

Placer County Water Agency

Power System: 24625 Harrison St. • Mail: P.O. Box 667 • Foresthill, California 95631
(530) 367-2291 (530) 885-6917 FAX (530) 367-4440



Mal
A Public Agency

BOARD OF DIRECTORS

Pauline Roccucci • Alex Ferreira
Oris Wollan • Lowell Jarvis
Michael R. Lee
David A. Breninger, General Manager
Ed Tiedemann, General Counsel

EAP Revision #3
Revision Date – July 25, 2006
Page 1

July 25, 2006

TO: Placer County Water Agency Emergency Action Plan (EAP) holders
RE: EMERGENCY ACTION PLAN - MIDDLE FORK AMERICAN RIVER PROJECT
Federal Energy Regulatory Commission (FERC), PROJECT NO. 2079

REVISION #3 dated July 19, 2006

Placer County Water Agency (PCWA) is required by FERC to update our EAP for the Middle Fork American River Project as necessary. We have enclosed Revision #3 to our December, 2004 EAP.

The December, 2004 EAP should be located in an area that your personnel can readily locate in a simulated drill scenario or actual emergency.

PCWA is required by FERC to have on file a letter of acknowledgement indicating that you have reviewed the EAP, including the flowcharts and maps, and concur with the actions assigned to your agency. Please carefully review the EAP, including Revision #3. We appreciate any comments or corrections you may have. Please sign and return the enclosed confirmation letter by August 25, 2006, which includes your acknowledgement that the superceded pages of the EAP have been destroyed.

INSTRUCTIONS FOR ADDING REVISION #3 TO THE EAP

- 1) Place a copy of this letter in the front pocket of your EAP binder
- 2) Replace all nine flowcharts in Division I with the new flowcharts

Sincerely,

PLACER COUNTY WATER AGENCY

A handwritten signature in cursive script that reads "Stephen J. Jones".

Stephen J. Jones
Power System Manager

CONFIRMATION OF RECEIPT

EAP Copy # 51

July 25, 2006

TO: Greg Young

RE: EMERGENCY ACTION PLAN - MIDDLE FORK AMERICAN RIVER PROJECT
Federal Energy Regulatory Commission (FERC), PROJECT NO. 2079

My signature below acknowledges that _____
(Organization Name)

has received PCWA's Revision #3 to the December 2004 Middle Fork American River Project Emergency Action Plan. I acknowledge that the instructions accompanying Revision #3 have been implemented, and that the obsolete pages removed from the EAP have been destroyed by shredding or other suitable methods.

Please make sure your EAP copy number is written on your binder.

We have additional comments regarding the EAP. () Yes

() No

If you have comments, please attach them to this letter, or send them to Placer County Water Agency, Attn: Greg Young, PO Box 667, Foresthill, CA, 95631, or e-mail them to gyoung@pcwa.net.

Signature: _____

Name (printed): _____

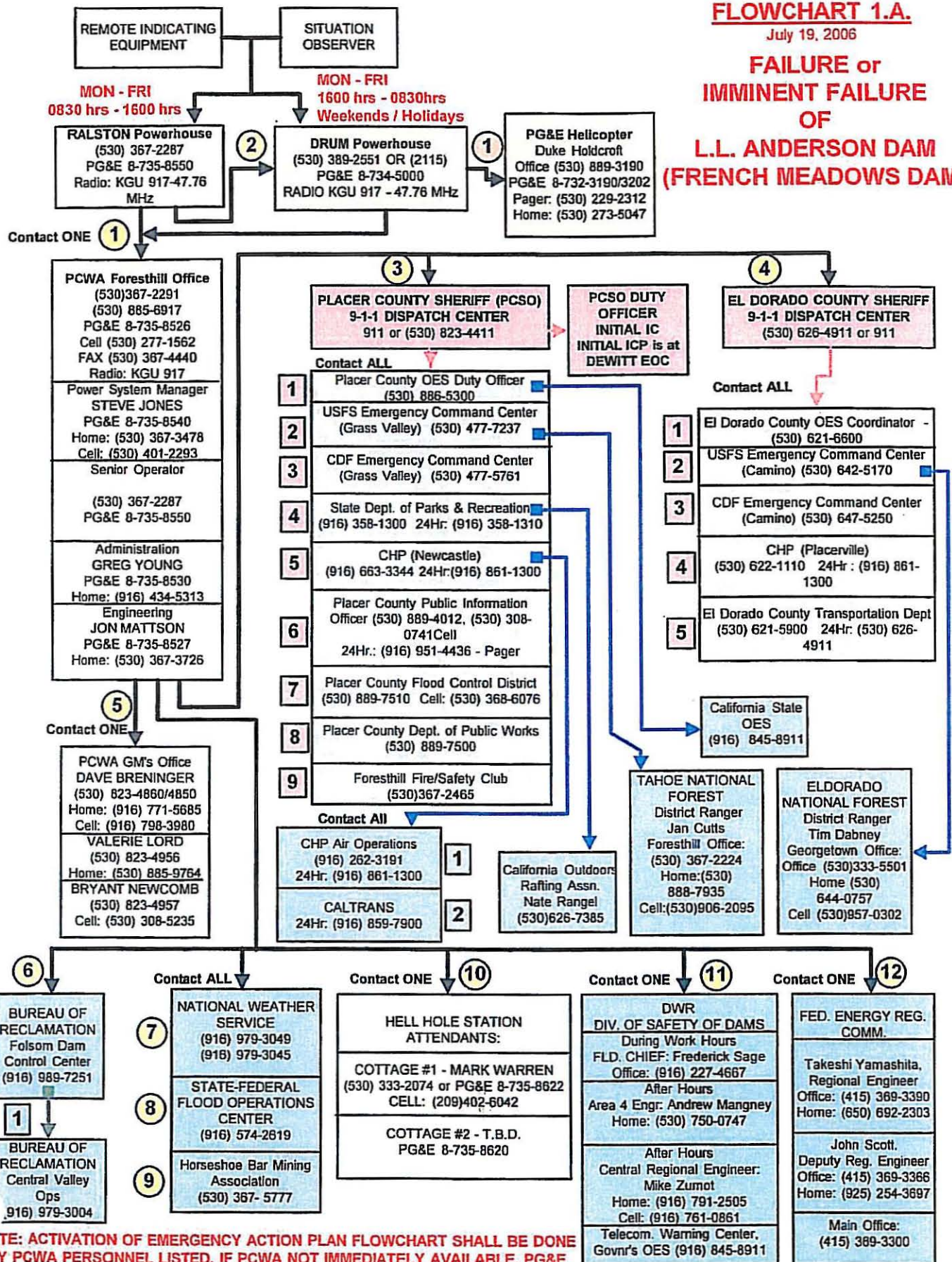
Title: _____

Date: _____

FLOWCHART 1.A.

July 19, 2006

FAILURE or IMMINENT FAILURE OF L.L. ANDERSON DAM (FRENCH MEADOWS DAM)

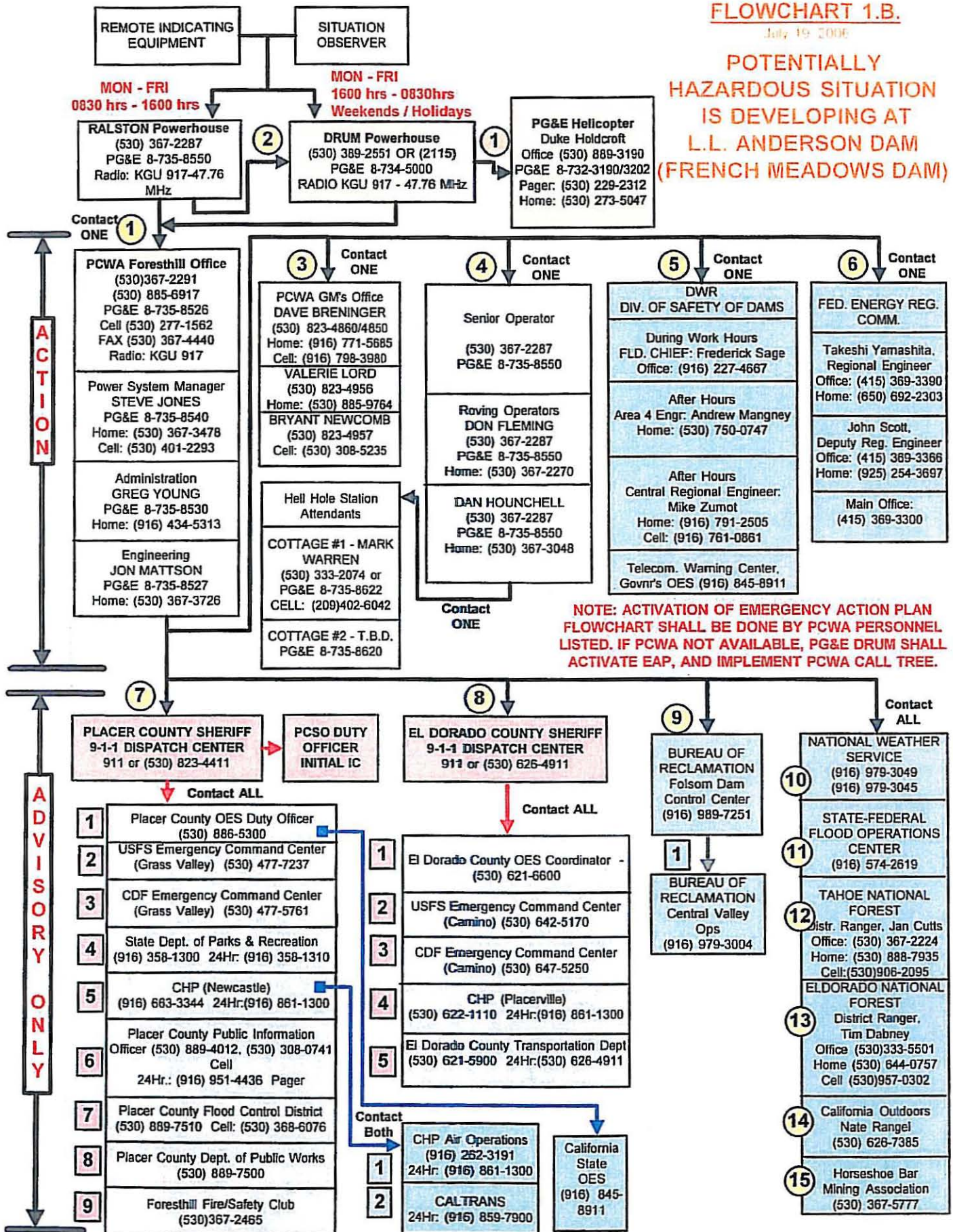


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 1.B.

July 19 2006

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
L.L. ANDERSON DAM
(FRENCH MEADOWS DAM)**

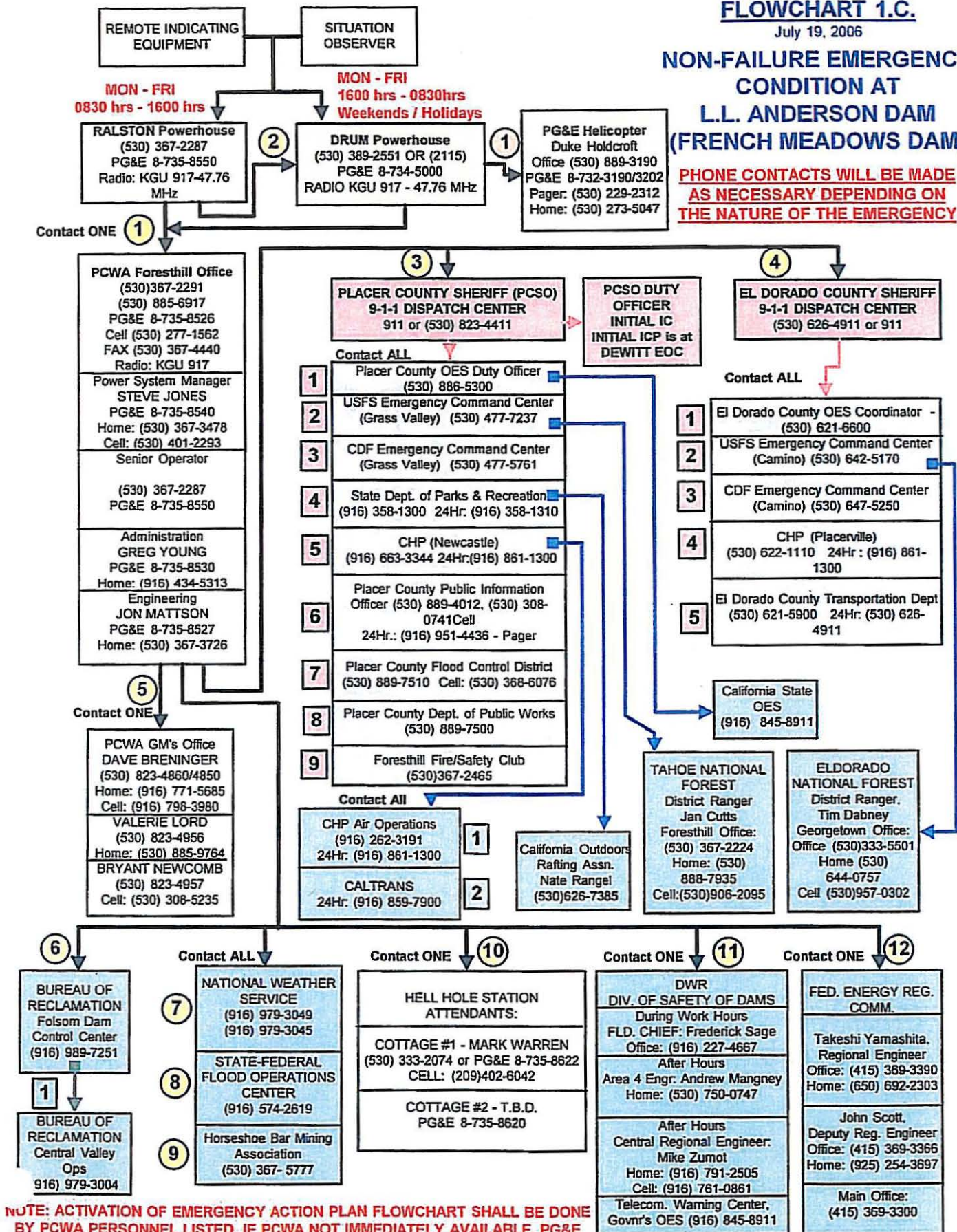


FLOWCHART 1.C.

July 19, 2006

NON-FAILURE EMERGENCY CONDITION AT L.L. ANDERSON DAM (FRENCH MEADOWS DAM)

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**

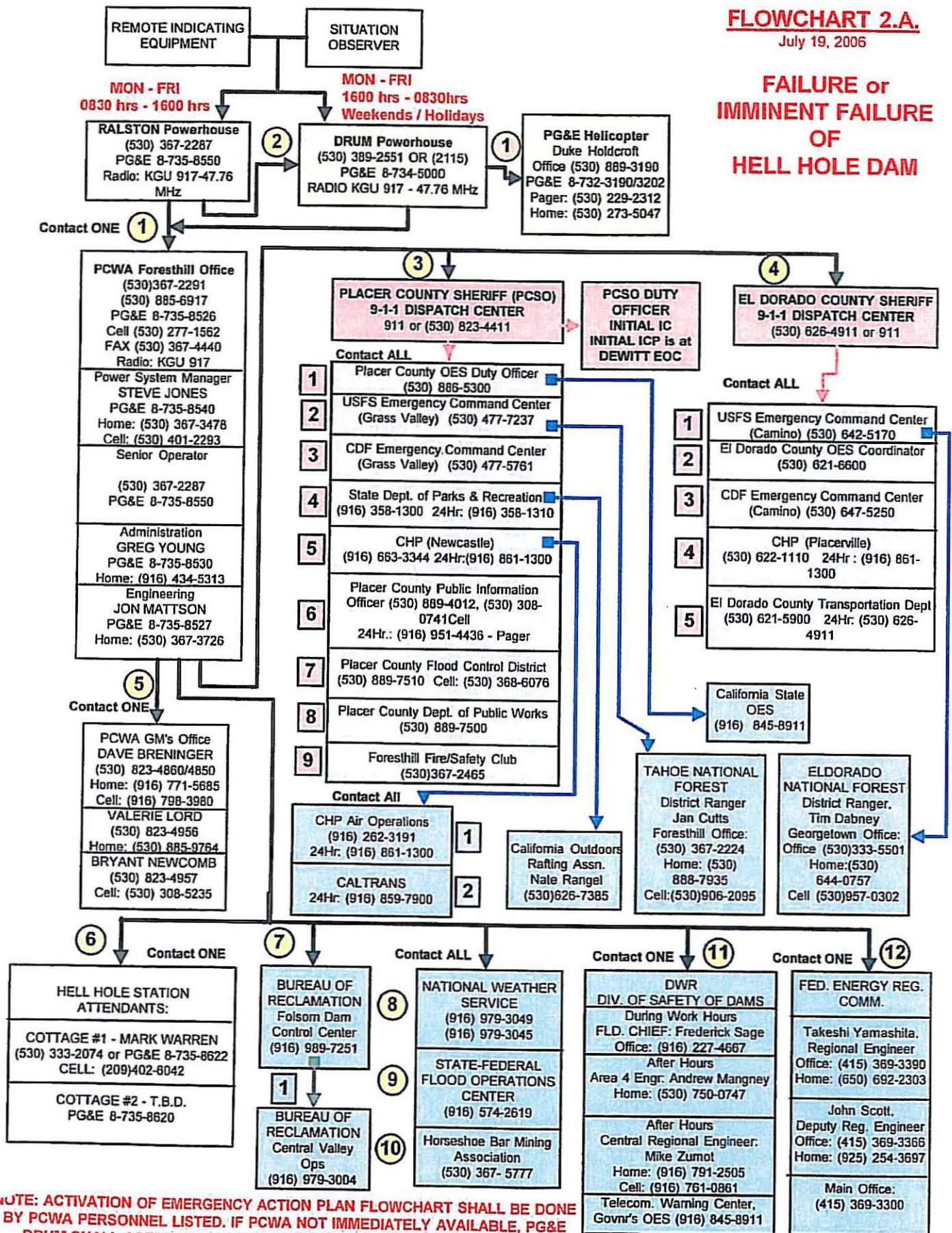


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 2.A.

