation prohibits the promulgation of specific regulations for a project in compliance with the authorizing acts, when agreement on acceptable regulations cannot be reached between the Corps of Engineers and the owner.

(6) *Hydrometeorological instrumentation.* The project owner will provide instrumentation in the vicinity of the damsite and will provide communication equipment necessary to record and transmit hydrometeorological and reservoir data to all appropriate Federal authorities on a real-time basis unless there are extenuating circumstances or are otherwise provided for as a condition of the license or permit. For those projects where the owner retains responsibility for real-time implementation of the water control plan, the owner will also provide or arrange for the measurement and reporting of hydrometeorological parameters required within and adjacent to the watershed and downstream of the damsite, sufficient to regulate the project for flood control and/or navigation in an efficient manner. When data collection stations outside the immediate vicinity of the damsite are required, and funds for installation, observation, and maintenance are not available from other sources, the Corps of Engineers may agree to share the costs for such stations with the

project owner. Availability of funds and urgency of data needs are factors which will be considered in reaching decisions on cost sharing.

(7) *Project safety.* The project owner is responsible for the safety of the dam and appurtenant facilities and for regulation of the project during surcharge storage utilization. Emphasis upon the safety of the dam is especially important in the event surcharge storage is utilized, which results when the total storage space reserved for flood control is exceeded. Any assistance provided by the Corps of Engineers concerning surcharge regulation is to be utilized at the discretion of the project owner, and does not relieve the owner of the responsibility for safety of the project.

(8) *Notification of the general public.* The Corps of Engineers and other interested Federal and State agencies, and the project owner will jointly sponsor public involvement activities, as appropriate, to fully apprise the general public of the water control plan. Public meetings or other effective means of notification and involvement will be held, with the initial meeting being conducted as early as practicable but not later than the time the project first becomes operational. Notice of the initial public meeting shall be published once a week for 3 consecutive weeks in one or more newspapers of general circulation published in each county covered by the water control plan. Such notice shall also be used when appropriate to inform the public of modifications in the water control plan. If no newspaper is published in a county, the notice shall be published in one or more newspapers of general circulation within that county. For the purposes of this section a newspaper is one qualified to publish public notices under applicable State law. Notice shall be given in the event significant problems are anticipated or experienced that will prevent carrying out the approved water control plan or in the event that an extreme water condition is expected that could produce severe damage to property or loss of life. The means for conveying this information shall be commensurate with the urgency of the situation. The water control manual will be made available for examination by the general public upon request at the appropriate office of the Corps of Engineers, project owner or designated operating agency.

(9) *Other generalized requirements for flood control and navigation.* (i) Storage space in the reservoirs allocated for flood control and navigation purposes shall be kept available for those purposes in accordance with the water control agreement, and the plan

of regulation in the water control manual.

(ii) Any water impounded in the flood control space defined by the water control agreement shall be evacuated as rapidly as can be safely accomplished without causing downstream flows to exceed the controlling rates; i.e., releases from reservoirs shall be restricted insofar as practicable to quantities which, in conjunction with uncontrolled runoff downstream of the dam, will not cause water levels to exceed the controlling stages currently in force. Although conflicts may arise with other purposes, such as hydropower, the plan or regulation may require releases to be completely curtailed in the interest of flood control or safety of the project.

(iii) Nothing in the plan of regulation for flood control shall be construed to require or allow dangerously rapid changes in magnitudes of releases. Releases will be made in a manner consistent with requirements for protecting the dam and reservoir from major damage during passage of the maximum design flood for the project.

(iv) The project owner shall monitor current reservoir and hydro-meteorological conditions in and adjacent to the watershed and downstream of the damsite, as necessary. This and any other pertinent information shall be reported to the Corps of Engineers on a timely basis, in accordance with standing instructions to the dam-tender or other means requested by the Corps of Engineers.

(v) In all cases where the project owner retains responsibility for real-time implementation of the water control plan, he shall make current determinations of Reservoir inflow, flood control storage utilized, and scheduled releases. He shall also determine storage space and releases required to comply with the water control plan prescribed by the Corps of Engineers. The owner shall report this information on a timely basis as requested by the Corps of Engineers.

(vi) The water control plan is subject to temporary modification by the Corps of Engineers if found necessary in time of emergency. Requests for and action on such modifications may be made by the fastest means of communication available. The action taken shall be confirmed in writing the same day to the project owner and shall include justification for the action.

