

Office Memorandum  
No. 385-1-3

16 March 1993

Safety  
DOWNSTREAM NOTIFICATION OF DISCHARGES AND CHANGES  
IN DISCHARGE FROM CORPS DAMS AND POWERHOUSES

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1. Purpose. The purpose of this document is to establish policy and procedures for notifying the public of water releases from Corps of Engineers dams, locks, and powerhouses.

2. Applicability. This policy applies to all Little Rock District dams, locks, and powerhouses.

3. Reference. The policy established here complements and extends the objectives in ER 1130-2-341, subject: "Restricted Areas For Hazardous Waters," and, when used in conjunction with the implemented plan for restricting areas of hazardous waters from public use, will provide a viable and comprehensive water safety program for visitors and users in, around, and downstream from Little Rock District dams, locks, and powerhouses.

4. Objective. The objective of this document is to establish a Standard Operating Procedure (SOP) for notifying the public of a discharge or that a significant change in flow has occurred at a dam and/or powerhouse. The method of notification is determined by a classification of the structure from which the discharge is occurring. It is the aim of this policy to reduce the public's risk of property loss, injury, or death due to the occurrence of or changes in water discharges. Sufficient information will be provided to make the hazards of these discharge events evident to a prudent, safety conscious, and informed public.

5. Categories.

a. Category I - Medium Head Flood Control Dams With Powerhouses.

(1) Experience: Spillway releases rarely occur. When they do occur, they are well publicized through news releases to the media. Flood discharges are made and increased as downstream conditions permit. Flood storage is normally reduced over an extended period of time through releases from the powerhouse. Releases can occur at any time. These releases may increase flow in the streams quickly and significantly. Projects in this category are Beaver, Bull Shoals, Greers Ferry, Norfolk, and Table Rock.

(2) Dangers. Dangers of hypothermia are present due to low water temperatures. Increases in flows affect the stream for a considerable distance from the dam and may find users unprepared. Specific hazards include being stranded on the side of the stream and/or on islands separated from egress, greater water depths, increased stream flow, fog, increased difficulty in navigating the stream due to elevated stream velocity, turbulence, and inundation of roadways and trails normally used to depart access areas.

b. Category II - Arkansas River Navigation Locks and Dams.

(1) Experience. Spillway releases are made to control navigation pool levels by equalling inflow. Projects with powerhouses normally discharge inflow to produce electrical power. When the inflow exceeds powerhouse capacity, the additional flow is released through the spillway gates. Releases from spillway or powerhouse for pool regulation purposes generally do not increase water elevation to any perceptible levels except after abnormally great precipitation upstream. During these high water events flows and water elevations increase and decrease gradually over a period of time.

(2) Dangers. In a limited area, bank fishermen and other users may be stranded on riprap dikes and revetment structures near the dam and separated from egress due to rising water and strong currents. Increased stream velocity creates water turbulence downstream. This may create difficulty in navigation for small craft, and advisories are posted on the Arkansas River when flow rates exceed 70,000 cfs.

c. Category III - Flood Control Dams.

(1) Experience: Water releases through spillway and/or conduit gates are the only means to discharge flood storage at these structures. Flood discharges are made and increased as downstream conditions permit. Minimum releases for fish and wildlife are continuously made from these dams. Projects in this category are Blue Mountain, Clearwater, DeQueen, Dierks, Gillham, and Nimrod.

(2) Dangers. Hypothermia is a danger in a limited area. Specific hazards include being stranded on the side of the stream and/or on islands separated from egress, greater water depths, elevated stream velocity, increased difficulty in navigating the stream due to elevated stream velocity, turbulence, and inundation of roadways and trails normally used to depart access areas.

d. Category IV - Millwood Dam.

(1) Experience. Water releases through spillway and/or sluice gates are the only means to discharge flood storage at this site. Flood discharges are made and increased as downstream conditions permit. The number of spillway gates makes possible a high rate of discharge into a large streambed.

(2) Dangers. In a limited area bank fishermen and other users are subject to being stranded on revetment structures near the dam and separated from egress due to rising water and strong currents. Increased stream velocity creates water turbulence downstream. This may create difficulty in navigation for small craft.

6. Policy. Discharge notification will be made by the following methods:

a. Category I - Medium Head Flood Control Dams With Powerhouses.

(1) Corps Standard Signs. Signs will be strategically placed immediately downstream from the dam and/or powerhouse restricted area. They may be readily seen by fishermen, boaters, and other users to provide information pertaining to dangers and explain the meaning of horn and/or siren signals. Signs will be placed at public access areas within 1 mile downstream from the dam and/or powerhouse warning of sudden increases in stream velocity and elevation.

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(2) Horns. A horn(s) will sound when a powerhouse unit initially discharges water and when additional units are placed into operation. Reliability of the horn(s) will be assured by redundant or acoustical confirmation system. A horn(s) will sound when water is initially discharged through the spillway and when increases are made. Visual inspection of the immediate area will be made before spillway discharges begin.

(3) Telephone To Powerhouse. Direct telephone communication to powerhouse control room operator will be established for emergencies. Closed circuit public telephone terminal will be placed in a conspicuous location along with operating instructions and other pertinent information.

b. Category II - Arkansas River Navigation Locks and Dams.

(1) Corps Standard Signs. Signs will be strategically placed immediately downstream from the dam restricted area. They may be readily seen by fishermen, boaters, and other users. These users will thus be informed about dangers related to sudden increases in stream velocity and elevation. Also, the signs will explain the meaning of the sirens. Similar signs will be located at public access points.