July 19, 2006

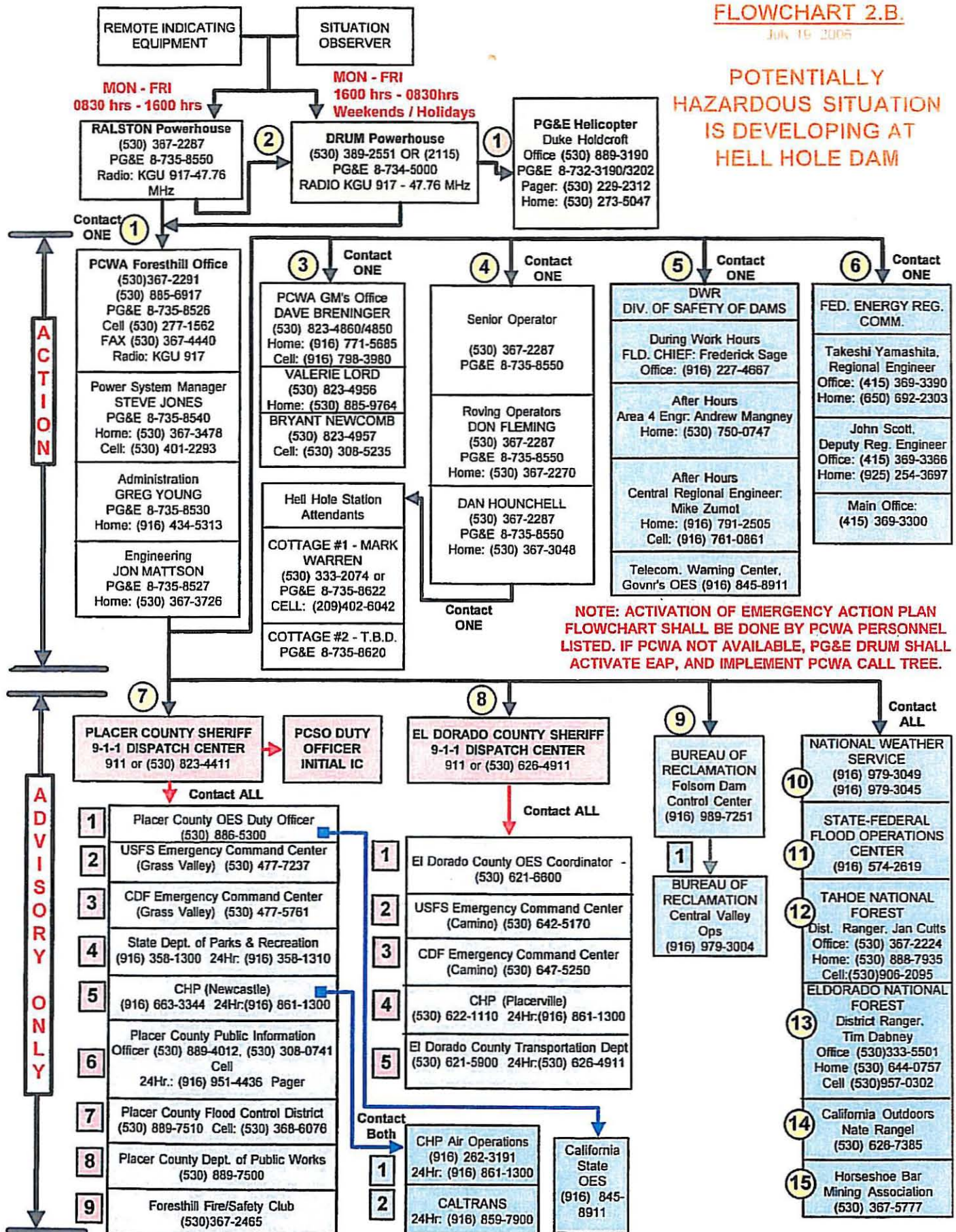
FAILURE or IMMINENT FAILURE OF HELL HOLE DAM



FLOWCHART 2.B.

JUN 15 2005

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
HELL HOLE DAM**

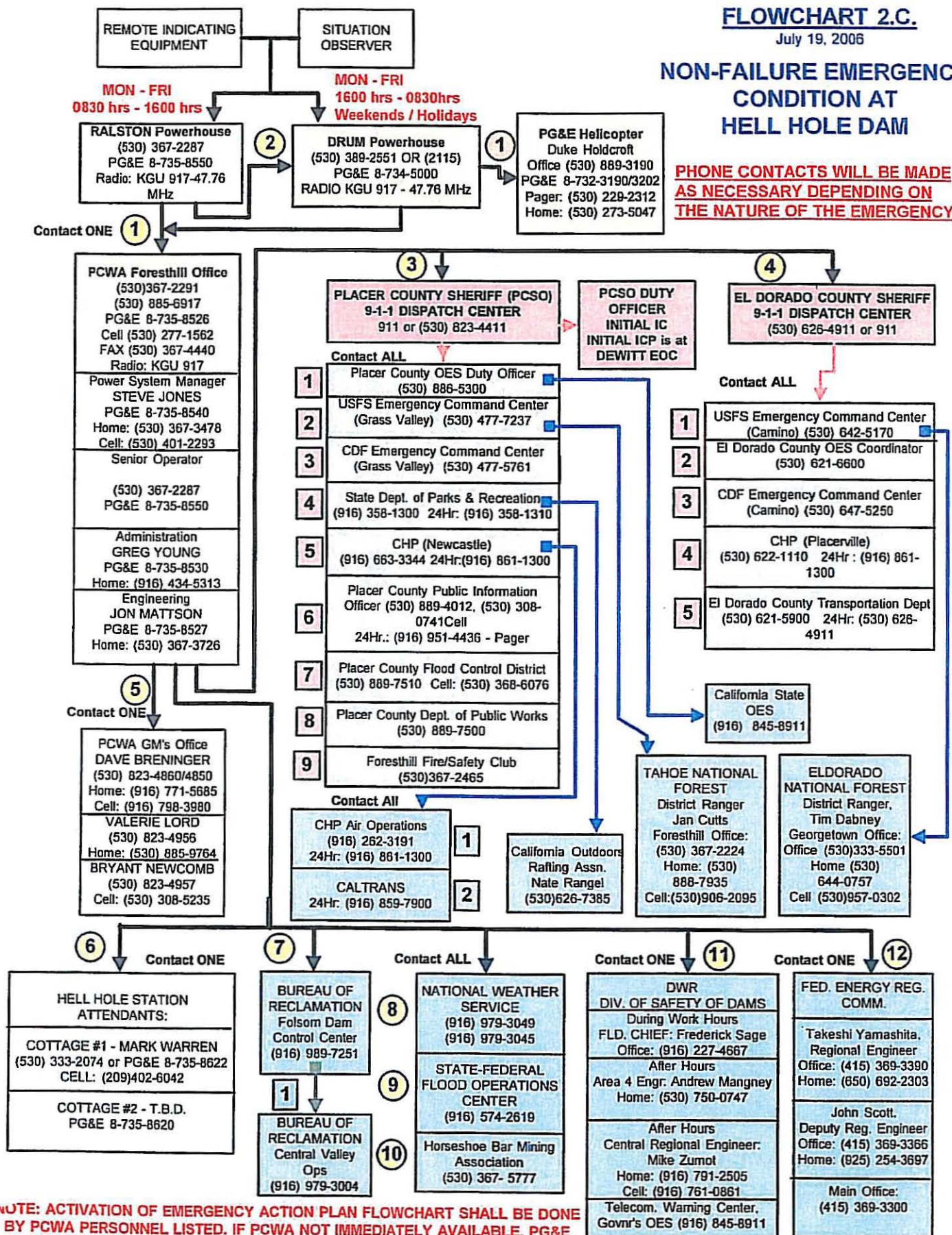


FLOWCHART 2.C.

July 19, 2006

NON-FAILURE EMERGENCY CONDITION AT HELL HOLE DAM

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**

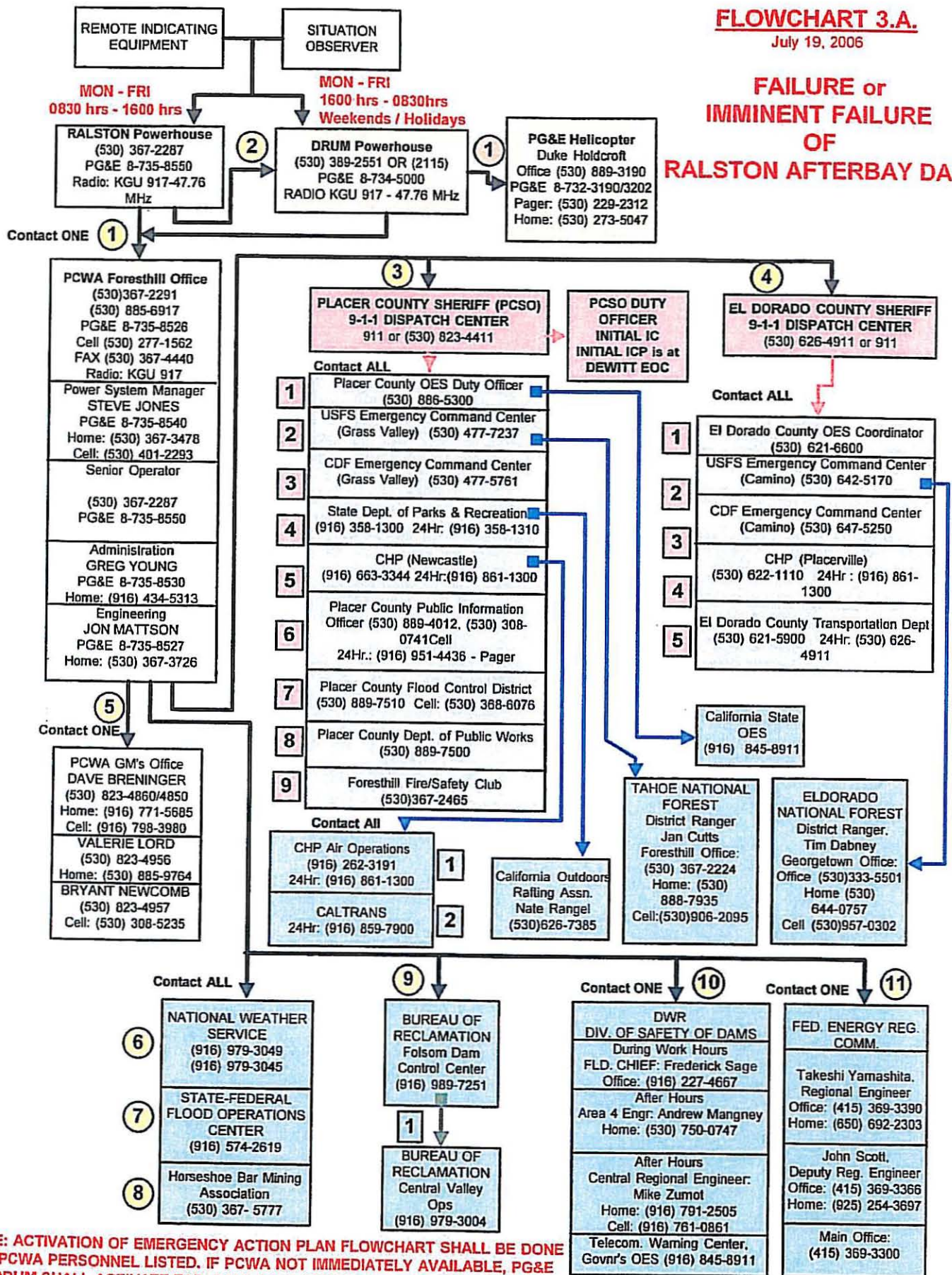


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.A.

July 19, 2006

FAILURE or IMMINENT FAILURE OF RALSTON AFTERBAY DAM

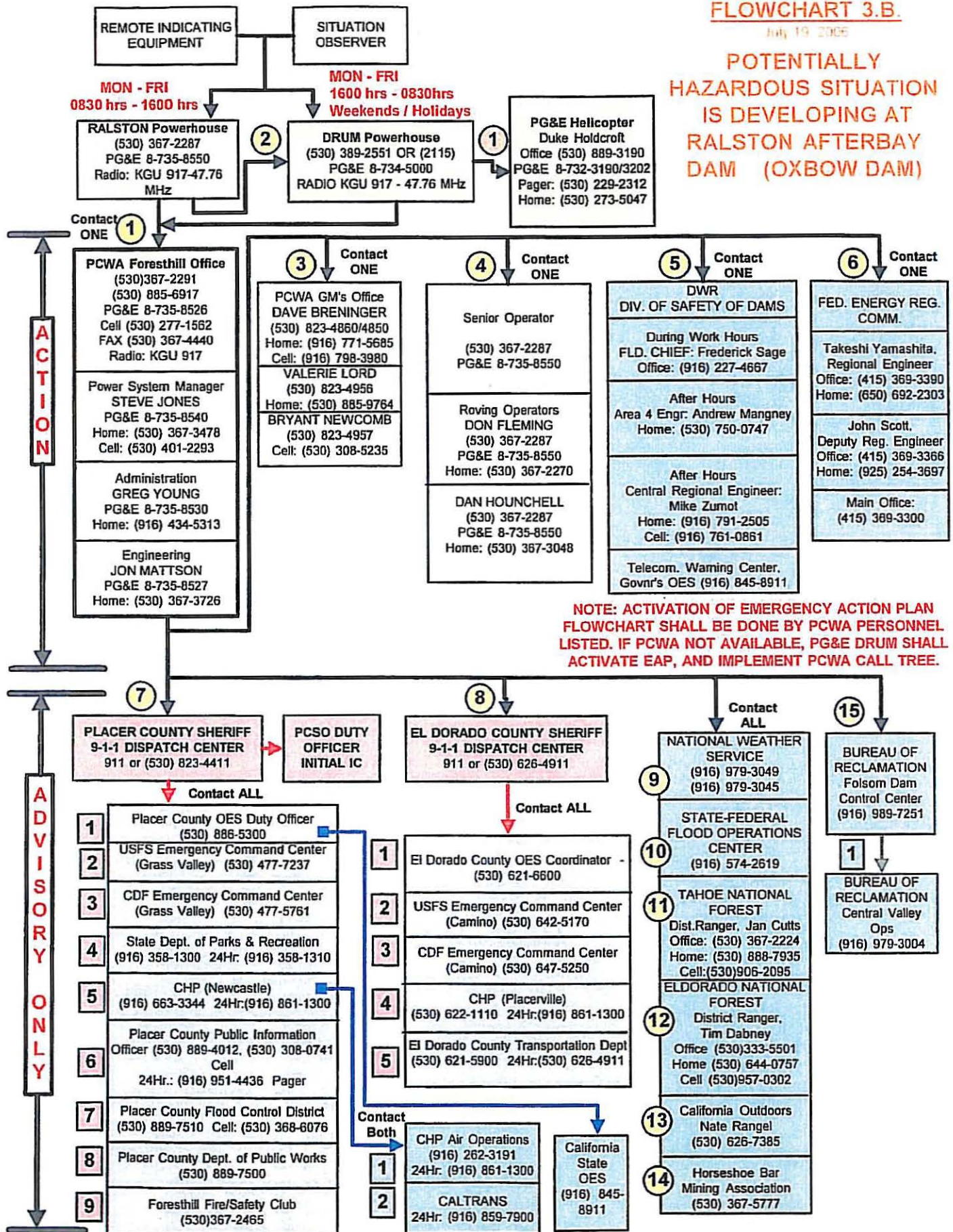


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.B.

July 19, 2005

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
RALSTON AFTERBAY
DAM (OXBOW DAM)**

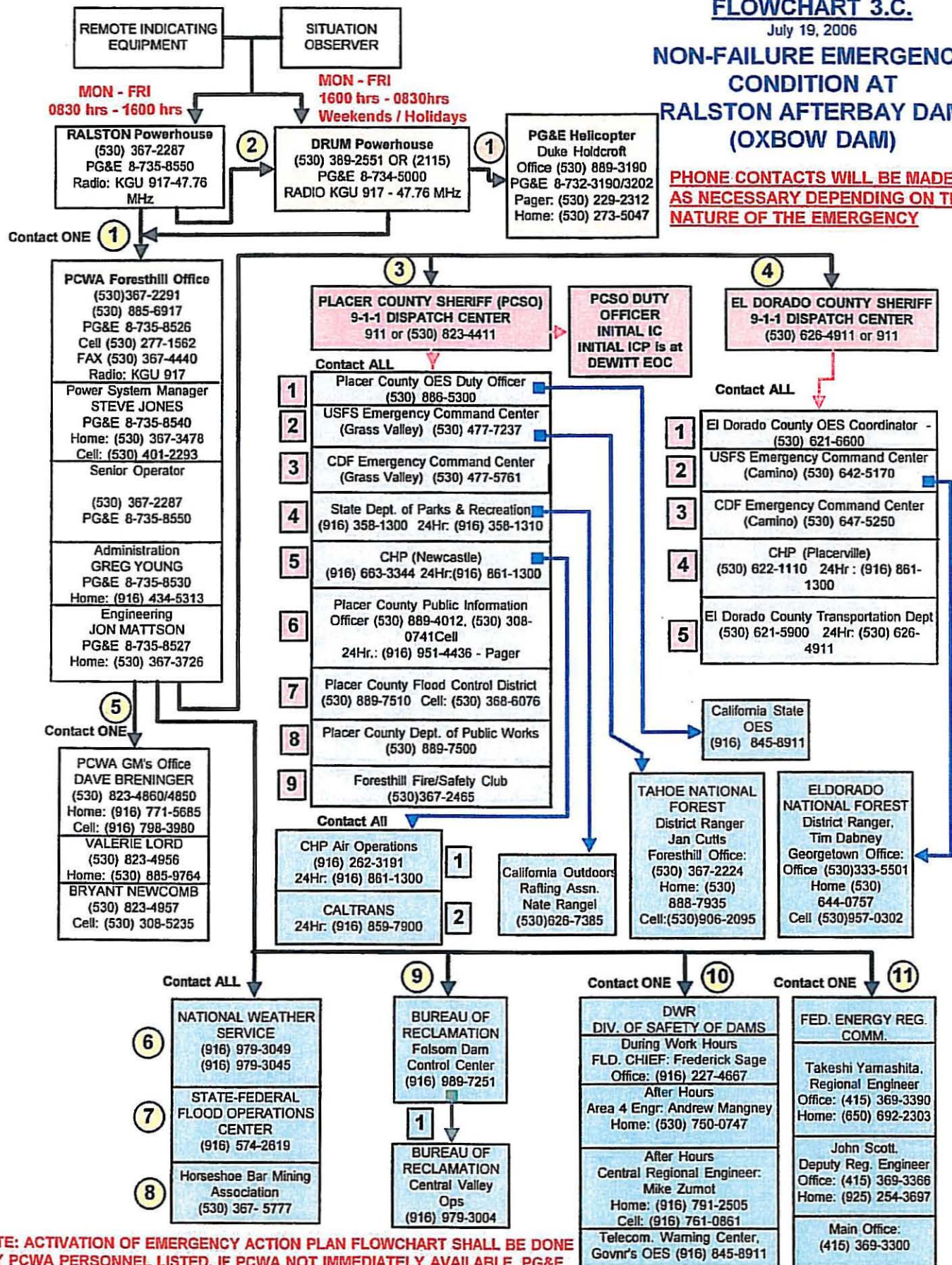


FLOWCHART 3.C.

July 19, 2006

NON-FAILURE EMERGENCY CONDITION AT RALSTON AFTERBAY DAM (OXBOW DAM)

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON THE
NATURE OF THE EMERGENCY**



NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

V. General Responsibilities Under the EAP

A.	Licensee Responsibilities	11
B.	Responsibility for Notification (Narrative of Flow Charts)	15
	1. French Meadows (L. L. Anderson) Dam CHART 1.A	15
	2. French Meadows Dam CHART 1.B	21
	3. French Meadows Dam CHART 1.C	25
	4. Hell Hole Dam CHART 2.A	26
	5. Hell Hole Dam CHART 2.B	30
	6. Hell Hole Dam CHART 2.C	34
	7. Ralston Afterbay (Oxbow) Dam CHART 3.A	35
	8. Ralston Afterbay Dam CHART 3.B	39
	9. Ralston Afterbay Dam CHART 3.C	43
C.	Responsibility for Evacuation	45
D.	Responsibility for Duration, Security, Termination and Follow-Up	45
E.	EAP Coordinator Responsibility	46

V. General Responsibilities Under the EAP

A. Licensee Responsibilities

The Emergency Action Plan (EAP) is intended to provide early warning to downstream recreational users and other persons in the vicinity who might be affected by an impending or actual sudden release of water from the project dams. Project operators shall be responsible for initial coordination and notification in the event of a dam failure or potentially hazardous condition. No action which may unduly alarm local residents or agencies shall be taken until the conditions have been completely verified, indicating an emergency which may endanger life and property.

Emergencies are classified according to their severity and urgency. There are three emergency classifications used in the EAP. Two of the classifications are related to failure of the dam, and the third being a non-failure emergency condition. The three classifications are described in Division IV, Section C, Emergency Classifications.

At least two confirming sources must be present to initiate the EAP. This is also further described in Division IV, Section C.

PCWA shall take action during an emergency as described below.