(vii) The project owner may temporarily deviate from the water control plan in the event an immediate short-term departure is deemed necessary for emergency reasons to protect the safety of the dam, or to avoid other serious hazards. Such actions shall be immediately reported by the fastest

## RULES AND REGULATIONS

means of communication available. Actions shall be confirmed in writing the same day to the Corps of Engineers and shall include justification for the action. Continuation of the deviation will require the express approval of the Chief of Engineers, or his duly authorized representative.

(viii) Advance approval of the Chief of Engineers, or his duly authorized representative, is required prior to any deviation from the plan of regulation prescribed or approved by the Corps of Engineers in the interest of flood control and/or navigation, except in emergency situations provided for in paragraph (d)(9)(vii) of this section. When conditions appear to warrant a prolonged deviation from the approved plan, the project owner and the Corps of Engineers will jointly investigate and evaluate the proposed deviation to insure that the overall integrity of the plan would not be unduly compromised. Approval of prolonged deviations will not be granted unless such investigations and evaluations have been conducted to the extent deemed necessary by the Chief of Engineers, or his designated representatives, to fully substantiate the deviation.

(10) *Revisions.* The water control plan and all associated documents will be revised by the Corps of Engineers, as necessary, to reflect changed conditions that come to bear upon flood control and navigation, e.g., reallocation of reservoir storage space due to sedimentation or transfer of storage space to a neighboring project. Revision of the water control plan, water control agreement, water control diagram, or release schedule requires approval of the Chief of Engineers or his duly authorized representative. Each such revision shall be effective upon the date specified in the approval. The

original (signed document) water control agreement shall be kept on file in the Office, Chief of Engineers, Department of the Army, Washington, D.C. Copies of the agreement shall be kept on file and may be obtained from the office of the project owner, or from the office of the appropriate Division Engineer, Corps of Engineers.

(11) *Federal Register.* The following information for each project subject to section 7 of the 1944 Flood Control Act and other applicable congressional acts shall be published in the FEDERAL REGISTER prior to the time the projects becomes operational and prior to any significant impoundment before project completion or . . . at such time as the responsibility for physical operation and maintenance of the Corps of Engineers owned projects is transferred to another entity: (i) Reservoir, dam, and lake names, (ii) stream, county, and State corresponding to the damsite location, (iii) the maximum current storage space in acre-feet to be reserved exclusively for flood control and/or navigation purposes, or any multiple-use space (intermingled) when flood control or navigation is one of the purposes, with corresponding elevations in feet above mean sea level, and area in acres at the upper and lower limits of said space, (iv) the name of the project owner, and (v) congressional legislation authorizing the project for Federal participation.

(e) *List of projects.* The following tables, "Pertinent Project Data—Section 208.11 Regulation," show the pertinent data for projects which are subject to this regulation.

(Sec. 7, Pub. L. 78-534, 58 Stat. 890 (33 U.S.C. 709); the Federal Power Act, 41 Stat. 1063 (16 U.S.C. 791(A)); and Sec. 9, Pub. L. 83-436, 68 Stat. 303.)

[FR Doc. 78-29100 Filed 10-12-78; 8:45 am]



**PART 208—FLOOD CONTROL REGULATIONS**

**§ 208.11 (Amended)**  
Accordingly 33 CFR 208.11 is amended by revising the table in paragraph (e) as follows:

**SUPPLEMENTARY INFORMATION:**

Note.—The Commander has determined that this rule is not a "major rule" proposal requiring preparation of a regulatory impact analysis under Executive Order 12291. Dated: November 16, 1981.

James W. Ray,  
Colonel, Corps of Engineers, Executive Director, Engineer Staff.

**FOR FURTHER INFORMATION CONTACT:**  
Mr. Earl Eiker, Chief, Water Control/Quality Section, Office, Commander, U.S. Army Corps of Engineers, Department of the Army, Washington, DC 20314 (202) 272-0234.

with regard to certain activities and responsibilities concerning water control management throughout the nation in the interest of flood control and navigation.  
**EFFECTIVE DATE:** November 30, 1981.