(2) Horns and Sirens. A horn(s) will sound when powerhouse units initially discharge water and when additional units are placed into operation. Reliability of the horn(s) will be assured by redundant or acoustical confirmation system. A siren(s) will sound when water is initially discharged through the spillway and when increases are made, or when water is released through the lock. The siren's length of operation may be increased to moderate the risk of competing sounds or distractions. Visual inspection of the immediate area will be made before spillway and lock discharges begin.

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(2) Sirens. A siren will sound when water is initially discharged through the spillway and/or outlet works and when increases are made. Visual inspection of the immediate downstream area will be made before discharges begin.

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(1) Corps Standards Signs.

(2) Sirens. A siren will sound when water is initially discharged through spillway and/or sluice gates and when increases in discharge are necessary. Visual inspection of the immediate area will be made before spillway discharges begin.

e. General. The following general elements and initiatives are a part of the multi-media solution for downstream notification of discharges.

(1) New Procedures and Technology. The Little Rock District will be alert for new procedures and technology to improve downstream warning methods. The District recognizes the difficulty of correlating warning information to actual hazardous water conditions and will search for ways to improve the procedures and provide more timely and accurate information. New methods will normally be applied to one location for testing and evaluation before general application.

(2) Brochure. A downstream discharge warning/restricted areas brochure will be developed for public distribution.

(3) Public Presentations. Programs will be made available to area schools, clubs, and civic groups explaining hazards of discharges/restricted areas, and informational and preventive measures taken by the Corps of Engineers for public protection will be publicized.

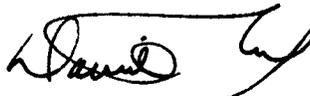
(4) Lake Maps. Lake maps will be revised to include discharge hazard/restricted areas information.

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(5) Public Information. Downstream hazards/restricted areas information will be provided to the Arkansas Game and Fish Commission and Missouri Department of Conservation for inclusion on their printed materials. Similar information will be provided upon request to any agency, organization, municipality, media outlet or other local government entity desiring to provide this information to the public.

7. Responsibilities. It is the responsibility of the Chief, Construction-Operations Division, to implement this SOP.



DAVID R. RUF  
Colonel, Corps of Engineers  
District Engineer

DISTRIBUTION A

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5. Categories.

a. Category I - Medium Head Flood Control Dams With Powerhouses.

(1) Experience: Spillway releases rarely occur. When they do occur, they are well publicized through news releases to the media. Flood discharges are made and increased as downstream conditions permit. Flood storage is normally reduced over an extended period of time through releases from the powerhouse. Releases can occur at any time. These releases may increase flow in the streams quickly and significantly. Projects in this category are Beaver, Bull Shoals, Greers Ferry, Norfolk, and Table Rock.

(2) Dangers. Dangers of hypothermia are present due to low water temperatures. Increases in flows affect the stream for a considerable distance from the dam and may find users unprepared. Specific hazards include being stranded on the side of the stream and/or on islands separated from egress, greater water depths, increased stream flow, fog, increased difficulty in navigating the stream due to elevated stream velocity, turbulence, and inundation of roadways and trails normally used to depart access areas.

b. Category II - Arkansas River Navigation Locks and Dams.

(1) Experience. Spillway releases are made to control navigation pool levels by equalling inflow. Projects with powerhouses normally discharge inflow to produce electrical power. When the inflow exceeds powerhouse capacity, the additional flow is released through the spillway gates. Releases from spillway or powerhouse for pool regulation purposes generally do not increase water elevation to any perceptible levels except after abnormally great precipitation upstream. During these high water events flows and water elevations increase and decrease gradually over a period of time.

(2) Dangers. In a limited area, bank fishermen and other users may be stranded on riprap dikes and revetment structures near the dam and separated from egress due to rising water and strong currents. Increased stream velocity creates water turbulence downstream. This may create difficulty in navigation for small craft, and advisories are posted on the Arkansas River when flow rates exceed 70,000 cfs.

c. Category III - Flood Control Dams.

(1) Experience: Water releases through spillway and/or conduit gates are the only means to discharge flood storage at these structures. Flood discharges are made and increased as downstream conditions permit. Minimum releases for fish and wildlife are continuously made from these dams. Projects in this category are Blue Mountain, Clearwater, DeQueen, Dierks, Gillham, and Nimrod.

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(1) Experience. Water releases through spillway and/or sluice gates are the only means to discharge flood storage at this site. Flood discharges are made and increased as downstream conditions permit. The number of spillway gates makes possible a high rate of discharge into a large streambed.

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6. Policy. Discharge notification will be made by the following methods:

a. Category I - Medium Head Flood Control Dams With Powerhouses.

(1) Corps Standard Signs. Signs will be strategically placed immediately downstream from the dam and/or powerhouse restricted area. They may be readily seen by fishermen, boaters, and other users to provide information pertaining to dangers and explain the meaning of horn and/or siren signals. Signs will be placed at public access areas within 1 mile downstream from the dam and/or powerhouse warning of sudden increases in stream velocity and elevation.

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(1) Corps Standard Signs. Signs will be strategically placed immediately downstream from the dam restricted area. They may be readily seen by fishermen, boaters, and other users. These users will thus be informed about dangers related to sudden increases in stream velocity and elevation. Also, the signs will explain the meaning of the sirens. Similar signs will be located at public access points.

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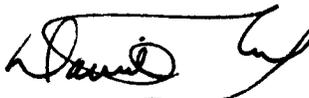
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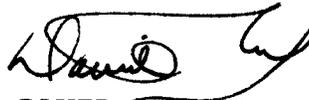
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