1. French Meadows Dam (L. L. Anderson Dam)

- a. In the event of a suspected dam failure of French Meadows Dam, an immediate effort will be made to stop all regulated inflow of water, and to increase the release of water from the reservoir in an effort to lower the water level and minimize the effects of a dam failure.
- b. To stop inflows:
 - (1) Stop the Duncan Creek Diversion inflows by closing the diversion tunnel gate, or by sliding plywood sheets over the intake trashrack
- c. To maximize releases:

- (1) Increase generation at the French Meadows Powerhouse, located on Hell Hole Reservoir, to maximum. If this is not possible, consider opening the turbine bypass valve 100% (this may cause damage to the powerhouse)
- (2) If safe to do so, open the dam outlet works 60-inch Ring Jet low level outlet valve to its maximum discharge capacity. This requires first starting the engine generator at the generator building on the dam near the radial spill gates
- (3) Open the dam spillway radial gates if the water level is above the spillway crest

d. If failure of the dam is imminent:

- (1) Stop generation at Middle Fork, Ralston, and Oxbow powerhouses
- (2) Close the Middle Fork and Ralston penstock butterfly valves. If time allows, close the turbine shutoff valves, and tailrace stoplog gates

2. Hell Hole Dam

- a. In the event of a suspected failure of Hell Hole Dam, an immediate effort will be made to stop all regulated inflow of water from any upstream reservoir, and increase the releases from the reservoir in order to lower the storage and minimize the effects of a dam failure.
- b. To stop inflows:
 - (1) Shut down French Meadows Powerhouse (if operating) to stop inflow from French Meadows Reservoir
 - (2) Have the Sacramento Municipal Utilities District (SMUD) (916-732-5964) increase upstream diversions from their Rubicon Reservoir and Buck Island Reservoir into Loon Lake Reservoir to minimize inflow into Hell Hole Reservoir

c. To maximize releases:

- (1) Increase generation to maximum at Middle Fork Powerhouse (Lowell J. Stephenson Powerhouse)
- (2) If safe to do so, shut down Hell Hole Powerhouse and open the dam outlet works 48-inch Howell-Bunger discharge valve to its maximum discharge capacity (considering that powerhouse damage may occur)

(Hell Hole Dam has an uncontrolled or ungated spillway, which therefore cannot be regulated)

d. If failure of the dam is imminent:

- (1) Stop generation at Ralston and Oxbow powerhouses
- (2) Close the Ralston penstock butterfly valve. If time allows, close the turbine shutoff valve, and tailrace stoplog gate

3. Ralston Afterbay Dam (Oxbow Dam)

- a. In the event of a suspected dam failure of Ralston Afterbay Dam, an immediate effort will be made to stop all regulated inflow of water from any upstream facility, and to increase the release of water from the dam in an effort to lower the storage and minimize the effects of a dam failure.

b. To reduce inflows:

- (1) Shut down Middle Fork and Ralston Powerhouses, if operating
- (2) Close spillway gates and/or 60" low level outlet Ring-Jet valve at French Meadows Dam, or 48" low level valve at Hell Hole dam (if open).
- (3) Open Duncan Creek Diversion Tunnel gate (if closed), unless natural flows in Duncan Creek are minimal anyway (less than about 10 cfs)

- (4) Request that the Sacramento Municipal Utilities District (SMUD) (916-732-5964) halt substantial releases, if any, into the South Fork of the Rubicon from Loon Lake and/or Gerle Reservoirs

c. To maximize releases:

- (1) Open all five radial spill gates at Ralston Afterbay Dam (To avoid loss of life downstream, flows must be ramped up as slowly as possible, commensurate to the risk of overall failure to the dam)
- (2) Increase generation to maximum at Oxbow Powerhouse, or open the turbine bypass valve to full open position
- (3) If necessary, open the 72" low level outlet valve (considering that sediment may be released)

4. PCWA Personnel

- a. The following persons (with home phone and pager numbers) are authorized to notify local officials, and are to be notified in order:
PCWA Power System Employees

- | | | |
|-----|--|--------------------|
| (1) | Larry Corsini - Senior Operator | 530-367-2618 |
| (2) | Stephen Jones - Power System Manager | 530-367-3478 |
| (3) | Jon Mattson - Hydro Engineer | 530-367-3726 |
| (4) | Greg Young - Administrative Specialist | 916-435-8917 |
| (5) | Marc Wyatt - Maintenance Supervisor | 530-367-3871 |
| | | 530-229-6557 pager |

PCWA Headquarters Management

- | | | |
|-----|-----------------|--------------|
| (1) | David Breninger | 916-771-5685 |
| (2) | Mike Cooper | 530-823-4959 |
| (3) | Bryant Newcomb | 530-823-4957 |

- b. Also authorized to notify local officials:

- (1) P.G.&E. Drum Powerhouse Operators

- c. Jon Mattson, Hydro Engineer, is designated as the EAP Coordinator for the Middle Fork American River Project.

5. Local Authorities

Local authorities shall be notified in accordance with the Notification Flow Charts in Division I.

B. Responsibility for Notification

1. French Meadows (L. L. Anderson) Dam CHART 1.A of Division I

Failure is imminent or has occurred at French Meadows Dam.

All emergency phone and radio numbers are listed in Notification Flow Chart 1.A, located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. In the event that a failure of the dam has occurred, or that, in the observer's best judgement, failure is likely to occur at French Meadows Dam, the observer shall notify the PCWA Ralston Powerhouse operator by telephone or by PCWA radio during the hours of 0830 to 1600 Monday through Friday. The observer shall contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends, and holidays. The observer shall give the location of the failure, size of the break, the amount of the outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, and any other critical information. If the observer is not a PCWA employee or another reliable source, independent visual confirmation of imminent failure by a PCWA Station Attendant, or other employee, is necessary, unless remote sensing equipment independently and adequately confirms the observer's report (see Division IV, Section C, Emergency Classifications). If time allows, visual confirmation in consultation with knowledgeable dam safety experts should be made prior to declaring an emergency. PCWA Station Attendants shall apply the same procedures outlined in Division V, Section A, paragraph 1, to mitigate potential damage to the dam.**

- b. **The Placer County Sheriff's Office** is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or other designated emergency response agency, takes over incident command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.
- c. **PCWA personnel** listed in Division V, Section A, paragraph 4, will be responsible for bringing expertise to the emergency operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, to the Emergency Operations Center (EOC), the Incident Command Post (ICP), or to Operational Centers, as defined under SEMS, or to other locations as needed, to assist in remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as outside technical experts from various firms or agencies, including:
- (1) **PG&E Engineering and Dam Safety Group:**
- | | |
|----------------------------------|-----------------------|
| Keith Witz, Engineering Manager | 415-973-0953 (office) |
| | 415-201-9108 (pager) |
| Erick Larson, Hydro Engineering | 415-973-3647 (office) |
| | 415-201-7542 (pager) |
| Ken Leung, Hydro Engineering | 415-973-3493 (office) |
| | 415-201-8701 (pager) |
| Wing Lee, Dam Safety | 415-973-3076 (office) |
| | 415-764-6837 (pager) |
| Robert McManus, Geotechnical | 415-973-1623 (office) |
| Charles Ahlgren, Penstock Safety | 415-973-1523 (office) |
| | 415-576-4102 (pager) |
- (2) **MWH Company:**
- | | |
|-------------|-----------------------|
| Dave Rogers | 925-975-3554 (office) |
| | 925-348-2766 (cell) |
| Dan Wade | 925-975-3586 (office) |
| | 510-773-9680 (cell) |
- (3) **U.S. Army Corps of Engineers:**
- | | |
|--------------|-----------------------|
| Lynn O'Leary | 916-557-7028 (office) |
|--------------|-----------------------|

530-902-2236 (cell)

- (4) **William Lettis and Associates**
Jeff Bachhuber 925-256-6070 (office)
925-708-6253 (cell)
- (5) **Black and Veatch Co.** Contact thru PG&E Engineering
- (6) **Mead & Hunt Co.** Contact thru PG&E Engineering
- (7) **Divine, Tarbell, & Assoc.** Contact thru PG&E Engineering
- (8) **FERC 5-Year Dam Safety Consultant:**
Dick Harlan 415-541-9445 (office)
415-716-1269 (cell)
- (9) **California Department of Water Resources Division of
Safety of Dams:**
Mike Zumot 916-227-4631 (office)
Andy Mangney 916-227-4635 (office)
- (10) **FERC - San Francisco Regional Office:**
John Onderdonk 415-369-3339 (office)
- (11) **GEI Consultants:**
Alberto Pujol 510-835-9838 (office)

- d. **The PCWA Ralston Powerhouse operator shall, during the hours of 0830 to 1600 Monday through Friday, notify the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on Flow Chart 1.A. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4, and on the Flowcharts. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Flow Chart 1.A, located in Division I.**
- e. **The Power System Manager, or other authorized PCWA Representatives, or the Drum Powerhouse operator, shall**

implement the required notification procedures, using Flow Chart 1.A.

- f. **At a minimum, the Power System Manager** (or others as specified above), shall contact the following groups or agencies, as shown in Flow Chart 1.A:
- (1) Placer County Sheriff's Office *911 Dispatch*
 - (2) El Dorado County Sheriff's Office *911 Dispatch*
 - (3) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO), and PCWA Water Division Supervisors, as necessary
 - (4) Bureau of Reclamation Folsom Dam Control Center, which in turn shall notify their Central Valley Operations Center
 - (5) National Weather Service
 - (6) State-Federal Flood Operations Center
 - (7) Horseshoe Bar Mining Association
 - (8) PCWA Station Attendants, who will in turn notify the French Meadows Campground Manager, who may have resources for patrolling and blocking the boat ramps
 - (9) Department of Water Resources Division of Safety of Dams
 - (10) Federal Energy Regulatory Commission
 - (11) Appropriate Dam Safety Experts and Consultants, if necessary (see names listed in this Division (V), Section B, paragraph 1.c)
 - (12) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)
- g. **PG&E Helicopter:** If the failure occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter to patrol the streambed and to warn all

persons in the vicinity of the danger, in coordination with emergency responders. Additional PG&E helicopters are available at Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Ctr.).

h. At a minimum, the Placer County Sheriff's office 911 Dispatch shall notify the following agencies:

- (1) Placer County Sheriff Duty Officer
- (2) Placer County Office of Emergency Services Duty Officer, who in turn will notify the State Office of Emergency Services
- (3) The United States Forest Service Emergency Command Center in Grass Valley, who in turn will notify the Foresthill District Ranger
- (4) The California Department of Forestry Emergency Command Center in Grass Valley.
- (5) State Department of Parks and Recreation, who in turn will notify the California Outdoors Rafting Association
- (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations Unit, and CALTRANS for traffic control
- (7) Placer County Public Information Officer
- (8) Placer County Flood Control District
- (9) Placer County Department of Public Works
- (10) Foresthill Fire Department and Safety Club

i. At a minimum, the El Dorado Sheriff's office shall notify the following agencies:

- (1) El Dorado County Office of Emergency Services Coordinator
- (2) The United States Forest Service Emergency Command Center at Camino, who in turn shall in turn notify the Georgetown District Ranger

(3) The California Department of Forestry at Camino

(4) California Highway Patrol Placerville Office or Central
Dispatch

(5) El Dorado County Department of Transportation

- j. **Records** - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a potential or an actual dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. A sample log sheet is included in Appendix 8 near the back of this EAP.

2. **French Meadows (L. L. Anderson) Dam CHART 1.B. of Div. I**

Potentially Hazardous Situation is Developing at French Meadows Dam.

All emergency phone and radio numbers are listed in Notification Flow Chart 1.B located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. **If a potentially hazardous situation is developing at French Meadows Dam, the observer should notify the PCWA Ralston Powerhouse operator, during the hours of 0830 to 1600, Monday through Friday. The observer should contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends and holidays. A potentially hazardous situation may include increased leakage, slumping or cracking of the dam crest or slope, rising or falling water surface, major floods, or a strong earthquake in the area. The observer should give details of the situation including location of the failure, description of the problem, amount of outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, the potential for dam failure, and any other critical information.**

PCWA Station Attendants shall be contacted at the numbers listed on Flow Chart 1.B in Division I, and sent to the site. They shall apply the same procedures outlined in Division V, Section A, paragraph 1, to mitigate potential damage to the dam.

The California State Department of Safety of Dams shall be contacted at the phone numbers listed on Flow Chart 1.B. A field representative shall be requested to inspect the dam.

The Federal Energy Regulatory Commission (F.E.R.C.)

shall be contacted at the phone numbers listed on Flow Chart 1.B. A field representative shall be requested to inspect the dam.

- b. **The Placer County Sheriff's office** is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or other designated emergency response agency, takes over incident command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.
- c. **PCWA personnel** listed in Division V, Section A, paragraph 4, will be responsible for bringing expertise to the potentially hazardous operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, or to other locations as needed, to assist in visual observations, technical analysis, and the development of remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as technical experts from outside firms or agencies, including those listed in this Division (V), Section B, paragraph 1.c.
- d. **The PCWA Ralston Powerhouse operator** shall, during the hours of 0830 to 1600 Monday through Friday, notify the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on the flow chart. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4, and on the Flowcharts. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Flow Chart 1.B, located in Division I.

- e. **The Power System Manager, or other authorized PCWA Representatives, or the Drum Powerhouse operator, shall implement the required notification procedures using Flow Chart 1.B.**
- f. **At a minimum, the Power System Manager (or others as specified above), shall contact the following groups or agencies, as shown in Flow Chart 1.B:**
 - (1) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO)
 - (2) PCWA Senior Operator, who will in turn contact Drum Powerhouse, and Roving Operators and Station Attendants, who will in turn notify the French Meadows Campground Manager, who may have resources for patrolling and blocking the boat ramps
 - (3) Department of Water Resources Division of Safety of Dams
 - (4) Federal Energy Regulatory Commission
 - (5) Appropriate Dam Safety Experts and Consultants as necessary (see names listed in this Division (V), Section B, paragraph 1.c)
 - (6) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)
- g. **At a minimum, the Power System Manager (or others as specified above), shall advise the following groups or agencies of a developing situation:**
 - (1) Placer County Sheriff's Office 911 Dispatch
 - (2) El Dorado County Sheriff's Office 911 Dispatch
 - (3) Bureau of Reclamation Folsom Dam Control Center, which in turn will notify their Central Valley Operations
 - (4) National Weather Service

- (5) State-Federal Flood Operations Center
- (6) Tahoe National Forest District Ranger
- (7) Eldorado National Forest District Ranger
- (8) California Outdoors Rafting Association
- (9) Horseshoe Bar Mining Association

h. PG&E Helicopter: If the developing situation occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter, primarily for transportation to the problem area, and to be on alert for immediate action. Additional PG&E helicopters are available at *Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Center).*

i. At a minimum, the Placer County Sheriff's office shall advise the following agencies of a developing situation:

- (1) Placer County Sheriff's Office Duty Officer
- (2) Placer County Office of Emergency Services, who in turn will notify the State Office of Emergency Services
- (3) The United States Forest Service Emergency Command Center in Grass Valley
- (4) The California Department of Forestry Emergency Command Center in Grass Valley.
- (5) State Department of Parks and Recreation
- (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations Unit, and CALTRANS for traffic control
- (7) Placer County Public Information Officer
- (8) Placer County Flood Control District

- (9) Placer County Department of Public Works
- (10) Foresthill Fire Department and Safety Club
- j. **At a minimum, the El Dorado Sheriff's office shall advise the following agencies of a developing situation:**
 - (1) El Dorado County Office of Emergency Services Coordinator
 - (2) The United States Forest Service Emergency Command Center at Camino
 - (3) The California Department of Forestry at Camino
 - (4) California Highway Patrol – Placerville
 - (5) El Dorado County Department of Transportation
- k. **Records - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a potential dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. Sample log sheets are included in Appendix 8 near the back of this EAP.**

3. French Meadows (L. L. Anderson) Dam CHART 1.C of Div. I

a. Non-Failure Emergency at French Meadows Dam

If a non-failure emergency arises at French Meadows Dam, which may include situations like damage to or sabotage of spillgates or outlet valves, hazardous material spills, etc. Notification Flowchart 1.C in Division I shall be used. The severity of a non-failure emergency may vary significantly, which would mean the involvement of emergency response agencies may differ substantially. However, there is no significant difference between the flow chart for a "Dam Failure is Imminent" condition (Flowchart 1.A), and a "Non-Failure Emergency" condition (Flowchart 1.C). Therefore, the description for the "Dam Failure is Imminent" scenario in this Division, Section B, paragraph 1, shall be used for the "Non-Failure Emergency" scenario.

4. **Hell Hole Dam CHART 2:A of Division I**

Failure is imminent or has occurred at Hell Hole Dam.

All emergency phone and radio numbers are listed in Notification Flow Chart 2.A, located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. **In the event that a failure of the dam has occurred, or that, in the observer's best judgement, failure is likely to occur at Hell Hole Dam, the observer shall notify the PCWA Ralston Powerhouse operator by telephone or by PCWA radio during the hours of 0830 to 1600 Monday through Friday. The observer shall contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends, and holidays. The observer shall give the location of the failure, size of the break, the amount of the outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, and any other critical information. If the observer is not a PCWA employee or another reliable source, independent visual confirmation of imminent failure by a PCWA Station Attendant, or other employee, is necessary, unless remote sensing equipment independently and adequately confirms the observer's report (see Division IV, Section C, Emergency Classifications). If time allows, visual confirmation in consultation with knowledgeable dam safety experts should be made prior to declaring an emergency. PCWA Station Attendants shall apply the same procedures outlined in Division V, Section A, paragraph 2, to mitigate potential damage to the dam.**
- b. **The Placer County Sheriff's Office is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or**

other designated emergency response agency, takes over incident command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.

- c. **PCWA personnel listed in Division V, Section A, paragraph 4,** will be responsible for bringing expertise to the emergency operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, to the Emergency Operations Center (EOC) or to the Incident Command Post (ICP), as defined under SEMS, or to other locations as needed, to assist in remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as outside technical experts from various firms or agencies, which are shown in this Division, Section B, paragraph 1.c.
- d. **The PCWA Ralston Powerhouse operator** shall, during the hours of 0830 to 1600 Monday through Friday, notify the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on the flow chart. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4, or the Flowcharts. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Flow Chart 2.A, located in Division I.
- e. **The Power System Manager, or other authorized PCWA Representatives, or the Drum Powerhouse operator,** shall implement the required notification procedures, using Flow Chart 2.A.
- f. **At a minimum, the Power System Manager (or others as specified above), shall contact the following groups or agencies, as shown in Flow Chart 2.A:**
 - (1) Placer County Sheriff's Office 911 Dispatch
 - (2) El Dorado County Sheriff's Office 911 Dispatch

- (3) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO), and PCWA Water Division Supervisors, as necessary
 - (4) PCWA Station Attendants, who will in turn notify the French Meadows Campground Manager, who may have resources for patrolling and blocking the boat ramps
 - (5) Bureau of Reclamation Folsom Dam Control Center, which in turn shall notify their Central Valley Operations Center
 - (6) National Weather Service
 - (7) State-Federal Flood Operations Center
 - (8) Horseshoe Bar Mining Association
 - (9) Department of Water Resources Division of Safety of Dams
 - (10) Federal Energy Regulatory Commission
 - (11) Appropriate Dam Safety Experts and Consultants, if necessary (see names listed in this Division (V), Section B, paragraph 1.c)
 - (12) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)
- g. **PG&E Helicopter:** If the failure occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter to patrol the streambed and to warn all persons in the vicinity of the danger, in coordination with emergency responders. Additional PG&E helicopters are available at Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Center).
- h. **At a minimum, the Placer County Sheriff's office shall notify the following agencies:**
- (1) Placer County Sheriff Duty Officer

- (2) Placer County Office of Emergency Services Duty Officer, who in turn will notify the State Office of Emergency Svcs.
 - (3) The United States Forest Service Emergency Command Center in Grass Valley, who in turn will notify the Foresthill District Ranger
 - (4) The California Department of Forestry Emergency Command Center in Grass Valley
 - (5) State Department of Parks and Recreation, who in turn will notify the California Outdoors Rafting Association
 - (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations, and CALTRANS for traffic control
 - (7) Placer County Public Information Officer
 - (8) Placer County Flood Control District
 - (9) Placer County Department of Public Works
 - (10) Foresthill Fire Department and Safety Club
- i. At a minimum, the El Dorado Sheriff's office shall notify the following agencies:**
- (1) El Dorado County Office of Emergency Services Coord.
 - (2) The United States Forest Service Emergency Command Center at Camino, who in turn shall in turn notify the Georgetown District Ranger
 - (3) The California Department of Forestry at Camino
 - (4) CA Highway Patrol Placerville Office or Central Dispatch
 - (5) El Dorado County Department of Transportation
- j. Records - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a**

potential or an actual dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. Sample log sheets are included in Appendix 8 near the back of this EAP.