**LIST OF PROJECTS**  
(Pertinent project data)

Project name <sup>1</sup>	State, county and stream <sup>1</sup>	Exclusive-use				Multiple-use				Project owner <sup>2</sup>	Authorizing legislation <sup>3</sup>	
		Flood control/navigation		Area (acres)		Flood control/navigation		Area (acres)				
		Storage (1,000 AF)	Elevation limits (feet, m.s.l.)	Upper	Lower	Storage (1,000 AF)	Elevation limits (feet, m.s.l.)	Upper	Lower			
Alpine Dam	IL, Winnebago, Keith Cr.	0.6	798.0	764.0	62	0	3,340.0	3,283.2	1,900	0	City of Rockford, IL	PWA Proj, PL 88-292
Agency Valley Dam & Res.	OR, Malheur, N. Fork Malheur R.					1,700.0	4,343.2	4,295.6	56,100	0	USBR	FERC 2259
American Fall Dam & Res.	ID, Power, Snake River					423.2	4,196.0	4,043.0	4,740	1,150	USBR	Act of 1939 59 Stat 1187
Anderson Ranch Dam & Res.	ID, Elmore, S. Fl. Boise River					286.6	3,216.0	2,967.0	3,100	200	USBR	Act of 1902 32 Stat 398
Arrowrock Dam & Res.	MO, Marion, Raisin, Bear Cr.	8.7	648.5	620.0	640	0					City of Hannibal, MO	PL 83-790
Bear Cr Dam	MA, Franklin, Deerfield R Trib.										New England Pwr Co	Fed Pwr Act
Bear Swamp Pumped Stor.												
Big Dry Creek and Div.	CA, Fresno, Big Dry Cr & Dog Cr	16.2	425.0	383.0	1,550	0	5,505.0	5,596.4	960	873	Reclamation Board of CA	PL 77-228
Boco Dam & Res.	CA, Nevada, Little Truckee R.					128.8	3,710.0	3,672.0	5,036	2,042	USBR	PL 81-286, PL 68-292
Bonny Dam & Res.	CO, Yuma, S. Fork Republican R.	148.0	4,732.0	4,725.0	22,100	10,560	146.1	4,725.0	4,717.0	19,560	USBR	PL 78-534
Boynton Dam & Res.	WY, Fremont, Wild River					960.3	2,077.0	1,976.0	13,840	6,650	Idaho Pwr Co	FERC No 1971-C
Brownlee Dam & Res.	OR, Baker, ID, Washington, Snake River					31.6	2,523.0	2,456.8	1,062	140	USBR	PL 86-248
Bully Cr Dam & Res.	OR, Malheur, Bully Creek					200.0	235.5	205.1	7,600	5,507	East Bay Mun Util Dist	PL 86-645
Carmanche Dam & Res.	CA, San Joaquin, Mokelumne R.					795.1	3,787.0	3,770.0	34,435	24,126	USBR	PL 78-534
Canyon Ferry Dam & Res.	MT, Lewis, Clark, Missouri R.	191.9	2,166.0	2,144.0	10,780	6,869	50.4	5,548.1	5,535.7	6,160	USBR	PL 78-534
Cedar Bluff Dam & Res.	KS, Trego, Smoky Hill River	79.1	6,560.4	5,546.1	5,903	5,180	1.0	63.1	705.2	710	CA Dept of Wtr Res.	PL 87-874
Clark Canyon Dam & Res.	MT, Beaverhead, Beaverhead River	37.0	745.0	703.1	1,060	710	340.0	830.0	802.0	12,900	Modello & Turlock Jr.	PL 78-534
Del Valle Dam & Res.	CA, Alameda, Alameda Cr					48.0	5,705.5	5,577.0	684	127	USBR	PL 81-273
Don Pedro Dam & Res.	CA, Tuolumne, Tuolumne R.					74.0	5,560.0	5,450.0	1,455	0	USBR	PL 81-273
East Canyon Dam & Res.	UT, Morgan, East Canyon Creek					80	2,241.0	2,131.5	2,405	1,707	USBR	PL 83-606
Echo Dam & Res.	OR, Summit, Weber River	39.0	3,127.0	3,112.3	2,405	1,707	400.0	466.0	427.0	11,450	USBR	PL 78-534
Emigrant Dam & Res.	OR, Jackson, Emigrant Cr						390.0	576.0	466.3	4,650	USBR	PL 81-356
Enders Dam & Res.	NB, Chase, Frenchman Cr										USBR	PL 78-534, PL 79-526
Folsom Dam & Res.	CA, Sacramento, American R.										USBR	PL 89-496
Filbert Dam & Res.	CA, Fresno, San Joaquin River										USBR	PL 78-534
Gaston-Roseate Rapids	NC, Northampton, Halifax, Roanoke R.	63.0	203.0	200.0	22,500	20,300	5,185.5	1,290.0	1,208.0	45,592	VA Elec & Pwr Co	Fed Pwr Act
Glen Elder Dam & Res.	KS, Mitchell, Solomon R.	722.3	1,488.0	1,455.6	30,692	12,602	49.7	508.0	502.5	11,235	USBR	PL 78-534
Glendo Dam & Res.	WY, Platte, N. Platte R.	271.9	4,653.0	4,653.0	17,966	12,365	5,185.5	1,290.0	1,208.0	45,592	USBR	PL 68-561
Grand Coulee Dam, FDR	WA, Okanogan, Grant, Columbia R.										USBR	PL 89-496
H. Neely Henry	AL, Calhoun, St. Clair, Coosa River	150.0	2,094.5	2,084.5	6,925	3,400	49.7	508.0	502.5	11,235	Alabama Pwr Co	PL 78-534
Heart Butte Dam & Res.	ND, Grant, Heart River										USBR	PL 78-534
Hells Canyon Dam & Res.	OR, Wallowa, ID, Adams, Snake River	1,500	1,228.0	1,218.6	162,700	156,500	11.7	1,989.0	1,983.0	2,360	Idaho Pwr Co	FERC No 1971-A
Hoover Dam & Lake Mead	NV, Clark, AZ, Mohave, Colorado R.	2,982.0	3,560.0	3,336.0	23,900	5,400	16.8	1,219.8	1,063.0	83,500	USBR	PL 70-842
Hungry Horse Dam & Res.	MT, Flathead, S. Fork Flathead R.						40.0	1,485.0	1,474.7	3,975	Yoko City Fl Cont & Wtr	PL 78-326
Indian Valley Dam & Res.	CA, Lake, N. Fork Cache Creek						6.6	1,432.7	1,429.6	2,555	USBR	PL 84-964 Cons Dist
Jamestown Dam & Res.	ND, Stutsman, James River	185.4	1,454.0	1,432.7	13,206	2,555	1,219.0	2,893.0	2,883.0	125,560	USBR	FERC No 5
Kerr Dam, Flathead Lk.	MT, Lake, Flathead R.						39.0	814.8	802.3	622	USBR	PL 78-534
Keyhole Dam & Res.	WY, Crook, Belle Fourche River	140.2	4,111.5	4,099.3	13,666	9,394					USBR	PL 84-485
Kirwin Dam & Res.	KS, Phillips, N. Fork Solomon R.	215.1	1,757.3	1,729.3	10,640	5,073					USBR	Fed Pwr Act
Lemon Dam & Res.	CO, La Plata, Florida R.										USBR	PL 78-534
Lewis M. Smith Dam & Res.	AL, Walker, Cushman, Spazy Fork Black Warrior River	280.0	522.0	510.0	25,700	21,200					USBR	PL 84-485
Little Wood	ID, Blain, Little Wood River	30.0	5,237.3	5,127.6	574	0					USBR	Fed Pwr Act

LIST OF PROJECTS—Continued  
[Pertinent project data]

Project name <sup>1</sup>	State, county and stream <sup>1</sup>	Exclusive-use				Multiple-use				Project owner <sup>2</sup>	Authorizing legislation <sup>3</sup>		
		Flood control/navigation		Area (acres)		Flood control/navigation		Area (acres)					
		Storage (1,000 AF)	Elevation limits (feet, m.s.l.) Upper Lower	Upper Lower	Upper Lower	Storage (1,000 AF)	Elevation limits (feet, m.s.l.) Upper Lower	Upper Lower					
Logan Martin Dam & Res.	AL, Tallapoosa, Coosa River	245.3	477.0	485.0	26,310	15,260	14.0	353.5	327.8	619	487	Alabama Power Co. USBR	PL 83-438, PL 86-488.
Los Banos Dam & Detention.	CA, Merced, Los Banos Cr.						20.0	6,095.0	5,912.0	365	93	USBR	PL 91-273, USBR
Lost Creek Dam & Res.	UT, Morgan, Lost Creek	50.5	1,595.3	1,592.6	5,025	2,986	244.2	636.0	619.0	16,000	10,900	Grand R Dam Authority	PL 78-534, PL 78-476.
Lowell Dam & Res.	OK, Mayes, Grand Neosho River						21.4	425.0	415.0	2,070	1,825	City of Tecoma USBR	FPC No 2016-A, PL 78-534.
Markham Ferry Dam, Lake Wash E. Hudson.	WA, Lewis, Cowlitz River	52.2	2,366.2	2,366.1	3,465	1,650	1,397.0	778.5	621.5	11,800	6,000	City of Tecoma	FERC No 2016-B.
Mayfield Dam & Res.	NB, Frontier, Medicine Cr.						1,036.1	6,045.0	5,960.0	15,610	7,400	USBR	PL 84-843
Medicine Cr Dam Harry Shunk Lk.	WA, Lewis, Cowlitz River						400.0	667.0	796.7	7,110	4,849	USBR	PL 84-843
Meadowrock Dam Davidson Lk.	WA, Lewis, Cowlitz River						450.0	1,068.0	1,049.5	12,500	10,900	USBR	PL 87-874.
Navajo Dam & Res.	NM, San Juan, Arriba, Rio, San Juan R.											USBR	PL 78-534
New Eschequer Dam & Lake.	CA, Tuolumne, Merced River											USBR	PL 84-892.
New Melones Dam & Lk.	CA, Tuolumne, Calaveras, Stanislaus R.	96.8	2,331.4	2,304.3	6,316	6,316	750.0	900.0	849.5	15,600	13,346	USBR	PL 85-500.
Norton Dam Res.	KS, Norton, Prairie Dog Cr.	61.4	3,136.2	3,048.1	1,150	120	5.0	1,805.0	1,800.0	1,185	1,115	USBR	FERC No 1971-B.
Ochocho Dam & Res.	OR, Crook, Ochocho Creek											USBR	PL 78-534.
Oroville Dam & Lake.	CA, Butte, Feather River											USBR	PL 81-864.
Oxbow Dam & Res.	OR, Baker, ID, Adams, Snake River	34.0	4,621.5	4,580.2	1,232	660	17.0	6,447.5	6,375.0	334	120	USBR	PL 80-177, PL 84-485.
Pactola Dam & Res.	SD, Pennington, Rapid Creek	1,202.0	6,620.0	5,432.4	16,100	2,170	110.0	4,900.3	4,819.0	2,874	0	USBR	PL 81-273.
Palaesides Dam & Res.	CA, Contra Costa, Contra Costa R.	6.0	10,034.0	10,027.6	947	920	54.0	10,027.5	9,911.0	920	0	USBR	PL 78-640.
Paloma Dam & Res.	CO, Conejos, Conejos R.						44.0	488.0	481.0	7,100	6,500	USBR	FERC No 2114-A.
Pineview Dam & Res.	UT, Weber, Ogden River						20.0	5,741.2	5,703.7	745	334	USBR	PL 84-858.