5. Hell Hole Dam CHART 2.B of Division I

Potentially Hazardous Situation is Developing at Hell Hole Dam.

General note: All emergency phone and radio numbers are listed in Notification Flow Chart 2.B located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. **If a potentially hazardous situation is developing at Hell Hole Dam**, the observer should notify the PCWA Ralston Powerhouse operator, during the hours of 0830 to 1600, Monday through Friday. The observer should contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends and holidays. A potentially hazardous situation may include increased leakage, slumping or cracking of the dam crest or slope, rising or falling water surface, major floods, or a strong earthquake in the area. The observer should give details of the situation including location of the failure, description of the problem, amount of outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, the potential for dam failure, and any other critical information.

PCWA Station Attendants shall be contacted at the numbers listed on Flow Chart 2.B in Division I, and sent to the site. They shall apply the same procedures outlined in Division V, Section A, paragraph 1, to mitigate potential damage to the dam.

The California State Department of Safety of Dams shall be contacted at the phone numbers listed on Flow Chart 2.B. A field representative shall be requested to inspect the dam

The Federal Energy Regulatory Commission (F.E.R.C.) shall be contacted at the phone numbers listed on Flow Chart 2.B. A field representative shall be requested to inspect the dam

- b. The Placer County Sheriff's office** is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or other designated emergency response agency, takes over incident command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.
- c. PCWA personnel listed in Division V, Section A, paragraph 4,** will be responsible for bringing expertise to the potentially hazardous operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, or to other locations as needed, to assist in visual observations, technical analysis, and the development of remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as technical experts from outside firms or agencies, including those listed in this Division, Section 1, paragraph c.
- d. The PCWA Ralston Powerhouse operator** shall, during the hours of 0800 to 1630 Monday through Friday, notify the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on the flow chart. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not

available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Flow Chart 2.B, located in Division I.

- e. **The Power System Manager, or other authorized PCWA Representatives, or the Drum Powerhouse operator, shall implement the required notification procedures, using Chart 2.B.**
- f. **At a minimum, the Power System Manager (or others as specified above), shall contact the following groups or agencies:**
 - (1) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO)
 - (2) PCWA Senior Operator, who will in turn contact Drum Powerhouse, Roving Operators and Station Attendants
 - (3) Department of Water Resources Division of Safety of Dams
 - (4) Federal Energy Regulatory Commission
 - (5) Appropriate Dam Safety Experts and Consultants as necessary (see names listed in this Division (V), Section 1.c)
 - (6) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)
- g. **At a minimum, the Power System Manager (or others as specified above), shall advise the following groups or agencies of a developing situation:**
 - (1) Placer County Sheriff's Office 911 Dispatch
 - (2) El Dorado County Sheriff's Office 911 Dispatch
 - (3) Bureau of Reclamation Folsom Dam Control Center, which in turn will notify their Central Valley Operations

- (4) National Weather Service
- (5) State-Federal Flood Operations Center
- (6) Tahoe National Forest District Ranger
- (7) Eldorado National Forest District Ranger
- (8) California Outdoors Rafting Association
- (9) Horseshoe Bar Mining Association

h. PG&E Helicopter: If the developing situation occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter, primarily for transportation to the problem area, and to be on alert for immediate action. Additional PG&E helicopters are available at Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Center).

i. At a minimum, the Placer County Sheriff's office shall advise the following agencies of a developing situation:

- (1) Placer County Sheriff's Office Duty Officer
- (2) Placer County Office of Emergency Services, who in turn will notify the State Office of Emergency Services
- (3) The United States Forest Service Emergency Command Center in Grass Valley
- (4) The California Department of Forestry Emergency Command Center in Grass Valley.
- (5) State Department of Parks and Recreation
- (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations Unit, and CALTRANS for traffic control
- (7) Placer County Public Information Officer

- (8) Placer County Flood Control District
 - (9) Placer County Department of Public Works
 - (10) Foresthill Fire Department and Safety Club
- j. **At a minimum, the El Dorado Sheriff's office shall advise the following agencies of a developing situation:**
- (1) El Dorado County Office of Emergency Services Coordinator
 - (2) The United States Forest Service Emergency Command Center at Camino
 - (3) The California Department of Forestry at Camino
 - (4) California Highway Patrol - Placerville
 - (5) El Dorado County Department of Transportation
- k. **Records** - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a potential dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. Sample log sheets are included in Appendix 8 near the back of this EAP.

6. Hell Hole Dam CHART 2.C of Division I

Non-Failure Emergency at Hell Hole Dam

If a non-failure emergency arises at Hell Hole Dam, which may include situations like damage to or sabotage of the outlet valve, hazardous material spills, etc. Notification Flowchart 2.C of Division I shall be used. The severity of a non-failure emergency may vary significantly, which would mean the involvement of emergency response agencies may differ substantially. However, there is no significant difference between the flow chart for a "Dam Failure is Imminent" condition (Flowchart 2.A), and a "Non-Failure Emergency" condition (Flowchart 2.C). Therefore, the description for the "Dam Failure is Imminent" scenario in para. 4 above shall be used for the "Non-Failure Emergency" scenario.

7. **Ralston Afterbay (Oxbow) Dam CHART 3.A of Division I**

Failure is imminent or has occurred at Ralston Afterbay Dam (Oxbow Dam).

All emergency phone and radio numbers are listed in Notification Flow Chart 3.A, located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. **In the event that a failure of the dam has occurred, or that, in the observer's best judgement, failure is likely to occur at Ralston Afterbay Dam, the observer shall notify the PCWA Ralston Powerhouse operator by telephone or by PCWA radio during the hours of 0830 to 1600 Monday through Friday. The observer shall contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends, and holidays. The observer shall give the location of the failure, size of the break, the amount of the outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, and any other critical information. If the observer is not a PCWA employee or another reliable source, independent visual confirmation of imminent failure by a PCWA Roving Operator, or other employee, is necessary, unless remote sensing equipment independently and adequately confirms the observer's report per Division IV, Section C, Emergency Classifications. If time allows, visual confirmation in consultation with knowledgeable dam safety experts should be made prior to declaring an emergency.**
- b. **The Placer County Sheriff's Office is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or other designated emergency response agency, takes over incident**

command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.

- c. **PCWA personnel** listed in Division V, Section A, paragraph 4, will be responsible for bringing expertise to the emergency operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, to the Emergency Operations Center (EOC), the Incident Command Post (ICP), or Operational Centers, as defined under SEMS, or to other locations as needed, to assist in remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as outside technical experts from various firms or agencies, which are shown in this Section, paragraph 1.c.
- d. **The PCWA Ralston Powerhouse operator** shall, during the hours of 0830 to 1600 Monday through Friday, notify the Administrative Specialist or the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on the flow chart. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Flow Chart 3.A. located in Division I.
- e. **The Power System Manager**, or other authorized PCWA Representatives, or the Drum Powerhouse operator, shall implement the required notification procedures, using Flow Chart 3.A.
- f. **At a minimum, the Power System Manager (or others as specified above), shall contact the following groups or agencies, as shown in Flow Chart 3.A:**
 - (1) Placer County Sheriff's Office *911 Dispatch*
 - (2) El Dorado County Sheriff's Office *911 Dispatch*

- (3) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO), and PCWA Water Division Supervisors, as necessary
- (4) National Weather Service
- (5) Bureau of Reclamation Folsom Dam Control Center, which in turn shall notify their Central Valley Operations Center
- (6) State-Federal Flood Operations Center
- (7) Horseshoe Bar Mining Association
- (8) Department of Water Resources Division of Safety of Dams
- (9) Federal Energy Regulatory Commission
- (10) Appropriate Dam Safety Experts and Consultants, if necessary (see names listed in this Division (V), Section B, paragraph 1.c)
- (11) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)

g. PG&E Helicopter If the failure occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter to patrol the streambed and to warn all persons in the vicinity of the danger, in coordination with emergency responders. Additional PG&E helicopters are available at Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Center).

h. At a minimum, the Placer County Sheriff's office shall advise the following agencies of a developing situation:

- (1) Placer County Sheriff's Office Duty Officer
- (2) Placer County Office of Emergency Services Duty Officer, who in turn will notify the State Office of Emergency Services

- (3) The United States Forest Service Emergency Command Center in Grass Valley
- (4) The California Department of Forestry Emergency Command Center in Grass Valley.
- (5) State Department of Parks and Recreation, who in turn will notify California Outdoors Rafting Assn.
- (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations Unit, and CALTRANS for traffic control
- (7) Placer County Public Information Officer
- (8) Placer County Flood Control District
- (9) Placer County Department of Public Works
- (10) Foresthill Fire Department and Safety Club

i. At a minimum, the El Dorado Sheriff's office shall advise the following agencies of a developing situation:

- (1) El Dorado County Office of Emergency Services Coordinator
- (2) The United States Forest Service Emergency Command Center at Camino
- (3) The California Department of Forestry at Camino
- (4) California Highway Patrol – Placerville
- (5) El Dorado County Department of Transportation

j. Records - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a potential dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. Sample log sheets are included in Appendix 8 near the back of this EAP.

8. **Ralston Afterbay (Oxbow) Dam CHART 3.B of Division I.**

Potentially Hazardous Situation is Developing at Ralston Afterbay Dam.

General note: All emergency phone and radio numbers are listed in Notification Flow Chart 3.B located in Division I, except as shown in the paragraphs below. Within the project facilities, most locations can be reached via the internal PG&E phone system at the phone numbers listed. Incoming calls from the public telephone system can be made to PCWA's Foresthill Headquarters or Ralston Powerhouse, then transferred to other project locations as necessary. Within the PCWA Hydro Project dial the last three digits of the PG&E system number, i.e. 550 for Ralston Powerhouse. All initial phone calls shall be kept short and to the point, in order to avoid delaying emergency notifications to other agencies.

- a. **If a potentially hazardous situation is developing** at Ralston Afterbay Dam, the observer should notify the PCWA Ralston Powerhouse operator, during the hours of 0830 to 1600, Monday through Friday. The observer should contact the PG&E Drum Powerhouse operator during off hours (1600-0830), weekends and holidays. A potentially hazardous situation may include increased leakage, slumping or cracking of the dam crest or slope, rising or falling water surface, major floods, or a strong earthquake in the area. The observer should give details of the situation including location of the failure, description of the problem, amount of outflow, locations of settlement and cracking or tilting of earth or concrete, damage to outlet gates or valves, the potential for dam failure, and any other critical information.

PCWA operators shall apply the same procedures outlined in Division V, Section A, paragraph 1, to mitigate potential damage for the dam. In the event of a potentially hazardous situation developing at Ralston Afterbay Dam, a Roving Operator, or other PCWA employee, shall be contacted at the numbers listed on Flow Chart 3.B in Division I, and sent to the site.

The California State Department of Safety of Dams shall be contacted at the phone numbers listed on Flow Chart 1.B. A field representative shall be requested to inspect the dam.

The Federal Energy Regulatory Commission (F.E.R.C.) shall be contacted at the phone numbers listed on Flow Chart 1.B. A field representative shall be requested to inspect the dam.

- b. **The Placer County Sheriff's office** is anticipated to initially be the lead organization responsible in implementing the Emergency Action Plan, utilizing SEMS, the Standardized Emergency Management System. They will be responsible for notifying the appropriate local emergency organizations, alerting the public, and overseeing the areas affected. PCWA shall act as lead agency responding to the event, until the Placer County Sheriff's Office, or other designated emergency response agency, takes over incident command. Designation of the Incident Commander will depend on the type and immediacy of the emergency.
- c. **PCWA personnel** listed in Division V, Section A, paragraph 4, will be responsible for bringing expertise to the potentially hazardous operation in order to provide competent assessment of the situation. This may mean bringing experts to the dam site, or to other locations as needed, to assist in visual observations, technical analysis, and the development of remedial measures, flood wave assessments, etc. PCWA has in-house maintenance, operation, and engineering expertise, as well as technical experts from outside firms or agencies, including those listed in this Division (V), Section 1, paragraph c.
- d. **The PCWA Ralston Powerhouse operator** shall, during the hours of 0830 to 1600 Monday through Friday, notify the Power System Manager at PCWA Foresthill Headquarters, at the numbers listed on the flow chart. If not available, the Ralston Powerhouse operator shall notify any other PCWA representative authorized to make agency notification calls, as shown in Division V, Section A, paragraph 4. During off hours (1600-0830), weekends or holidays, the PG&E Drum Powerhouse operator shall first try to contact a PCWA representative authorized to make agency notification calls. If a PCWA representative is not available, then the Drum Powerhouse operator will implement the required notification procedure, as shown on Notification Flow Chart 3.B, located in Division I.
- e. **The Power System Manager**, or other authorized PCWA Representatives, or the Drum Powerhouse operator, shall implement the required notification procedures, using Chart 3.B.

- f. At a minimum, the Power System Manager (or others as specified above), shall contact the following groups or agencies, as shown in Flow Chart 3.B:**
- (1) PCWA General Manager, who in turn will notify the PCWA Public Information Officer (PIO)
 - (2) PCWA Senior Operator, who will in turn contact Drum Powerhouse and the Roving Operators
 - (3) Department of Water Resources Division of Safety of Dams
 - (4) Federal Energy Regulatory Commission
 - (5) Appropriate Dam Safety Experts and Consultants as necessary (see names listed in this Division (V), Section B, paragraph 1.c)
 - (6) Appropriate Contractors, if necessary (for standby, or mobilization - see names listed in Division VI, Section G, paragraph 1.h)
- g. At a minimum, the Power System Manager (or others as specified above), shall advise the following groups or agencies of a developing situation:**
- (1) Placer County Sheriff's Office 911 Dispatch
 - (2) El Dorado County Sheriff's Office 911 Dispatch
 - (3) National Weather Service
 - (4) State-Federal Flood Operations Center
 - (5) Tahoe National Forest District Ranger
 - (6) Eldorado National Forest District Ranger
 - (7) California Outdoors Rafting Association
 - (8) Horseshoe Bar Mining Association

- (9) Bureau of Reclamation Folsom Dam Control Center, which in turn will notify their Central Valley Operations
- h. **PG&E Helicopter:** If the developing situation occurs during daylight, the Drum Powerhouse operator shall make an immediate request for the use of the PG&E helicopter, primarily for transportation to the problem area, and to be on alert for immediate action. Additional PG&E helicopters are available at Rodgers Flat (530-892-4502 @ Rock Creek Switching Center), and Angels Camp (209-295-2600 @ Tiger Creek Switching Center).
- i. **At a minimum, the Placer County Sheriff's office shall advise the following agencies of a developing situation:**
 - (1) Placer County Sheriff's Office Duty Officer
 - (2) Placer County Office of Emergency Services, who in turn will notify the State Office of Emergency Services
 - (3) The United States Forest Service Emergency Command Center in Grass Valley
 - (4) The California Department of Forestry Emergency Command Center in Grass Valley.
 - (5) State Department of Parks and Recreation
 - (6) California Highway Patrol Newcastle Office or Central Dispatch, who in turn will notify the California Highway Patrol Air Operations Unit, and CALTRANS for traffic control
 - (7) Placer County Public Information Officer
 - (8) Placer County Flood Control District
 - (9) Placer County Department of Public Works
 - (10) Foresthill Fire Department and Safety Club
- j. **At a minimum, the El Dorado Sheriff's office shall advise the following agencies of a developing situation:**

- (1) El Dorado County Office of Emergency Services
Coordinator
- (2) The United States Forest Service Emergency Command
Center at Camino
- (3) The California Department of Forestry at Camino
- (4) California Highway Patrol - Placerville
- (5) El Dorado County Department of Transportation

k. **Records** - All persons involved in this action shall keep a diary that records times and the development of events, or arrange to have someone keep notes, if possible. Anyone observing a potential dam failure, should carefully note all conditions and report them in detail. Be certain to record all actions that were taken, as well as any operation that is proposed to be taken. Sample log sheets are included in Appendix 8 near the back of this EAP.

9. Ralston Afterbay (Oxbow) Dam CHART 3.C of Division I

a. Non-Failure Emergency at Ralston Afterbay Dam

If a non-failure emergency arises at Ralston Afterbay Dam, which may include situations like damage to or sabotage of the outlet valve, hazardous material spills, etc. Notification Flowchart 3.C of Division I shall be used. The severity of a non-failure emergency may vary significantly, which would mean the involvement of emergency response agencies may differ substantially. However, there is no significant difference between the flow chart for a "Dam Failure is Imminent" condition (Flowchart 3.A), and a "Non-Failure Emergency" condition (Flowchart 3.C). Therefore, the description for the "Dam Failure is Imminent" scenario in this Division, Section B, paragraph 7 shall be used for the "Non-Failure Emergency" scenario.

- 10. Copies of the Emergency Action Plan are located in a conspicuous location at the following project facilities:**

Foresthill Headquarters
French Meadows Powerhouse
Hell Hole Powerhouse
Middle Fork Powerhouse
Ralston Powerhouse
Oxbow Powerhouse
Hell Hole Dormitory
Hell Hole Garage
French Meadows Spillway Engine-Generator House
Ralston Afterbay Dam Control Building

- 11. Personnel listed below shall have a copy of the Emergency Action Plan available for their use at home in the event of an emergency:**

D. Breninger
M. Cooper
L. Corsini
D. Fleming
K. Hofferber
D. Houchell
S. Jones
J. Mattson
B. Newcomb
Station Attendant #2
M. Wyatt
G. Young

C. Responsibility for Evacuation

The responsibility for initial evacuation of any people immediately downstream of the dam in emergency conditions rests with PCWA employees listed in Division V, Section A, paragraph 4, or other employees as available. After notification of the Placer County Sheriff's Office 911 Dispatch, and after their acknowledgment of their readiness to take over command, the Incident Commander will take over responsibility for evacuations.

Since permanent housing would be minimally affected by a dam failure, there would not be a large need for evacuation shelters. However, depending on the duration of the emergency, the Incident Commander may choose to set up a temporary camp with eating and sleeping facilities for personnel involved in the operation. The California Department of Forestry or U.S. Forest Service typically can respond to this type of situation.

Typically, evacuations from the Middle Fork of the American River canyon, and its tributaries, should be to primary paved roads well above the high water mark for any flood conditions, such as to Mosquito Ridge Rd., Foresthill Road, Wentworth Springs Rd., Ralston Ridge Rd., etc. This should help identify evacuees. Names of all evacuees should be recorded, and reported to the Placer County or El Dorado County Sheriff's departments, as appropriate.

D. Responsibility for Duration, Security, Termination and Follow-Up

The Incident Commander and PCWA shall agree on and designate on-site persons to be responsible for monitoring and documenting the emergency event at the dam from start to finish, including security measures, until the emergency has terminated.