Priest Rapids Dam & Res.	WA, Grant, Columbia R.	153.0	3,234.8	3,112.0	2,990	120	66.0	4,893.8	4,890.6	6,350	4,641	USBR	PL 87-590
Pineville Dam & Res.	OR, Crook, Crooked Cr.						99.0	5,119.0	5,023.0	1,560	360	USBR	PL 87-874.
Prosser Cr & Res.	CA, Nevada, Prosser Cr.	27	4,866.7	4,653.6	5,664	5,350	37.0	707.0	703.0	9,600	0	USBR	FERC No 2145.
Pueblo Dam & Res.	CO, Pueblo, Arkansas R.	48.9	2,604.0	2,581.8	2,692	1,629	530.5	1,602.5	1,475.0	6,000	2,188	USBR	FERC No 953-C.
Red Willow Dam, High Butler Lk.	NB, Frontier, Red Willow											USBR	PL 81-868.
Rite Dam & Res.	ID, Bonneville, Willow Cr.											USBR	PL 87-874.
Rocky Reach Dam Lk Enlat.	WA, Chelan, Columbia R.											USBR	FERC No 2145.
Rose Dam & Res.	WA, Whatcom, Skagit R.											USBR	FERC No 953-C.
Sanford Dam & Lk. Mercedith.	TX, Hutchinson, Canadian R.	402.1	2,965.0	2,941.3	21,640	17,320	16.0	1,468.5	1,400.0	366	127	USBR	PL 81-868.
Savage River Dam & Res.	MD, Garrett, Savage R.											USBR	PL 78-534.
Shadehill Dam & Res.	SD, Perkins, Grand R.	217.7	2,302.0	2,272.0	9,900	4,800	1,300.0	1,067.0	1,018.6	29,570	23,884	USBR	PL 78-534.
Shasta Dam & Lake.	CA, Shasta, Sacramento R.						(*)	(*)	(*)	(*)	(*)	USBR	PL 75-392.
Smith Min & Leesville Dam & Res.	VA, Bedford, Campbell, VA, Pittsylvania, Roanoke River						226.5	5,948.7	5,842.1	3,430	3,230	USBR	Fed Power Act.
Stumpede Dam & Res.	CA, Sierra, Little Truckee R.						226.6	724.0	655.0	4,890	0	USBR	PL 84-858.
Trenton Dam & Res.	NB, Hitchcock, Republican R.	133.8	2,773.0	2,752.0	7,975	4,974						USBR	PL 78-534.
Twitchell Dam & Res.	CA, Santa Barbara, Cuyama River	99.0	651.5	623.0	3,690	2,650	220.6	724.0	655.0	4,890	0	USBR	PL 83-774.
Upper Baker Dam, Baker Lk.	WA, Whatcom, Baker River											USBR	PL 89-298, FERC 2150-B.
Valecillo Dam & Res.	CO, La Plata, Los Pinos R.						115.4	7,665	7,000	2,723	693	USBR	PL 61-288, PL 66-292.
Wanapum Dam & Res.	WA, Grant, Columbia R.						151.6	571.5	560.0	14,400	9,600	USBR	FERC No 2114-B.
Wanship Dam & Res.	UT, Summit, Weber River						61.0	6,037.0	5,930.0	1,077	121	USBR	PL 81-273.
Warm Springs Dam & Res.	OR, Malheur, Middle Fork Malheur R.						191.0	3,406.0	3,327.0	4,600	90	USBR	PL 78-534.
Waterbury Dam & Res.	VT, Washington, Little River											USBR	FERC No 2149.
Wells Dam & Res.	AL, Cherokee, Coosa River	27.2	617.5	592.0	1,330	690	74.0	799.0	711.0	10,700	7,700	USBR	PL 534 78-2.
Wells Dam Lk Paterns.	WA, Douglas, Columbia R.	397.0	674.0	664.0	60,000	30,200						USBR	PL 534 78-2.
Webster Dam & Res.	KS, Rock, S. Fort Solomon R.	163.4	1,923.7	1,892.45	6,460	3,766	250.0	3,640.0	3,614.0	12,665	7,410	USBR	PL 78-534.
Yakowal Dam & Bighorn Lk.	MT, Big Horn, Bighorn R.	259.0	3,657.0	3,640.0	17,296	12,685						USBR	PL 78-534.

<sup>1</sup> Res.—Reservoir; Lk.—Lake; Dy.—Diversion; R.—River; Cr.—Creek.  
<sup>2</sup> USBR—United States Bureau of Reclamation; Ir.—Irrigation District; Mun.—Municipal; Fl.—Flood; Res.—Resources.  
<sup>3</sup> PL.—Public Law; HD.—House Document; FERC—Federal Energy Regulatory Commission (formerly Federal Power Commission (FPC)).  
 \* No specific FC/Nav. storage allocation.  
 BILLING CODE 3710-06-M

EXHIBIT D

MEMORANDUM OF UNDERSTANDING

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

Los Angeles District  
U. S. Army Corps of Engineers

August 1973

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING entered into by and between the DEPARTMENT OF THE ARMY, by and through the District Engineer, U.S. Army Engineer District, Los Angeles, and the DEPARTMENT OF THE INTERIOR, by and through the Area Director, Bureau of Indian Affairs, Phoenix, Arizona,

WITNESSETH:

WHEREAS, the Flood Control Act of 1965, Public Law 89-298, approved October 27, 1965, authorized the construction of a project for flood protection and other purposes on the Santa Rosa Wash within the Papago Indian Reservation, Arizona, in substantial conformance with the recommendations of the Chief of Engineers, Department of the Army, in House Document 189, 89th Congress, 1st Session.