The EOC Director shall have overall responsibility for all emergency functions under SEMS, including the Management function. Depending on the magnitude of the event, he may delegate responsibility for each of the other SEMS functions, including Operations, Planning/Intelligence, Logistics, and Finance/Administration. The EOC Director shall be responsible for termination of the event. The EOC Director shall be responsible for the termination and completion of all SEMS functions, including all finance and administration issues. He shall arrange for a follow-up evaluation after the emergency by all participants. The results of the evaluation shall be documented in a written report.

E. EAP Coordinator Responsibility

PCWA's EAP Coordinator is responsible for planning EAP-related activities, preparing revisions to the EAP, establishing EAP training seminars, coordinating EAP exercises, and answering any questions in regard to the EAP. PCWA's EAP Coordinator is designated as Jon Mattson.

VI. Preparedness

A.	Surveillance	47
B.	Response During Periods of Darkness	47
C.	Access to Site	48
D.	Response During Weekends and Holidays	50
E.	Response During Periods of Adverse Weather	51
F.	Alternative Systems of Communication.....	52
G.	Emergency Supplies and Information	55

VI. Preparedness

Each EAP provided to all recipients contains all flowcharts, text, drawings, and information listed in the Table of Contents, with the exception of the Dambreak Analysis by Sierra Hydrotech (Appendix 8), which is available upon request to PCWA. Inundation maps in Division VII are also available in electronic format, if needed, upon request to PCWA. Since this EAP may contain sensitive information, each recipient shall ensure that the information contained in this section of the EAP is not distributed.

A. Surveillance

See Division IV, Section A, Emergency Detection, and Section B, Surveillance at Remotely Controlled or Unattended Dams

B. Response During Periods of Darkness

1. Response during periods of darkness.
 - a. The spillway operating deck at French Meadows Dam (L. L. Anderson Dam) will be illuminated by portable lighting. Power for this lighting is supplied by the propane powered engine generator in the block building adjacent the spillway gates, or by a backup mobile generator. Light plants may also be rented in Auburn and nearby communities.
 - b. The spillway operating decks at Ralston Afterbay Dam (Oxbow Dam) will be illuminated by permanent and portable lighting. Power for this lighting is supplied by commercial power, or by a propane powered backup engine generator in the block building adjacent the dam. Light plants may also be rented in Auburn and nearby communities.
 - c. There are no operable spill gates at Hell Hole Dam, since it is an uncontrolled spillway. If lighting is needed at the dam, it must be provided by portable lighting and a mobile generator, or by a rented light plant.
2. The day or night response times to reach the dams or to operate the spill gates at the dams when roads are clear of snow are as follows:

- a. Hell Hole Station Attendant to:
 - (1) French Meadows (L. L. Anderson) Dam - ½ hour.
 - (2) Hell Hole Dam - 5 minutes
 - (3) Ralston Afterbay Dam - 1 hour.
- b. Roving Operators to (leaving from Foresthill Headquarters):
 - (1) French Meadows (L. L. Anderson Dam) - 1 ½ hours.
 - (2) Hell Hole Dam - 2 hours.
 - (3) Ralston Afterbay Dam - ½ hour.
3. Access into canyon locations at night can be treacherous, particularly in storm conditions. Steep banks and road cuts typical in the canyon areas are sometimes unstable, and can result in land or rock slides. Extreme care should be exercised to stay above anticipated flood levels. Battery powered spotlights and PA systems should be made available to anyone evacuating people or operating equipment at night. Due to the steep canyon walls, helicopter night flights are not recommended. Under ideal weather and moonlight conditions, a properly equipped helicopter (military or law enforcement type) using equipment such as high powered lighting, a high powered PA system, radar, and infra-red night vision, may be feasible.

C. Access to Site

1. Access to most primary project facilities is by paved USFS roads. However, access to some key locations, such as the Middle Fork radio tower site, is by USFS dirt road similar to logging roads. See the inundation maps in Division VII, or USFS or USGS quad maps, for the location of access roads. Numerous dirt USFS roads access the Middle Fork American River and Rubicon River, and are also shown on the inundation maps in Division VII.
2. The primary access to PCWA's Middle Fork American River Project (MFARP) is from Auburn via Foresthill Road to Mosquito Ridge Road. Mosquito Ridge Road starts in Foresthill, and is located on the north side of the Middle Fork of the American River canyon, and ends at French Meadows Dam. This road is always above flood level for the Middle Fork

of the American River. During winter, this road is typically kept open and clear of snow to the turnoff to Interbay Dam/Middle Fork Powerhouse.

3. Blacksmith Flat Road / Ralston Ridge Road intersects Mosquito Ridge Road about eleven miles east of Foresthill. This road dips into the canyon to Ralston Afterbay reservoir, and crosses the Middle Fork of the American River near its intersection with the Rubicon River. About a mile of the road is just above river level, so it would be inundated and washed out during a failure of either Hell Hole or French Meadows reservoirs. Ralston Ridge Road continues east along the north side of the Rubicon River Canyon, then intersects Wentworth Springs Rd., and continues along the north side of Long Canyon to Hell Hole Reservoir. Ralston Ridge Road beyond Ralston Powerhouse and Afterbay are normally not kept clear of snow in winter, unless snow levels are unusually high.
4. Two roads connect Hell Hole and French Meadows Reservoirs, and are not plowed during the winter. One is paved, and connects French Meadows Dam with Wentworth Springs Road near Long Canyon. The other road, Chipmunk Ridge, is a much steeper road, is only partially paved, and is in fair to poor condition.
5. Wentworth Springs Rd. provides access to Hell Hole and French Meadows reservoir from the Georgetown area. This road dips into the Rubicon River canyon at the Ellicott Bridge area. The bridge would likely be destroyed during a worst case failure of the Hell Hole Dam. This road is not plowed during winter.
6. Other potential access to the French Meadows Reservoir area include a USFS dirt road originating at Soda Springs, and Robinson Flat Road, which is a dirt USFS road near Duncan Peak, connecting Mosquito Ridge Road with Foresthill Road. These roads are snowed under during the winter.
7. State Route Highway 49 runs between Auburn and Cool. This is a heavily traveled two lane highway. It dips into the Middle Fork canyon and crosses the river, near the Confluence of the North and Middle Forks of the American River. During failure of either Hell Hole or French Meadows dams, the highway bridge would be destroyed. Old Foresthill Road connects Highway 49 with Foresthill Road, and crosses the North Fork of the American River. This bridge would be inundated, and likely destroyed, during failure of either the Hell Hole or French Meadows Dam.

8. Access to the lower MFARP below Interbay reservoir during winter is normally by pickup truck or auto, though 4 wheel drive may be necessary on dirt roads or during snowy conditions. The upper MFARP area is accessible during winter only by snowmobile, snowcat, or helicopter. PCWA has on-site 1 Tucker and 2 LMC snowcats. Two of the snowcats are normally kept at the Hell Hole residential facility. A PG&E helicopter is available in Auburn and other areas, if needed.

D. Response During Weekends and Holidays

1. As described in more detail in Division V, Section B, Responsibility for Notification, the main control center for the Middle Fork of the American River Project (MFARP), is PCWA's Ralston Powerhouse. The powerhouse is manned five days per week between the hours of 0830 and 1600, during which PCWA operators have supervisory control of the MFARP. The powerhouse is also manned periodically on weekends. Outside the hours of 0830 to 1600 Monday through Friday, supervisory control is turned over to PG&E's Drum Switching Center at Drum Powerhouse. Drum Powerhouse is manned 24 hours per day, 7 days a week. Phone numbers are given in Division I, Notification Flow Charts. (Note: Actual control of PCWA powerhouse generation is by remote control by the Independent System Operator (ISO) in Folsom).
2. PCWA's Foresthill Headquarters is open between the hours of 0700 and 1630, Monday through Friday. Maintenance crew personnel typically work between the hours of 0700 and 1730, Monday through Thursday. Office phone numbers are given in Division I, Notification Flow Charts.
3. At Hell Hole, at least one Station Attendant is on duty between the hours of 0700 and 1530, 7 days per week. Hell Hole Station Attendant phone numbers are given in Division I, Notification Flow Charts.
4. During PCWA's off hours, Drum Powerhouse operators have authority to implement the EAP. However, the operators will first attempt to contact key PCWA personnel listed in Division V, Section A, paragraph 4.b of the EAP prior to implementation. Several PCWA employees live in the Foresthill area, and can respond to the office within 15 minutes, if reached by phone.
5. During PCWA's off hours, the first listed PCWA Power System employee contacted should travel to the Power System office immediately, after necessary initial phone calls are made, depending on the situation. He

shall contact as many Power System staff as necessary to proceed to the Power System office, the dam site, or Operational Centers. Available phone and cell phone numbers shall be recorded, and given to the Incident Command Post or Operational Centers as necessary.

E. Response During Periods of Adverse Weather

1. Response during periods of adverse weather, i.e. during snowstorms, with snow or a snowpack on the ground
 - a. Four-wheel drive vehicles and snowcats are used to reach the dams, and are equipped with chain saws, axes, shovels, and tow chains for clearing obstructions from roads.
 - b. The expected response times in adverse conditions to reach the dams or to operate spill gates at the dams are as follows:
 - (1) Hell Hole Station Attendant to:
 - (a) L. L. Anderson (French Meadows) Dam - 1 ½ to 2 hours.
 - (b) Hell Hole Dam - 15 minutes.
 - (c) Ralston Afterbay Dam - 2 to 2 ½ hours.
 - (2) Roving Operators to (leaving from Foresthill Headquarters):
 - (a) L. L. Anderson (French Meadows) Dam - 2 to 2 ½ hours.
 - (b) Hell Hole Dam - 2 ½ to 3 hours.
 - (c) Ralston Afterbay Dam - 1 to 1 ½ hours.
 - c. Due to rockslides, particularly on Mosquito Ridge Road, and particularly during storms, a loader or a backhoe should be available on short notice to remove the obstructions. This is typically handled by PCWA or the USFS. The County Road Dept. or the contractors listed in Division VI, Section G, paragraph 1.h may also be available in an emergency.

- d. If heavy equipment access is required to Hell Hole or French Meadows reservoirs, large snow blowers, preferably that cut a 10 foot wide path, may be required. Snow blowers can be obtained through some of the contractors listed in Division VI, Section G, paragraph 1.h.

F. Alternative Systems of Communication

This section covers the availability and use of alternate systems of communication. Some of this information is also covered in Division IV, Section B, paragraph 4.

1. PCWA Radio System

- a. The PCWA radio system relies on the radio base station at the Middle Fork radio tower. This base station is powered via underground cable from Middle Fork Powerhouse by commercial or backup generator power. A small on-site base station generator is also scheduled to be installed. This base station also handles radio transmissions from the river gaging stations. The incoming radio signals are transmitted via overhead cables along the penstock to Middle Fork Powerhouse, where they are then transmitted via microwave to the Foresthill microwave site. If French Meadows dam fails and inundates Middle Fork powerhouse, or the communication line along the penstock is severed, the base station can be switched to the Foresthill office, though back country communication is limited from this site. Alternate means of communication may be necessary, such as the use of U.S. Forest Service radios. Additional backup systems are being considered at this time.
- b. Microwave transmitters/receivers are located at Middle Fork Powerhouse, Ralston Powerhouse, the Foresthill microwave site, and PG&E's Sacramento Street - Auburn headquarters. Reflectors above Middle Fork and Ralston powerhouses are necessary to reflect the microwaves to the Foresthill microwave tower.

2. French Meadows Dam (L. L. Anderson Dam)

- a. The means of communication at this site is by PCWA mobile radio to PCWA's base station at the Middle Fork radio tower, which is relayed to Middle Fork Powerhouse, then transmits via microwave to Ralston Powerhouse, Foresthill Headquarters, and Drum Powerhouse. Drum Powerhouse operators monitor PCWA's radio frequency, and can therefore provide 24-hour emergency contact.

- b. Public telephone service to the French Meadows area has been discontinued. During summer months, campground attendants at French Meadows campground may have a U.S. Forest Service radio available. There are typically two station attendants who live in the Hell Hole area, who have public telephone service, as well as PG&E phone service. In the event of any sudden abnormal lake elevation readings, one or both of the station attendants would be dispatched to the site immediately to investigate and report the situation status, and to implement any action.
- c. Other potential means of communication at this site include cellular phone, in which coverage may be spotty, USFS trucks, which usually have radios, and satellite based mobile phones.

3. Hell Hole Dam

- a. The two station attendants who live in the Hell Hole area just above the right abutment of the dam are available for call out in the event of an emergency. They have several PCWA mobile radios available for communications with the Foresthill Headquarters, Ralston Powerhouse, Middle Fork Powerhouse, and PG&E's Drum Powerhouse. In addition to the radios, there are telephones in all the building facilities at this location, which provide direct communications with PCWA's Foresthill Headquarters and the public telephone network, as well as Drum Powerhouse over the internal PG&E phone system. Outgoing calls can be direct dialed into the public system. Incoming calls not from the PG&E telephone system must be routed to project locations by calling the Foresthill Headquarters or Ralston Powerhouse numbers on the Notification Flow Charts in Division I.
- b. During the recreation season, there is a public telephone available a short distance above the dam at the USFS fire station. The communications from the Hell Hole area is reliable, and should be adequate for most emergency situations. In the event of any unexplained sudden change in reservoir elevation, one or both of the station attendants would be immediately dispatched to investigate, report the situation, and implement any action required.
- c. Other potential means of communication at this site include cellular phone, in which coverage may be spotty, USFS trucks, which usually have radios, and satellite based mobile phones.

4. Ralston Afterbay Dam (Oxbow Dam)

- a. Oxbow Powerhouse is approximately one mile below Ralston Powerhouse. Ralston Powerhouse is the control plant for all of PCWA's facilities, and is only a few minutes travel time from the Ralston Afterbay Dam. At the Ralston and Oxbow Powerhouses, there is access to both the internal PG&E phone system, and the public telephone system. There are also several telephones which are on the internal PG&E line located at the dam and at the standby generator building. Mobile radios in the vehicles are available for communication with Foresthill Headquarters, Ralston Powerhouse, Middle Fork Powerhouse, and PG&E's Drum Powerhouse. The communications system available at this site should be adequate for emergency situations.
- b. Other potential means of communication at this site include cellular phone, in which coverage may minimal without seeking higher ground, USFS trucks, which usually have radios, and satellite based mobile phones.

5. PCWA Foresthill Headquarters (Potential Incident Command Post)

- a. PCWA Headquarters has four telephone lines available through the Foresthill Phone Company, and two internal PG&E system phone lines that are transmitted from PG&E's microwave site in Auburn. Phone numbers are listed in the Flow Charts in Division I. The office also has radio terminals that tie via microwave to the radio base station above the Middle Fork Powerhouse penstock, and a SCADA terminal (Supervisory Control and Data Acquisition) for monitoring project operations. A television is also available at the headquarters, for reviewing local coverage.
- b. To supplement communications at PCWA's Foresthill Headquarters during an emergency, following are several alternatives:
 - (1) Placer County Sheriff's Office Mobile Communication Van
 - (2) Foresthill Fire Department Trucks
 - (3) USFS Trucks
 - (4) CDF Trucks
 - (5) Cellular Phones (a Verizon tower is nearby)
 - (6) Nextel Radio Telephones, possibly available from the service provider for emergency use
 - (7) Mobile Satellite Phones
 - (8) National Weather Service Radio

- c. Other facilities are available in the area, which the Tahoe National Forest has investigated for use in emergencies.

G. Emergency Supplies and Information

1. Stockpiling Materials and Equipment

- a. Placer County Water Agency, Power Systems Division, has the following equipment.
 - 1 ea. Clark 55C Loader
 - 1 ea. John Deere Grader
 - 1 ea. 6 cy Dump truck with blade
 - 1 ea. John Deere 410 backhoe
 - 1 ea. LMC snowcat
 - 2 ea. Tucker snowcats
 - Mobile generators, air compressor, and welding equipment
- b. The US Forest Service has the following equipment.
 - 1 ea. 6 CY Dump truck with blade
 - 1 ea. Tucker 2000 D snowcat with groomer
 - Several snowmobiles
- c. Placer County Road Dept. has the following equipment.
 - Backhoes
 - Road Grader
 - Loaders
 - Loader mounted snowblowers
 - Dump trucks
- d. PG&E in Auburn (Sacramento and Canal Streets) has the following equipment:
 - Backhoes
 - Dump trucks
 - Loaders
 - Snowcats
- e. Materials such as concrete would have to come out of the Auburn and Colfax areas, from plants such as Chevreaux, Miles, and MBI.

- f. Fill and riprap materials are available in the project area, in particular at the following sites:
- (1) French Meadows Dam spoil site, near the radial spill gates - primarily all sizes of riprap, and rock with sands and silts mixed in - approx 35,000 cubic yards
 - (2) Middle Fork Powerhouse Road Quarry Site - primarily sands, gravels, and silts - approx 16,000 cubic yards
 - (3) Mosquito Narrows Disposal Site - about 35,000 cubic yards of processed aggregate base
 - (4) Ralston Spoil Site near the Ralston surge chamber and top of penstock - primarily cobbles mixed with sands, gravels, and silts - this is a less desirable site, since it is built with a permanent drainage system, and is accessed by a very steep road - approx 50,000 cubic yards
 - (5) Ralston Afterbay Dam Spoil Site located just downstream of the dam - primarily cobbles mixed with sands, gravels, and silts - approx 75,000 cubic yards
 - (6) Indian Bar Sediment Storage Site located adjacent Oxbow Powerhouse - primarily cobbles mixed with sands, gravels, and silts - approx 50,000 cubic yards
 - (7) Long Canyon Spoil Sites near the Long Canyon diversions and Long Canyon penstock crossing - primarily cobbles mixed with sands, gravels, and silts - several sites totaling approx 10,000 - 20,000 cubic yards
- g. Construction Equipment Rental Companies
- (1) U.S. Rental Co. - Rocklin 916-624-0641
 - (2) Nations Rents - Auburn 530-885-7085
 - (3) Hertz Equipment Rental 916-372-2266
 - (4) Shanahan Equipment Co. 916-373-0132
 - (5) Neff Equipment 916-381-2500
 - (6) SMA Equipment 916-373-0132

h. General Engineering Contractors

(1)	PG&E Hydro Const. Dept. , Auburn	530-889-5075
(2)	Todd Excavating, Colfax	530-878-7131
(3)	Tiechert Construction, Sacramento	916-484-3286
(4)	Baldoni Construction, Auburn	530-885-5210
(5)	Gabe Mendez Construction, Newcastle	530-663-1468
(6)	Gary Taylor Heavy Hauling, Sacramento	916-389-2850
(7)	Kiewit Pacific, Concord	925-686-3030
(8)	Hutchins Paving, Redding	530-246-4272

i. Helicopters

Helicopters may be available from several sources, including PG&E, California Dept. of Forestry, California Highway Patrol, and the military, as noted in the Division I Flow Charts. A high powered PA system on each helicopter is advisable for warning people on the ground. Where a PA system is not effective, an alternate means of notification should be used, such as a written message dropped from the helicopter, using a highly visible drop.

2. Coordination of flows

- a. Weather and runoff forecasting is achieved by communicating with the National Weather Service Flood Forecast Center.
- b. Actions to be taken to lower reservoir levels by reduce inflows into the reservoir, and increasing discharges out of the reservoir, are covered in more detail in Section V.A Licensee Responsibilities.

3. Alternative sources of power for spillway gate operation and other emergency uses:

- a. If there is a loss of primary power from the stationary propane engine generator at the French Meadows Dam (L. L. Anderson Dam) spillway, two alternate methods of emergency spill gate operation are available, and are stored at the Hell Hole parking garage area:
 - (1) Emergency generator wired into permanent system
 - (2) A small portable gasoline engine "chain saw type" operator,

with an adapter that attaches to the manual operating shaft, on the gate mechanism.