WHEREAS, the said house document provides that the said project shall be transferred upon completion to the Bureau of Indian Affairs or a designated organization approved by the Secretary of the Interior and Secretary of the Army for operation and maintenance subject to flood control provisions prescribed by the Secretary of the Army.

WHEREAS, the parties hereto are desirous of entering into this agreement to provide for the orderly transfer of the project and the continuing operation and maintenance thereof.

NOW, THEREFORE, the parties hereto do hereby agree as follows:

1. That upon completion of construction, the Department of the Army shall transfer the said project to the Department of the Interior for continuous operation, repair, and maintenance in a manner to assure maximum benefits from the project for flood control and water conservation purposes.
2. That the Department of the Interior shall operate and maintain the said project without cost or expense to the Department of the Army and in accordance with regulations promulgated from time to time by the Department of the Army regarding the operation and maintenance of the project for flood control purposes. The Department of the Army shall furnish the Department of the Interior an Operation and Maintenance Manual for the project.
3. That the Department of the Interior shall prohibit encroachment or trespass on the structures constructed by the Department of the Army which in the opinion of the said District Engineer would adversely affect the effective operation and maintenance of the said project for flood control purposes.

1. That the Department of the Interior shall (1) allow no construction on, over, under or through any of the structures constructed by the Department of the Army for the project, (2) allow no excavation or construction within the limits of the project in violation of property rights secured by the Department of the Army for the project, and (3) allow no changes in any feature of the structures constructed by the Department of the Army for the project, without the prior written determination by the said District Engineer or his authorized representative that such improvement, excavation, construction, or alteration will not adversely affect the flood control features of the project. Any such improvement, excavation, construction, or alteration approved in writing by the said District Engineer shall be accomplished in accordance with standard engineering practices. Drawings or prints showing such improvement, excavation, construction, or alteration as finally accomplished shall be furnished the said District Engineer after completion of the work. Advice regarding the effect of any proposed improvement, excavation, construction, or alteration on the functioning of the project and information concerning methods of construction acceptable under standard engineering practice may be obtained from the said District Engineer.

5. That the said District Engineer and other authorized representatives of the Department of the Army shall have the continuing right to enter upon land and structures in the project for any purpose deemed appropriate by them in connection with the flood control aspects thereof, including the right to conduct periodic inspections and condition surveys.

6. That the Department of the Army shall conduct periodic condition surveys of the project and shall render written reports of the findings thereof. Copies of said reports shall be made available to the Department of the Interior.

7. That the Department of the Interior shall promptly perform such operation, repair, and maintenance activities at the project as deemed necessary from time to time by the said District Engineer in furtherance of the flood control aspects of the project.

8. That the Department of the Interior shall be responsible for the adjustment of all claims arising from the construction, operation, repair, and maintenance of the said project for purposes other than flood control.

9. That the Department of the Interior shall be responsible for the establishment and enforcement of floodway limits and regulations and for performing necessary work on the Santa Rosa Wash through the Papago, Maricopa, and Gila River Indian Reservations downstream from the dam site of the said project to maintain the hydraulic capacity of the existing channel.

10. That the Department of the Interior shall take appropriate measures to insure that the activities of all local organizations operating public and private facilities connected with the said project are coordinated with its activities at the project during flood periods.

11. That the Department of the Interior shall appoint a permanent committee composed of the Superintendent of the Papago Indian Agency and the Superintendent of the Pima Indian Agency, headed by the Superintendent of the Papago Indian Agency, hereinafter called "Superintendent", who shall be responsible for the efficient operation and maintenance for all of the structures and facilities of the project and for continuous inspection and maintenance of the project, all without cost to the Department of the Army. The Department of the Interior shall delegate sufficient authority to the said Superintendent to enable him to adequately function as the manager of the said project under this memorandum of understanding.

12. That the said Superintendent of the project shall submit a semiannual report to the said District Engineer covering inspection, maintenance, repair, and operation of the said project.