- (3) Manual hand crank (not recommended, too time consuming)

b. If there is a loss of primary commercial power at Ralston Afterbay Dam, three alternate methods of emergency spill gate operation are available. The portable equipment is stored at the Foresthill Headquarters building:

- (1) Standby propane-powered engine generator, located in the block building near the dam
- (2) A small portable gasoline engine powered hydraulic operator, or a portable gasoline engine "chain saw type" operator, with an adapter that attaches to the manual operating shaft on the gate mechanism.
- (3) Manual hand crank (not recommended)

VII. INUNDATION (FLOOD) MAPS

The following maps, tables and hydrographs are included behind the individual tabs for each dam.

1. **French Meadows (LL Anderson) Dam (PMF failure conditions and Fair Weather failure conditions are shown as one; no significant difference)**
 - a. Flood Emergency Map Index Sheet
 - b. Ten Flood Emergency Map Sheets
 - c. Table FM 1 of Cross Sectional Data
 - d. Hydrographs FM1, FM8, FM15, FM116, FM190
2. **Hell Hole Dam (PMF failure conditions and Fair Weather failure conditions are shown as one; no significant difference)**
 - a. Flood Emergency Map Index Sheet
 - b. Eleven Flood Emergency Map Sheets
 - c. Table HH 1 of Cross Sectional Data
 - d. Hydrographs HH 1, HH9, HH11, HH101, HHR28, HHR118, HHC1
3. **Ralston Afterbay (Oxbow) Dam (PMF and Fair Weather Failure conditions shown separately)**
 - a. Flood Emergency Map Index Sheet
 - b. Seven Flood Emergency Map Sheets
 - c. Table RA 1 and RA 2 of Cross Sectional Data
 - d. Hydrographs RA 8, RA112, RAC1, RAF9, RAF111, RAFC1

The following paragraphs (on pages 59 – 66) are placed following the index-tabbed section labeled Ralston Dam Flood Maps.

A.	Narrative Explanation of Maps – Hell Hole to Ralston Afterbay.....	59
B.	Narrative Explanation of Maps – French Meadows to Ralston Afterbay.....	61
C.	Narrative Explanation of Maps – Ralston Afterbay to Folsom Dam.....	61
D.	Index of Inundation Maps.....	66

VIII. Appendices

- A. Dambreak Analysis (copies of Sierra Hydrotech report available on request @ (530) 885-6917)**
- B. Plans for Training, Exercising, Updating, and Posting**
- C. Site Specific Concerns**
- D. Documentation**
- E. Dam Inspection Guidelines**
- F. Event Log Sheets**
- G. Approval of the EAP**

VIII. Appendices

Each EAP provided to all recipients contains all flowcharts, text, drawings, and information listed in the Table of Contents, with the exception of the Dambreak Analysis by Sierra Hydrotech (Appendix 8), which is available upon request to PCWA. Inundation maps in Division VII are also available in electronic format, if needed, upon request to PCWA. Since this EAP may contain sensitive information, each recipient shall ensure that the information contained in this EAP is not distributed.

A. Dambreak Analysis

On November 23, 1993, Sierra Hydrotech, an engineering consulting firm, at Placer County Water Agency's request, provided an extensive dam break and inundation investigation for the Middle Fork American River Project. The study describes investigation and analysis of hypothetical dam failures and subsequent inundation of downstream areas for the three largest dams: French Meadows (L. L. Anderson), Hell Hole, and Ralston Afterbay. These facilities are owned and operated by Placer County Water Agency.

The Regional Engineer of the Federal Energy Regulatory Commission directed Placer County Water Agency to update the Emergency Action Plan for PCWA's Middle Fork American River Project. Included in this Emergency Action Plan are tables containing the analysis results, and inundation maps showing the extent of inundation resulting from a hypothetical, worst case dam failure.

For a worst case failure of Hell Hole Dam, the inundation maps show the extent of inundation along the approximately 78 miles of river between Hell Hole Dam and Folsom Dam. For a worst case failure of French Meadows Dam, the maps show the extent of flooding on the approximately 69 miles between French Meadows Dam and Folsom Dam. Inundation maps showing the extent of flooding on the approximately 47 miles between Ralston Afterbay Dam and Folsom Dam include both a worst case failure during fair weather, and a worst case failure with a once-in-ten-thousand-year flood occurring over the watershed above Ralston Afterbay Dam. This is called the Probable Maximum Flood (PMF) condition.

Downstream flooding under each of the two conditions (fair weather and PMF) is quite different for a worst case failure of Ralston Afterbay Dam, while there is very little difference in downstream flooding resulting from a worst case failure of either French Meadows Dam or Hell Hole Dam under each of the two conditions. Therefore, only the inundation maps for the PMF condition are in Section 5 for French Meadows and Hell Hole Dams. A copy of the November 23, 1993, "Dam Break and Inundation Investigation" is available at PCWA's Power System Office.

B. Plans for Training, Exercising, Updating, and Posting

1. Posting the Emergency Action Plan. A copy of the complete Emergency Action Plan is available at the locations shown in Division V, Section B, paragraph 10.
2. Annual training of project operators and other responsible personnel, and general orientation training for the maintenance crew
 - a. This Emergency Action Plan shall be carefully reviewed by each member of the operating staff on an annual basis under the guidance of the Senior Operator. The Emergency Action Plan shall also be reviewed annually by PCWA employees in the following positions:

Power System Manager
Administrative Specialist
Maintenance Supervisor
Hydro Clerk
Hydro Engineer
 - b. The annual test, as described in paragraph 5 of this section, shall also serve as part of the annual training program.
 - c. The objective of the annual training program shall be to train each project employee to act effectively in carrying out their duties in the event of an emergency, as described within the Emergency Action Plan. Employees shall be trained to recognize and evaluate emergency situations, and to quickly and efficiently respond if an emergency occurs. Members of the operating and maintenance staff shall be trained to recognize the danger signs of impending trouble at dams and reservoirs, and how to perform visual inspections of these facilities. The following reference materials shall be used to assist in this part of the training:
 - (1) U.S. Government Printing Office: Training Aids for Dam Safety - Module: Inspection of Embankment Dams.
 - (2) P.G.&E. Hydro Bulletin No. 55 - Dam Inspections
3. Those personnel whose function requires shall be trained in the proper notification procedure.

4. Annual review

- a. It is our intent to annually review and update these plans as required by the Federal Energy Regulatory Commission. The FERC will be notified each year of any changes made, or if none are required.

5. Test of state of readiness:

Annual testing of the emergency plan shall be conducted by personnel of PCWA to the fullest extent possible. The extent of this testing will be dependent upon the cooperation of the various organizations who will be participating in the plan. Every effort will be made by PCWA to obtain the full participation from these responsible entities in order to make a complete and meaningful test.

6. All of the employees of the Placer County Water Agency Power System Division shall continue to be trained to perform their required functions in the event of a dam failure emergency.

7. Distribution of the Emergency Action Plan.(EAP)

- a. The EAP shall be posted in a conspicuous location at project facilities listed in Division V, Section B, paragraph 10. The EAP shall be distributed to all operational and supervisory personnel who are responsible to take certain actions when the plan is put into effect. The personnel listed in Division V, Section B, paragraph 11 shall have a copy of the EAP available for their use in the event of an emergency condition.

C. Site Specific Concerns

1. If a failure of any of the dams covered in this EAP were to occur, the most critical time periods for a failure would probably be as follows, starting with the most critical first:
 - a. Late spring and early summer, when snowpacks are still high, and when use of the river canyons for rafting, mining, hiking, boating, and camping is heavy, and Folsom Lake is likely to be near maximum levels. If failure of the dam were to occur, spill gate releases through Folsom could impact downstream property and lives.
 - b. During extreme winter storms like the "pineapple express", when flood releases at the dams are already near maximum levels, particularly downstream of Folsom Lake, where huge impacts to property and lives are at stake. Since use of the river canyons would be very low at this time, impacts to lives upstream of Folsom Dam would be more limited, and Emergency Response Agencies would already be on a high state of alert.
 - c. Later in the summer, though use of the river canyons is still high, Folsom Lake would normally be lower, thus having more reserve storage capacity, and likely could absorb the volume of French Meadows or Hell Hole reservoirs, without having to release large volumes of water through the spill gates.
 - d. During fall and winter, when recreation in the river canyons is minimum, and reservoir reserve storage capacity is maximum.
2. A complete set of project drawings is kept at PCWA's Foresthill Headquarters in the print room. Each drawer is labeled, and has its own drawing index.
3. Access roads to the dams are somewhat limited. Please refer to the General Vicinity Map, and the Inundation Maps in Division VII for more details.

D. Documentation

The following items are included in Appendix D:

Middle Fork American River Development Brochure
Items of Correspondence

Placer County Water Agency

Power System: 24625 Harrison St. • Mail: P.O. Box 667 • Foresthill, California 95631
(530) 367-2291 (530) 885-6917 FAX (530) 367-4440



A Public Agency

BOARD OF DIRECTORS

Pauline Roccutti • Alex Ferreira
Otis Wollan • Lowell Jarvis
Michael R. Lee

David A. Breninger, General Manager
Ed Tiedemann, General Counsel

January 11, 2005

Mr. Takeshi Yamashita, Regional Engineer
FEDERAL ENERGY REGULATORY COMMISSION
901 Market Street, Suite 350
San Francisco, CA 94103

Subject: Middle Fork American River Project EAP, FERC Project 2079
Emergency Action Plan

Dear Mr. Yamashita:

We have enclosed three copies of the complete reprinting of the Middle Fork American River Project Emergency Action Plan (EAP) in accordance with FERC directions. The EAP is currently being distributed to our employees and emergency response agencies which have responsibilities under the EAP. The EAP incorporates information learned from our Functional Exercise on February 24, 2004, and conforms to FERC's EAP Guidelines established in 1998. We have also included a CD with each of your copies that contains the inundation maps in .pdf format. These are provided to the EAP emergency response agencies, if requested.

Please review the EAP, including your designated role in responding to emergencies at the major dams on the Middle Fork American River Project. If you have any comments or corrections, please let us know as soon as possible. Please sign the enclosed sheet, indicating your receipt of the three copies of the EAP, and your concurrence with your role in the EAP.

If you have any questions, please call Jon Mattson or me at (530) 885-6917.

Sincerely,

PLACER COUNTY WATER AGENCY

Stephen J. Jones
Power System Manager

Enclosure

RECEIVED

MAR 14 2005

FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

Division of Dam Safety and Inspections - San Francisco Regional Office

901 Market Street, Suite 350, San Francisco, California 94103

(415) 369-3300 Office

(415) 369-3322 Facsimile

**PLACER COUNTY WATER AGENCY
POWER SYSTEM**

March 8, 2005

**In reply refer to:
Project No. 2079-CA
NATDAM Nos. 00856,
00857, 00859**

**Stephen J. Jones, Power System Manager
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631**

Re: Emergency Action Plan (EAP) Submittal

Dear Mr. Jones:

Thank you for your letter dated January 11, 2005 that transmitted the complete five-year reprint of the EAP for your Middle Fork American River Project, FERC Project No. 2079. We have reviewed the EAP and found it to be workable.

In your transmittal letter, you stated that you are distributing the EAP to agencies with responsibilities under the EAP. You requested that our office return the confirmation receipt form that you sent; the signed confirmation form is enclosed.

We note the following minor errors and/or omissions in the EAP.

- Section III. – Project Description should include critical site specific concerns or refer to Appendix C.
- Section III, IV, VI, VIII. - Please include a statement indicating if the distribution of detailed drawings, and information was limited to only parties that would need that level of detail.
- On the copy of the EAP that was reviewed, a number of the parts of Section VII were found in Section V. Section VIII was out of order; please make sure that the EAP sheets are placed in the proper Sections.

- Section VII. – The antecedent flow conditions should be described (e.g., sunny day, IDF).
- Appendix D – The most recent consultation documentation was not found, please reference Section VIII D in Chapter VI of FERC's Engineering Guidelines.

Please submit the items listed above with a corrected copy of the EAP by May 10, 2005. Your continued cooperation in this aspect of the Commission's program is appreciated. If you have any questions, please contact Mr. John Onderdonk at (415) 369-3339 or at john.underdonk@ferc.gov.

Sincerely,



Takeshi Yamashita, P.E.
Regional Engineer

Enclosure (Confirmation Receipt)



**PLACER COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT**

Tim Hackworth, Executive Director
Brian Keating, District Engineer
Andrew Darrow, Development Coordinator

February 28, 2005

Jon Mattson
Placer County Water Agency
P.O. Box 667
Foresthill, CA 95631

RE: Middle Fork American River Project / Emergency Action Plan

Dear Jon:

We have reviewed the Emergency Action Plan (EAP) dated December 31, 2004 for the subject project and have the following comments.

1. The District recommends that the EAP include detailed information regarding available real-time river stage data along the Middle Fork of the American River.
2. There appears to be a lack of stream level gages along the Middle Fork of the American River. The District recommends that additional gages be considered at critical locations downstream of the dam sites. This would assist in monitoring the downstream impacts due to a dam failure.
3. Add the Placer County Flood Control District to all notification flowcharts in the EAP. The following contact numbers should be used for the District: Office (530) 889-7510, Cell #1 (530) 308-2180, Cell #2 (530) 368-6076.
4. Add the Placer County Flood Control District to the Placer County Sheriff's notification lists on pages 19, 24, 29, 33, 38 and 42 of the EAP.
5. The District requests that a copy of the completed emergency coordination MOU be provided for our information.

Please call me at (530) 889-7541 if you have any questions regarding these comments.

Andrew Darrow, P.E.
Development Coordinator

d:\data\letters\cr05-46.doc

FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

Division of Dam Safety and Inspections - San Francisco Regional Office

901 Market Street, Suite 350, San Francisco, California 94103

(415) 369-3300 Office

(415) 369-3322 Facsimile

RECEIVED

JAN 26 2005

PLACER COUNTY WATER AGENCY
POWER SYSTEM

January 24, 2005

In reply, refer to:

Project No. 2079-CA

NATDAM Nos. CA00856,

CA00857, CA00859

Stephen J. Jones, Power System Manager
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631

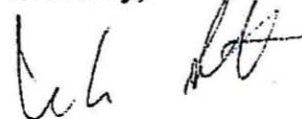
Re: Middle Fork American River, Project No. 2079 - 1999 Emergency Action Plan (EAP)

Dear Jones:

We received three copies of the five year reprint EAP with your transmittal letter dated January 11, 2005. We will review the reprinted EAP and send your office a letter after our review is complete. We have received an email from Mr. Jon Mattson dated January 20, 2005, where he requested that we return to your office the 1999 version of the EAP. As Mr. Mattson requested, we enclose our copy of the 1999 EAP.

If you have any comments or questions, please contact Mr. John Onderdonk at (415) 369-3339 or at john.underdonk@ferc.gov. Your continued cooperation on all dam safety issues is greatly appreciated.

Sincerely,



(For) Takeshi Yamashita, P.E.
Regional Engineer

Enclosure

FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections - San Francisco Regional Office
901 Market Street, Suite 350, San Francisco, California 94103
(415) 369-3300 Office (415) 369-3322 Facsimile

March 10, 2004

In reply, refer to:
Project No. 2079-CA
NATDAM: CA00856

Stephen J. Jones, Power System Manager
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631

RE: Follow-up comments on the February 2004 EAP Table Top and Functional exercises.

Dear Mr. Jones:

Ms. Jill Eichbauer and Mr. John Onderdonk of my staff attended the Table Top (TT) and Functional Exercise (FNX) of the Emergency Action Plan (EAP) for the Middle Fork American River Hydro, Project No. 2079 on February 11, 2004 and February 25, 2004 respectively. Mr. Kurt Roblyer, also of my staff, attended the TT. Ms. Eichbauer found a lot of effort and planning was put in to the exercises by PCWA and your consultant Ms. Sackheim. There was also a good turn out by emergency agencies, which accurately depicted the various groups which would be involved in an actual emergency at the project. The exercises revealed numerous areas where improvements need to be made for an effective evacuation.

PCWA handled the FNX failure scenario appropriately, calling DSOD and FERC for an inspection upon discovery of the clear running new seepage, then initiating the imminent failure EAP upon discovery that the seepage had greatly increased and was now transporting material from the dam. After notifying agencies according to the EAP flow chart, PCWA turned their attention to operation tasks as should be expected and is intended by the EAP.

The break down in the FNX appeared to be with the numerous response agencies involved. Unique difficulties are encountered with MFAR project because the project spans two counties and two national forests. Communication between these agencies and between these agencies and PCWA needs improvement. According to Chapter 3 of FERC's Engineering Guidelines, "Warning and evacuation planning are the responsibility of local authorities who have the statutory obligation. Under the EAP the licensee is responsible for notifying the appropriate emergency management officials when flooding is anticipated, dam failure is imminent or has occurred, or a potentially hazardous situation is developing." Recognizing that PCWA correctly notified response agencies, yet the FNX did not result in a timely evacuation response, I suggest PCWA encourage the agencies to create a plan, including which agency will head the response effort and where the central command center will be located. PCWA may want to request a copy of this plan.

One complaint of the response agencies was the difficulty in getting information from PCWA. It appeared PCWA was communicating well with OES but the information was not reaching the sheriffs. Once resource agencies create a central command center for the emergency, it will be possible for one PCWA staff person to focus on communicating information from other, on-site, PCWA staff, to a single person working on the rescue side of the emergency; this person can then disseminate the information to the various rescue groups.

During the exercise, one of the sheriffs did not understand what "imminent failure" of the dam meant. It is recommended a short speech be added to the EAP for use when calling agencies to eliminate this type of misunderstanding.

Please submit a report with your review of the exercises to this office by April 26, 2004. Thank you for your continued cooperation in our dam safety program. If you have any questions, please contact Jill Eichbauer at (415) 369-3362 or John Onderdonk at (415) 369-3339 or via email at jill.eichbauer@ferc.gov or john.underdonk@ferc.gov, respectively.

Sincerely,

TAKESHI YAMASHITA

Takeshi Yamashita, P.E.
Regional Engineer

E. Dam Inspection Guidelines – Hydro Bulletin #55

General Information Bulletin

From: HYDRO GENERATION - POWER GENERATION

Subject: DAM INSPECTIONS



Bulletin No. 55
Page 1 of 1
Issued: 04/01/75
Revised: 03/01/99

HYDRO SUPERINTENDENTS

PURPOSE

The purpose of this bulletin is to provide a generic procedure to assist Hydro personnel in the annual inspection of all company dams.

RESPONSIBILITY

Hydro Superintendents are responsible for enforcement of this bulletin.

DISCUSSION

This bulletin provides general information on dam inspections, to help determine potential problems, and to detect significant changes.

PROCEDURES

Supplement 1 explains procedures, notification and required reports.

Appendix 1, Dam Inspection Report, Form 74-555.

RANDY S. LIVINGSTON

DKB:dkb

DAM INSPECTIONS

GENERAL INFORMATION

Dam inspections serve two purposes: to determine potential problems, and to detect significant changes. A recommendation is the Company inspector be an experienced engineering specialist. It is important the inspector be experienced in all regards of the past performance and characteristics of the dams involved. Other concerns are the ability to evaluate hydraulic and hydrologic capabilities, stability, and operational adequacy of the facilities.

1. OPERATION AND MAINTENANCE

A thorough and systematic dam inspection routine includes, but may not be limited to, the following:

- Walk the complete crest length observing both the upstream and downstream slopes.
- Inspect the outlet operator and water surface staff gage.
- Walking the downstream groins and toe, where possible. Inspect any existing gallery.
- Inspecting the spillway to include gates and their operators, flashboards, log booms, etc.
- Inspecting the reservoir outlets, such as tunnel intake or low level (sluice) where feasible.
- Inspection of the shoreline, as practical, for possible slides, encroachments, etc.
- Taking photographs as necessary.

ITEMS TO INSPECT

Listed below are specific items deserving particular attention at the dam or appurtenant structures. This list is comprehensive and many items may not be applicable to a specific facility.

Dams

- Settlement, displacement, tilting or cracking Of earth, rock or concrete components:
- Inspect the structure for movement, the Junction of the structure with the abutments for rock faulting or fractures, and the concrete construction Joints.
- Crest erosion on earth or rockfill dams.
- Service ability of concrete joint sealer compounds, particularly in upstream gunite or concrete faces.
- Erosion or slope instability (sloughing or slides) on upstream and downstream faces of earth or rockfill dams.

1. OPERATION AND MAINTENANCE

Outlets (continued)

Condition of sluice gates, trash racks, and pipes, where feasible, to observe condition of the conduit and possible piping.

Sediment deposits affecting outlets.

Lubrication of mechanical equipment such as operators, hoists, cables, etc.

Penstocks

Tunnel and penstock intake structures, to include trashracks and rakes, electrical and mechanical equipment.

Leakage and Seepage

Weirs: Read and record established staff gages. Verify gages by measuring depth of water over weirs. Inspect stilling basins for siltation.

At non-weirs locations: estimate and record amount of flow and describe location. Consider installation of a weir if flow is substantial and/or appears to be increasing.

Discoloration or turbidity in water.

General

Performance instrumentation: Disturbed survey monuments, unlocked well or piezometer caps, damaged weirs, etc.

Fish ladders or screens for adequate operational performance.

Plugged or non-functioning drains.

Sediment deposits affecting storage.

General concrete deterioration and continued serviceability.

Condition of protective paint and other coatings.

Condition of timber structures such as walkways, flashboards, etc.

Safety, with respect to both employees and visitors. Pay particular attention to ladders, stairways, walkways and lighting.

Adequacy, presence and condition of signs, such as General Recreation Warning signs, Maximum Water Surface signs, and other warning signs.

1. OPERATION AND MAINTENANCE

ITEMS TO INSPECT

Dams (continued)

Rodent activity at earth dams.

Vegetation control: A growth of native grasses is desirable in order to reduce erosion even though it tends to hide rodent activity and seepage, and a limited amount of low growing brush is acceptable. However, remove berries, alders, willows, and conifer saplings before they become established to avoid root growth and future piping problems. Remove this growth from the crests, faces, groins, and toes of earth and rockfill dams, and the groins and toes of concrete dams.

Condition of water surface staff gages, recorders and floatwells.

Spillways

Spillway erosion, undercutting, and restrictions or possible constriction such as debris, slides, vegetation, etc.

Condition of spillway energy dissipaters or flip buckets.

Height of flashboards installed compared to allowable maximum, and flashboard security.

Performance or condition of radial, drum, or slide gate seals.

Clearances to raise gates to their intended heights.

Miscellaneous

Log booms: Amount of submergence, condition, and continuity.

Electrical and mechanical gate operating equipment, such as operators, hoists, chains, cables, emergency power supplies, limit switches, etc.

Lubrication of mechanical equipment such as cables, trunnions, etc.

Residual freeboard on the dam.

Flows, splashing, overtopping of walls, etc., if water is spilling.

Outlets

Sluice outlet operators.

DAM INSPECTION REPORT

Dam: _____ State No. _____

Storage and Discharge Data: _____

Leakage: _____

Spillway: _____

Log Boom: _____

Outlet Works: _____

Staff Gage (and Recorder): _____

Rodent Control: _____

Vegetation Control: _____

General Information: _____

Work Required: _____

F. Event Log Sheets

Bulletin No. 55
Supplement 1
Page 4 of 4
Issued: 04/01/75
Revised: 03/01/99

1. OPERATION AND MAINTENANCE

General (continued)

Housekeeping to include debris inside buildings and other structures.

Security for maintenance of fences, gates, locks.

Roads and trails: They should provide for adequate yet safe passage.

Vandalism requiring repair or security modifications.

Other hydraulic features.

Notification and Reports

Note any signs of instability during the inspection, such as undue settlement, cracks, substantially increased leakage, etc., and inform Hydro Generation Department supervision immediately.

Complete a Dam Inspection Report, Form 74 - 555, and maintain in Watershed files for each dam inspection. Transmit Summaries of "Work Required" to the Hydro Generation License and Compliance Department, General Office, within one month after completing all of the annual dam inspections. Follow with a report upon completion of the required work.

**Placer County Water Agency – Emergency Action Plan
Event Sequence and Observation Log**

Name: _____ Weather: _____

Date: _____ Dam involved: _____ County: **Placer****a. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**b. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**c. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**d. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

**Placer County Water Agency – Emergency Action Plan
Event Sequence and Observation Log**

Name: _____ Weather: _____

Date: _____ Dam involved: _____ County: Placer

a. Observation / Conversation With / Call From / Call To (circle one)

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**b. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**c. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**d. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

**Placer County Water Agency – Emergency Action Plan
Event Sequence and Observation Log**

Name: _____ Weather: _____

Date: _____ Dam involved: _____ County: Placer

a. Observation / Conversation With / Call From / Call To (circle one)

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**b. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**c. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**d. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

**Placer County Water Agency – Emergency Action Plan
Event Sequence and Observation Log**

Name: _____ Weather: _____

Date: _____ Dam involved: _____ County: Placer

a. Observation / Conversation With / Call From / Call To (circle one)

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**b. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**c. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____
_____**d. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

Record of Dam Observations

Ref: PG&E PowerGen Bulletin #55

Recorder: _____ Dam(s) and Number(s): _____

Date and Time: _____ County: Placer

Observer: _____ Location: _____

Phone or Radio: _____ Weather: _____

Description and Time of Event: _____

_____**Critical Inspection Items (check those that apply, and describe below):**

- Settlement, Cracking, or Deformation of Dam Crest, Pavement, Guard Rails
- Slumping or Erosion of Dam Faces (upstream and downstream)
- Seepage Locations on Dam, and Estimated Flows / Flow Depths
- Discoloration or Turbidity in Seepage Flows
- Operable Condition of Gates, Spillway, and Outlet Valves
- Current Positions of Valves or Gates
- Snow or Ground Conditions
- Piezometer Levels
- Vandalism
- Other Notable Changes to Dam

Description of Items Checked Above: _____

Reservoir Elevation and Storage: _____

Reservoir Inflow: _____ Outflow: _____

Action already taken: _____
_____Immediate Actions recommended (EAP activation, gate\valve\PH operations, etc.):

_____Resources needed (dam experts, emer.responders, equipment, const. firms, project employees):

Suggested route and Access to Dam: _____

Record of Dam Observations

Ref: PG&E PowerGen Bulletin #55

Recorder: _____ Dam(s) and Number(s): _____

Date and Time: _____ County: Placer

Observer: _____ Location: _____

Phone or Radio: _____ Weather: _____

Description and Time of Event: _____

_____**Critical Inspection Items (check those that apply, and describe below):**

- Settlement, Cracking, or Deformation of Dam Crest, Pavement, Guard Rails
- Slumping or Erosion of Dam Faces (upstream and downstream)
- Seepage Locations on Dam, and Estimated Flows / Flow Depths
- Discoloration or Turbidity in Seepage Flows
- Operable Condition of Gates, Spillway, and Outlet Valves
- Current Positions of Valves or Gates
- Snow or Ground Conditions
- Piezometer Levels
- Vandalism
- Other Notable Changes to Dam

Description of Items Checked Above: _____

Reservoir Elevation and Storage: _____

Reservoir Inflow: _____ Outflow: _____

Action already taken: _____
_____Immediate Actions recommended (EAP activation, gate\valve\PH operations, etc.):

_____Resources needed (dam experts, emer.responders, equipment, const. firms, project employees):

Suggested route and Access to Dam: _____

**Placer County Water Agency – Emergency Action Plan
Event Sequence and Observation Log**

Name: _____ Weather: _____

Date: _____ Dam involved: _____ County: Placer

a. Observation / Conversation With / Call From / Call To (circle one)

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**b. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**c. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

_____**d. Observation / Conversation With / Call From / Call To (circle one)**

Time: _____ Name: _____ Agency: _____

Their Location: _____ Phone / Radio / FAX: _____

Conversation, description, action, directions, etc: _____

G. Approval of the EAP

FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

Division of Dam Safety and Inspections - San Francisco Regional Office

901 Market Street, Suite 350, San Francisco, California 94103

(415) 369-3300 Office

(415) 369-3322 Facsimile

RECEIVED

MAY 6 - 2004

**PLACER COUNTY WATER AGENCY
POWER SYSTEM**

May 4, 2004

In reply refer to:

Project No. 2079-CA

NATDAM CA 00856

Mr. Stephen J. Jones
Power System Manager
Placer County Water Agency
P. O. Box 667
Foresthill, CA 95631

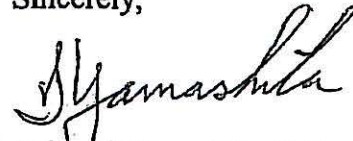
Re: Acceptance of 2004 Emergency Action Plan (EAP) Table Top and Functional Report

Dear Mr. Jones:

We received your letter dated April 24, 2004 that transmitted a report and critique of the EAP Table Top and Functional Exercises conducted on February 11 and 25, 2004, respectively, for the Middle Fork American River Project, FERC Project No. 2079.

We accept the EAP report and critique and again, we commend your staff for a well organized EAP Table Top and Functional Exercise. We appreciate your continued cooperation in the Commission's EAP program. We also accept your schedule of republishing the complete revised EAP update by December, 2004. If you have any questions, please contact Mr. John Onderdonk at (415) 369-3339 or at john.onderdonk@ferc.gov.

Sincerely,



Takeshi Yamashita, P.E.
Regional Engineer

RECEIVED

JUN 06 2005

FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

Division of Dam Safety and Inspections - San Francisco Regional Office

901 Market Street, Suite 350, San Francisco, California 94103

(415) 369-3300 Office

(415) 369-3322 Facsimile

**PLACER COUNTY WATER AGENCY
POWER SYSTEM**

June 2, 2005

In reply refer to:

Project No. 2079-CA

NATDAM Nos. 00856,

00857, 00859

Stephen J. Jones, Power System Manager
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631

Re: Revision of 5-year Emergency Action Plan (EAP) Submittal

Dear Mr. Jones:

We have received your letter dated May 10, 2005 that transmitted the revised five-year reprint of the EAP for your Middle Fork American River Project, FERC Project No. 2079. Your revisions were in response to comments in our March 8, 2005 letter.

Two copies of the submittals have been forwarded to our Washington, D.C. office for filing. A copy of the EAP reprint has been retained in the SFRO. We find that the EAP reprint has been prepared consistent with Chapter 6 of the FERC Engineering Guidelines, and is acceptable. We appreciate your cooperation in the review and updating of the EAP.

Your continued cooperation in this aspect of the Commission's program is appreciated. If you have any questions, please contact Mr. John Onderdonk at (415) 369-3339.

Sincerely,



Takeshi Yamashita, P.E.
Regional Engineer

Enclosure (Confirmation Receipt)

PLACER COUNTY WATER AGENCY
MIDDLE FORK AMERICAN RIVER PROJECT

FIGURE 3

COORDINATES OF KEY PROJECT FACILITIES AND OTHER AREAS

Location	Latitude	Longitude
French Meadows Powerhouse	N39° 04.67'	W120° 24.39'
Hell Hole Dam	N39° 03.48'	W120° 24.55'
Hell Hole Dormitory	N39° 03.51'	W120° 24.91'
French Meadows Dam	N39° 06.73'	W120° 28.24'
Ellicott Bridge (Wentworth Spgs)	N38° 57.44'	W120° 29.16'
Middle Fork Powerhouse	N39° 01.47'	W120° 35.85'
Interbay Dam	N39° 01.56'	W120° 36.18'
Ralston Powerhouse	N39° 00.04'	W120° 43.50'
Ralston Afterbay Dam	N39° 00.20'	W120° 44.78'
Oxbow Powerhouse	N39° 00.34'	W120° 44.81'
Horseshoe Bar Mining Camp	N39° 00.43'	W120° 45.79'
PCWA Foresthill Headquarters	N39° 01.30'	W120° 49.00'
Fords Bar on Middle Fork	N38° 57.43'	W120° 51.39'
Oregon Bar on Middle Fork	N38° 57.73'	W120° 55.88'
Highway 49 at Middle Fork	N38° 54.93'	W121° 02.44'

(Sorted by Longitude - readings taken from DeLorme Street Atlas, 1998)

IV. Emergency Detection, Evaluation, and Classification

A.	Emergency Detection	7
B.	Surveillance at Remotely Controlled or Unattended Dams	8
C.	Emergency Classifications.....	9

IV. Emergency Detection, Evaluation, and Classification

Each EAP provided to all recipients contains all flowcharts, text, drawings, and information listed in the Table of Contents, with the exception of the Dambreak Analysis by Sierra Hydrotech (Appendix 8), which is available upon request to PCWA. Inundation maps in Division VII are also available in electronic format, if needed, upon request to PCWA. Since this EAP may contain sensitive information, each recipient shall ensure that the information contained in this EAP is not distributed.

A. Emergency Detection

Detection of developing problems at PCWA's dams is addressed using various surveillance and inspection measures. Each dam covered in this EAP is regularly inspected by trained operations personnel, including visual inspection of the dams for settlement, plugging of drains, sloughing, cracking, leakage, turbidity, vegetation, rodent activity, etc. Operations personnel are also trained to note any changed conditions that may indicate problems are developing. Maintenance personnel perform maintenance on the dams as needed and during regularly scheduled maintenance. The dams are inspected daily, except for French Meadows Dam (L.L. Anderson Dam), which is inspected at least weekly. Leakage weirs at French Meadows and Hell Holes dams are read and recorded weekly, except when inaccessible, and analyzed for any adverse trends.

Each dam is surveyed for settlement at designated locations every other year. The survey data is analyzed and compared to previous surveys to determine if settlement is within expected limits. French Meadows Dam and Ralston Afterbay Dam also have water level monitoring wells (piezometers). The piezometers at French Meadows Dam are checked and recorded on a monthly basis. The piezometers at Ralston Afterbay Dam are electronically recorded on a daily basis, and analyzed on a monthly basis.

Engineers from the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources Division of Safety of Dams (DSOD) make annual inspections with PCWA personnel at each dam, and review monitoring data. On a 5-year basis, PCWA's dam safety consultant, who has been approved by FERC, makes a through inspection of the dams, analyzes surveillance and historical data, re-analyzes the dam for stability and maximum flood conditions as regulatory requirements change or other issues surface, and issues a full report regarding the stability and condition of the dam.

PCWA maintains and operates several river gaging stations, with

readouts and alarms that are accessible to PCWA and PG&E communications systems. PCWA, in cooperation with the USGS, also operates and maintains the R11 gaging station on the Middle Fork of the American River about 2 miles downstream of Ralston Afterbay Dam. This gaging station has real time river flow information that can be accessed through the internet at <http://cdec.water.ca.gov/river/americanStages.html>. The gaging station readings can be accessed by scrolling down to "MIDDLE FORK AMERICAN R NR OXBOW PH". Be sure to refresh the page to get current information.

B. Surveillance at Remotely Controlled or Unattended Dams

1. French Meadows Dam (L. L. Anderson Dam)

The water level of French Meadows Reservoir is monitored continuously and the elevation reading is transmitted by radio to both PCWA's Ralston Powerhouse and PG&E's Drum Powerhouse every hour. If the rate of change of the reservoir elevation exceeds 0.3 feet in 40 minutes, a visual alarm is activated at Ralston and Drum Powerhouse. Ralston Powerhouse is manned during the hours of 0830 to 1600 Monday through Friday, and for about 4 hours during the day on Saturday and Sunday. Drum Powerhouse is manned 24 hours a day continuously, and would be able to monitor any abnormally rapid change in water surface elevations during the hours that the Ralston plant is unmanned. In addition, the water level at the gaging station (R-3), located 0.6 mile downstream from French Meadows Dam, is continuously monitored. An alarm is sent to the Drum and Ralston powerhouses if the river stage rises above the preset level of 30 cubic feet per second.

2. Hell Hole Dam

The Hell Hole Reservoir water level is monitored by a remote indicating system and the elevation reading of the reservoir is transmitted hourly to the Ralston and Drum powerhouses, or can be selected at any time by the powerhouse operator. Drum Powerhouse is manned on a continuous 24-hour, seven days per week basis, and an operator takes periodic readings of the Hell Hole Reservoir water level. In addition, the water stage at the gaging station (R-6), located 600 feet downstream from Hell Hole Dam, is continuously monitored. An alarm is sent to the Drum and Ralston plants if the stage should rise above the preset level of 50 cubic feet per second.

3. Ralston Afterbay Dam (Oxbow Dam)

The Ralston Afterbay (Oxbow) Reservoir water level is monitored continuously and the elevation can be read at any time by both Ralston and Drum powerhouses. Drum Powerhouse is manned on a 24-hour basis, and therefore provides around the clock surveillance of this facility. In addition to this surveillance, the Oxbow Powerhouse operates on a remote float control with a low water level alarm that would alert operators at both Ralston and Drum powerhouses. The low water level alarm is set at elevation 1174.3, about 5 feet below the normal maximum operating elevation. In addition, the water stage at the gaging station, located 1.6 miles downstream from Ralston Afterbay Dam, is continuously monitored. New equipment has been installed, and is being programmed that will send an alarm to the Drum and Ralston powerhouses if the river stage rises above the preset level, or above a rate of 3 feet per hour.

4. Project Data Communication

The remote sensing and transmitting equipment for reservoir water levels and river flows is checked regularly by operations personnel. Any failure of the equipment to transmit the programmed data is immediately investigated and repaired. Remote telemetry units transmit data via the project microwave and radio systems, and overland communication lines. Remote telemetry units are primarily powered using solar panels and storage batteries. The project microwave and radio communication system is powered by permanent commercial power. Backup generators for the microwave and radio communication system are provided at French Meadows, Ralston, and Oxbow powerhouses, and at PCWA's Foresthill headquarters and the Foresthill microwave tower building. A new backup generator has been installed at the Middle Fork (Lowell J. Stephenson) Powerhouse, which will provide emergency power to the Middle Fork radio tower building via the permanent buried cable from Middle Fork Powerhouse. An additional generator is planned to be installed at the microwave tower building.

Further discussion of the project communication system is covered in Division VI, Section F.