Date: 30 August 1973

DEPARTMENT OF THE ARMY

By: 

JOHN V. FOLEY  
COL, CE  
District Engineer

Date: MAY 15 1973

DEPARTMENT OF THE INTERIOR

By: 

Acting Area Director  
Dale M. Belcher

EXHIBIT E

FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT (FONSI)

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

Los Angeles District  
U. S. Army Corps of Engineers

December 1989

EXHIBIT F

CHAIN OF CORRESPONDENCE FOR APPROVAL OF WATER CONTROL MANUAL

TAT MOMOLIKOT DAM  
SANTA ROSA WASH

Los Angeles District  
U. S. Army Corps of Engineers

December 1989





**DEPARTMENT OF THE ARMY**  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2711  
LOS ANGELES, CALIFORNIA 90053-2325

July 10, 1989

REPLY TO  
ATTENTION OF:

Office of the Chief  
Hydrology and Hydraulics Branch

Mr. Wilson Barber  
Phoenix Area Director  
Bureau of Indian Affairs  
P.O. Box 10  
Phoenix, Arizona 85001

Dear Mr. Barber:

The U.S. Army Corps of Engineers, Los Angeles District is currently preparing an update of the water control manual for Tat Momolikot Dam and Lake Saint Clair. We request your cooperation in providing information throughout the study. Mr. Boniface Bigornia, Mr. Algis Bliudzius, and Mrs. Wendy Gist of this office will be visiting the site for a field reconnaissance on 18 - 20 July, 1989. It is requested that an initial coordination meeting be set up for the afternoon of July 18 with representatives of the Bureau of Indian Affairs that have knowledge of and interest in the dam and its operation.

Before meeting with the above representatives it would be appreciated if the following questions could be considered and commented on in writing by the appropriate persons.

1. Please discuss anything known about erosion and sediment production for the watershed.
2. Are there any integrated components or control facilities related to the dam besides the Vaiva Vo Irrigation Project (i.e. diversions, pumping, reregulation)?
3. Have any public facilities besides the overlook area been constructed?
4. Provide a list of neighboring projects (i.e. check dams, levees) in the same water system that have some effect on the water control objective.
5. Have there been any problems with regulation since the project has been completed (i.e. leakage, hydraulic malfunction, groundwater, residential encroachment, deterioration)?

If you have any questions or comments, please feel free to contact Mrs. Wendy Gist, of the Hydraulics Section at (213) 894-6981 or Mr. Boniface Bigornia of the Reservoir Regulation Section at (213) 894-6916.

Sincerely,

Robert Koplín, P.E.  
Acting Chief, Engineering Division

Copies Furnished:

Mr. Ken Clouser  
Area Safety of Dams Coordinator  
Bureau of Indian Affairs  
P.O. Box 10  
Phoenix, Arizona 85001

Mr. Joe Revak  
Superintendent of the Papago Agency  
Bureau of Indian Affairs  
P.O. Box 578  
Sells, Arizona 85634



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

PAPAGO INDIAN AGENCY

Sells, Arizona 85634

IN REPLY REFER TO:

Civil Engineer  
Land Operations

Mr. Robert Koplin  
Acting Chief, Eng. Div.  
Corps of Engineers  
P. O. Box 2711  
Los Angeles, CA 90053

Dear Mr. Koplin:

The following is in response to your letter dated July 10, 1989:

1. Erosion of soil is widespread in the watershed, however, an insignificant amount of sediment has been transported to the reservoir area. The erosion problem is believed to be caused by the loss of ground cover due to livestock overgrazing. Efforts to eliminate the overgrazing problem have had little success over the past forty or fifty years, however, recent experiments with livestock rotation grazing methods on the reservation that allow the land to rest after the grass has been grazed show excellent results. Apparently the stream grades are not steep enough and the stream velocities are not great enough to convey significant amounts of sediment to the reservoir area for the types of storms that have occurred since the dam was completed in 1974.
2. There are no other components or control facilities related to the dam other than the Vaiva Vo Irrigation Project.
3. No other public facilities have been constructed since the completion of the dam.
4. There are a number of small detention dams and stock tanks in the watershed that tend to reduce the peak flows and total runoff to the reservoir than would otherwise occur if they were not present. There are around 150 such structures in the watershed, with the average structure capacity being around 10 to 15 acre-ft.
5. No problems have been encountered with regulation since the project was completed.

Sincerely,

Joe Revak  
Supervisory Civil Engineer