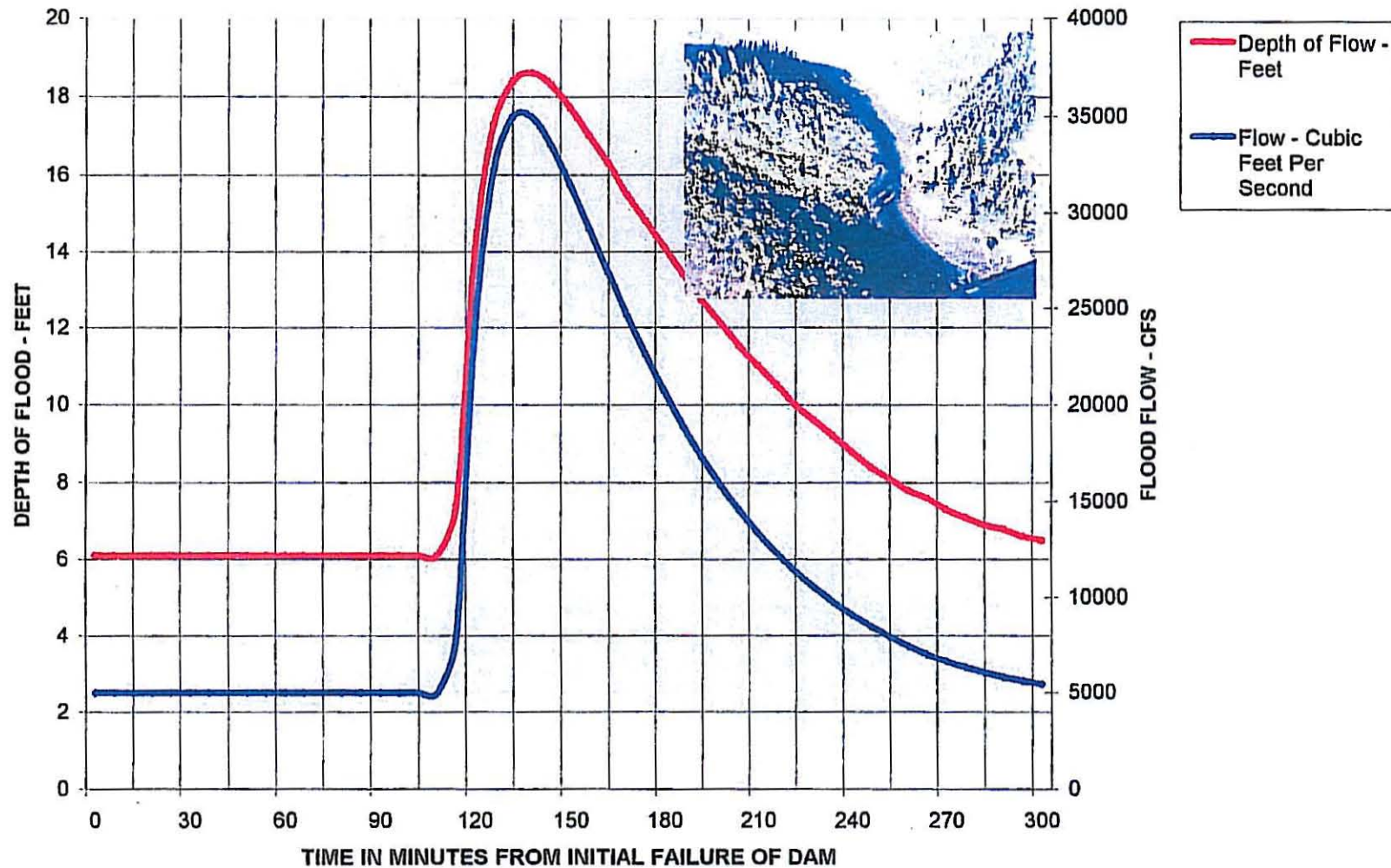
C. Emergency Classifications

1. Project operators are responsible for initial coordination and

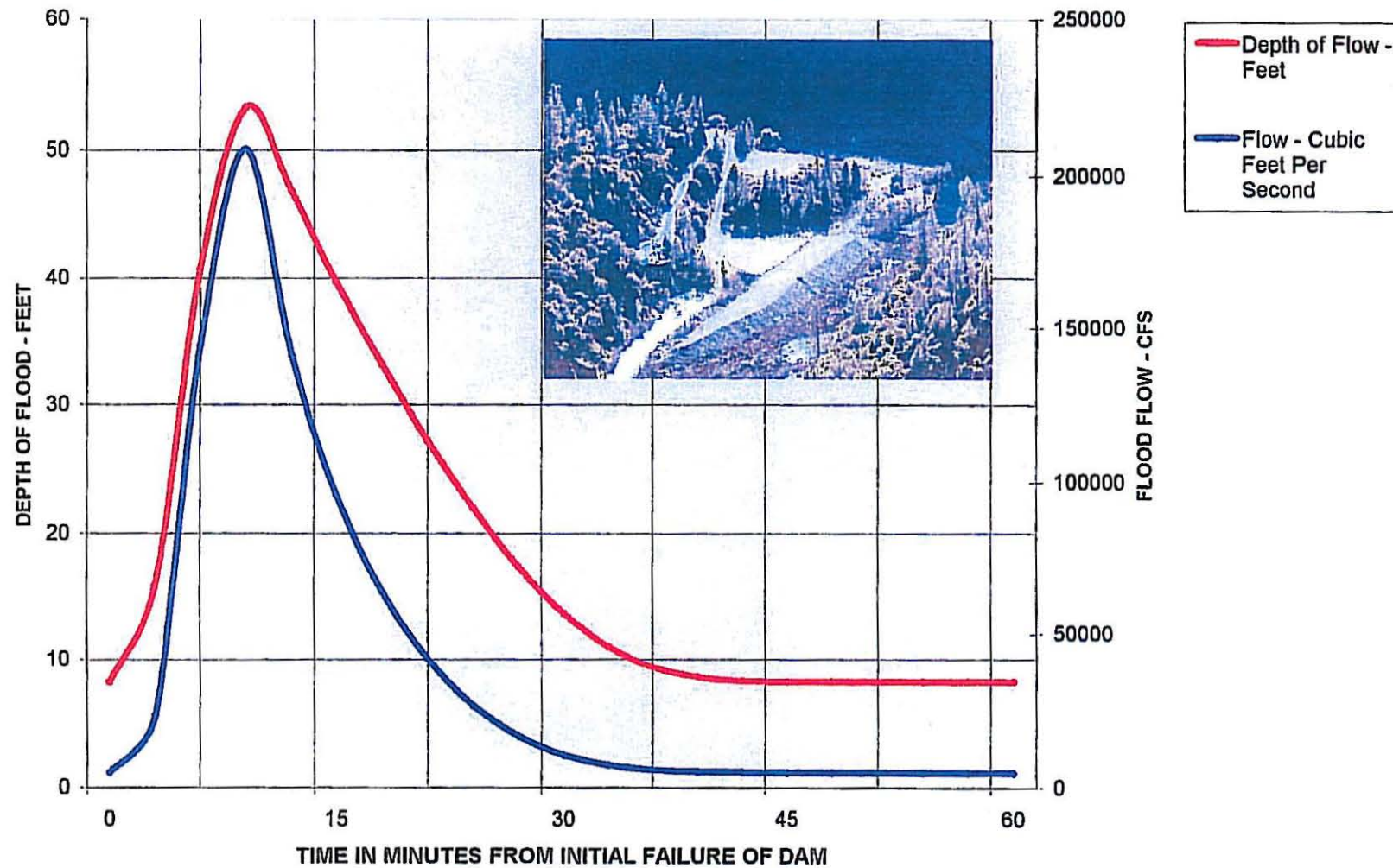
notification in the event of a dam failure or potentially hazardous condition. No action which may unduly alarm local residents or agencies shall be taken until the conditions have been completely verified, indicating an emergency which may endanger life and property.

2. Emergencies are classified according to their severity and urgency. There are three emergency classifications used in the EAP. Two of the classifications are related to failure of the dam, and the third being a non-failure emergency condition:
 - a. **Condition A** - Failure is imminent or has occurred, e.g. the dam is rapidly eroding and flows are increasing, and the determination is made that the condition is not reversible.
 - b. **Condition B** - Potential failure situation is developing, e.g. a portion of the dam face has slumped, and it is not clear whether remedial measures will stop further damage.
 - c. **Condition C** - Non-failure emergency condition, e.g. the reservoir is full in June, and emergency releases from the spill gates have to be made due to an unseasonable extreme thunderstorm.
3. At least two confirming sources must be present to initiate the EAP, such as:
 - a. Increased releases below the dam with decreased reservoir water surface elevation, monitored through electronic surveillance, and visual confirmation if possible
 - b. Increased releases below the dam, monitored through electronic surveillance, and visual confirmation
 - c. For non-failure emergencies, sufficient surveillance and forecast data, and visual confirmation
4. When possible, and if time allows, consultation should be made with the Sheriff's Office, the Office of Emergency Services, and qualified experts, prior to declaring Condition A or Condition B, particularly when the decision is unclear.
5. Reference and training materials for dam inspections includes PG&E Hydro Bulletin #55, Dam Inspections, a copy of which is included in Division VIII, Appendix D, Documentation.

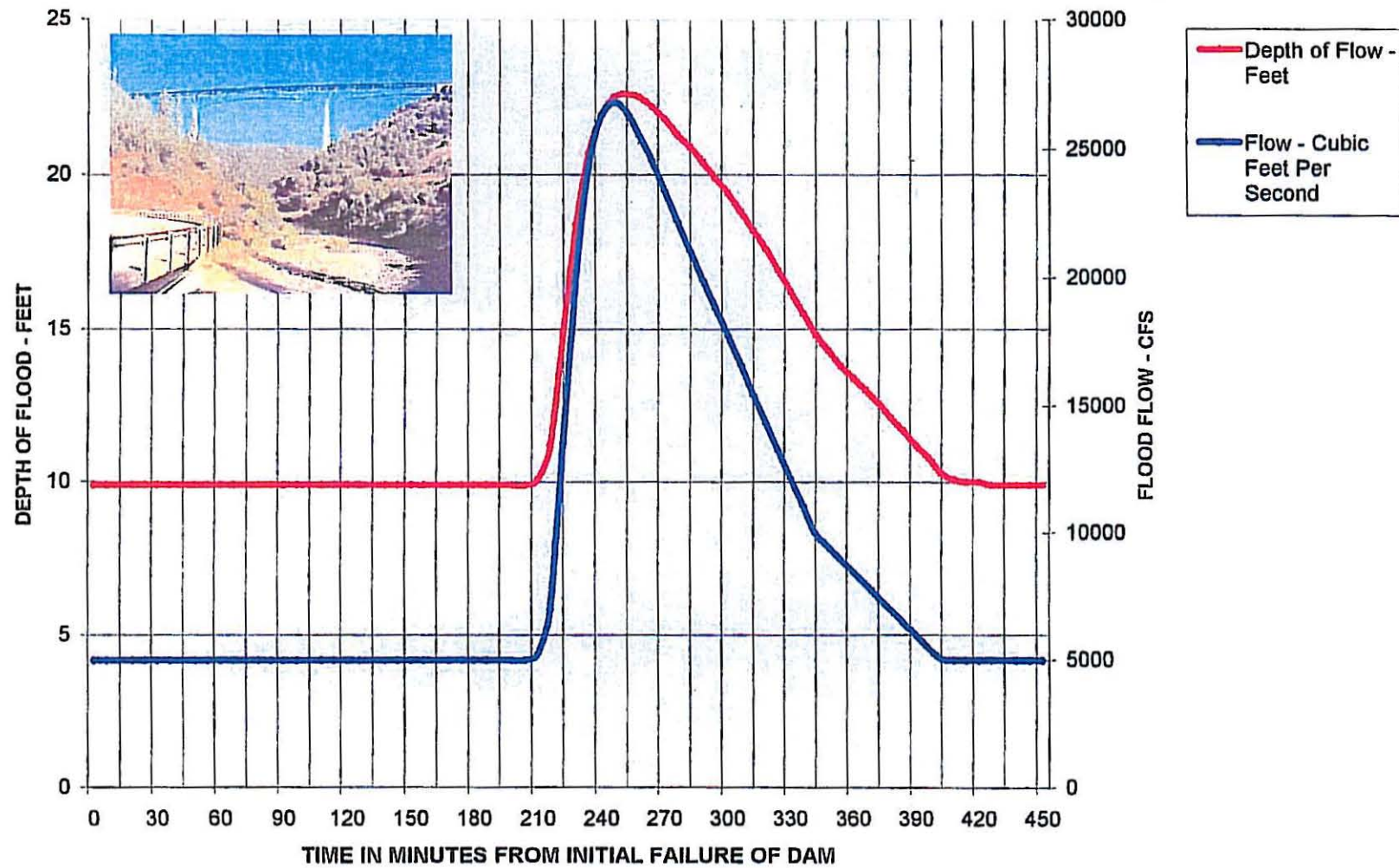
RALSTON AFTERBAY FAILURE FAIR WEATHER HYDROGRAPH
BELOW RALSTON AFTERBAY DAM 14.96 MILES - RAF111 - RUCK-A-CHUCKY



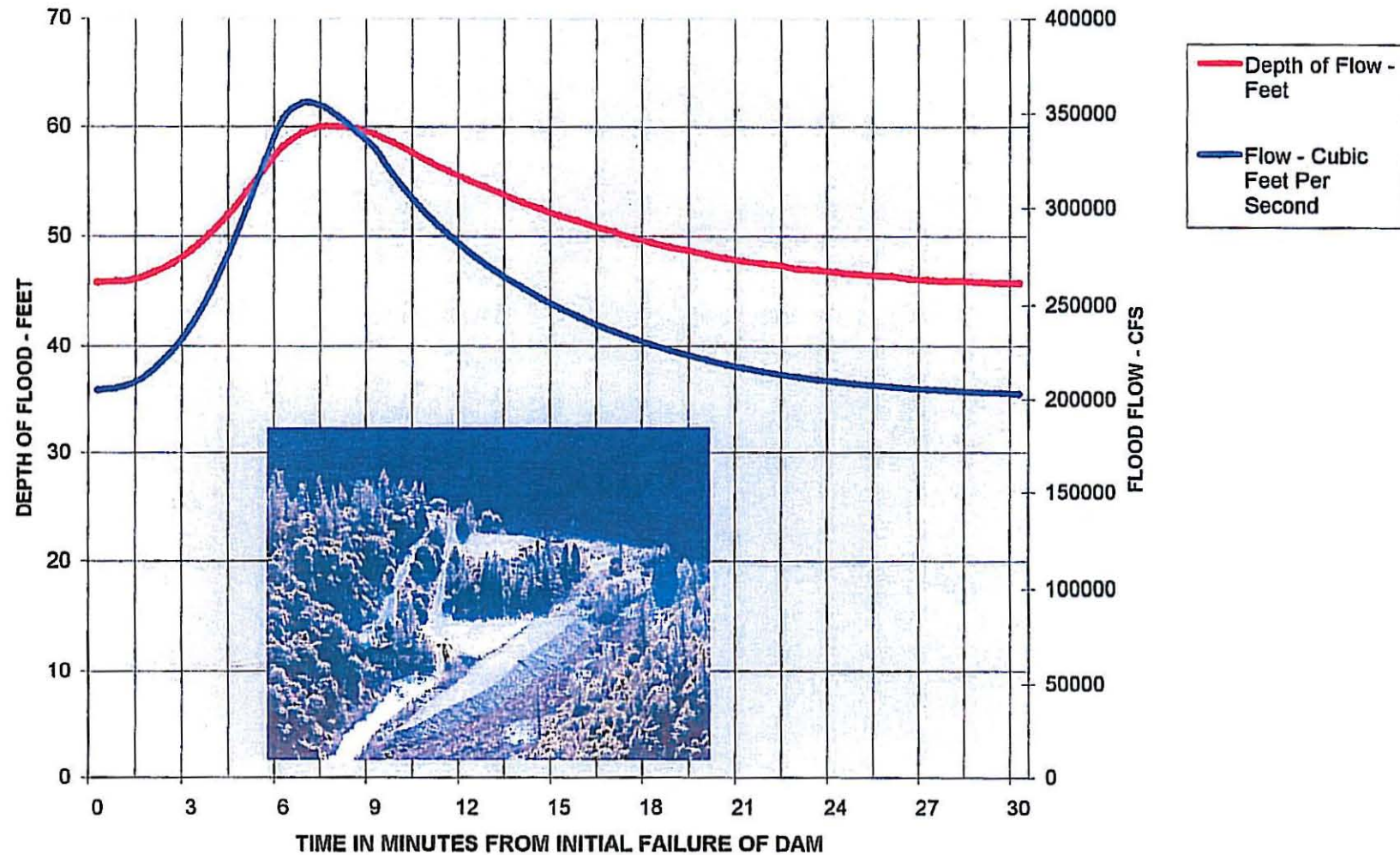
RALSTON AFTERBAY FAILURE FAIR WEATHER HYDROGRAPH
BELOW RALSTON AFTERBAY DAM .02 MILES - RAF9 - D/S OF RALSTON AFTERBAY DAM



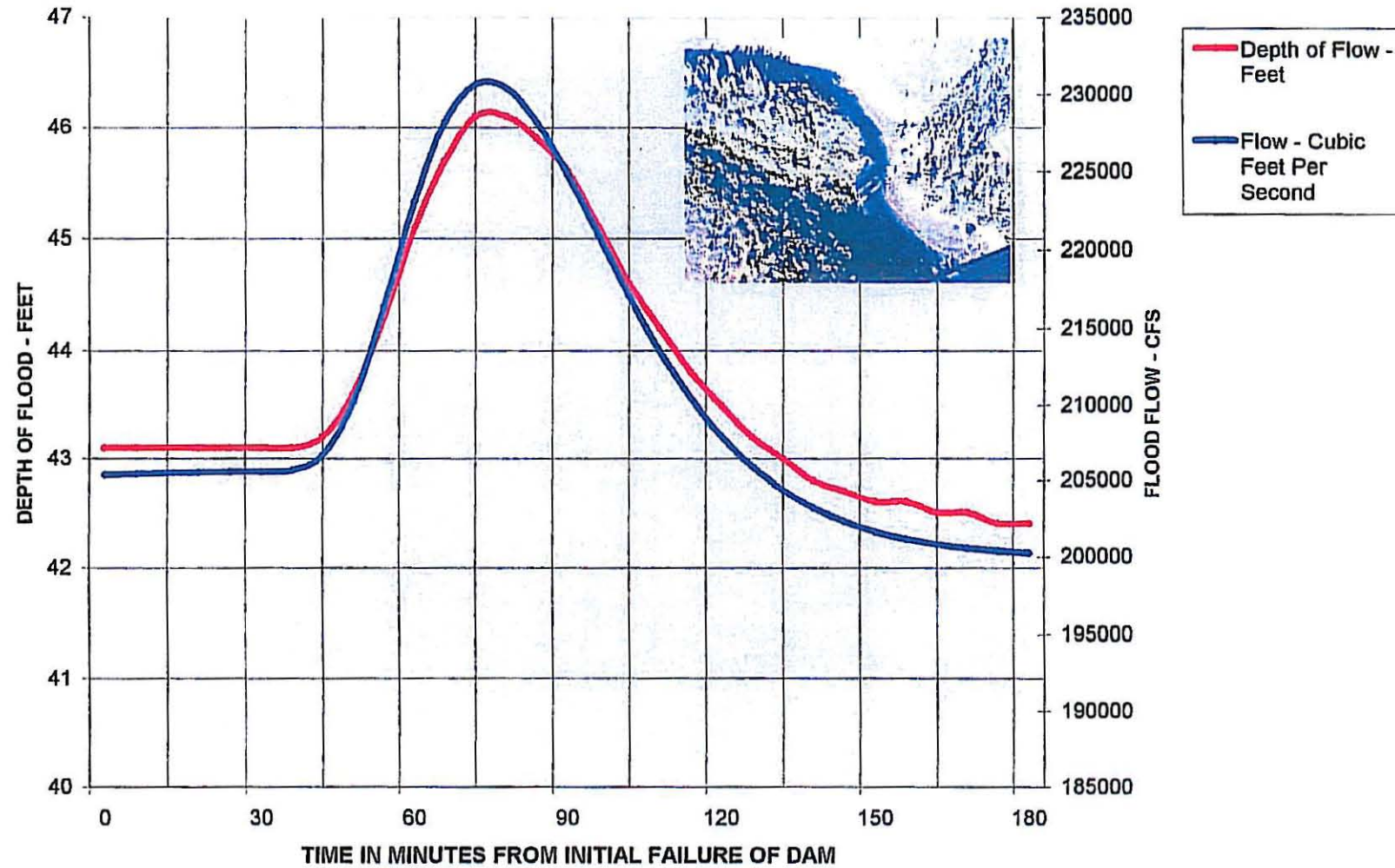
**RALSTON AFTERBAY FAILURE FAIR WEATHER HYDROGRAPH
BELOW RALSTON AFTERBAY DAM 25.25 MILES - RAFC1 - CONFLUENCE**



RALSTON AFTERBAY FAILURE PMF HYDROGRAPH
BELOW RALSTON AFTERBAY DAM .02 MILES - RA8 - D/S OF RALSTON AFTERBAY DAM



RALSTON AFTERBAY FAILURE PMF HYDROGRAPH
BELOW RALSTON AFTERBAY DAM 14.96 MILES - RA112 - RUCK-A-CHUCKY



**RALSTON AFTERBAY FAILURE PMF HYDROGRAPH
BELOW RALSTON AFTERBAY DAM 25.25 MILES - RAC1 - CONFLUENCE**

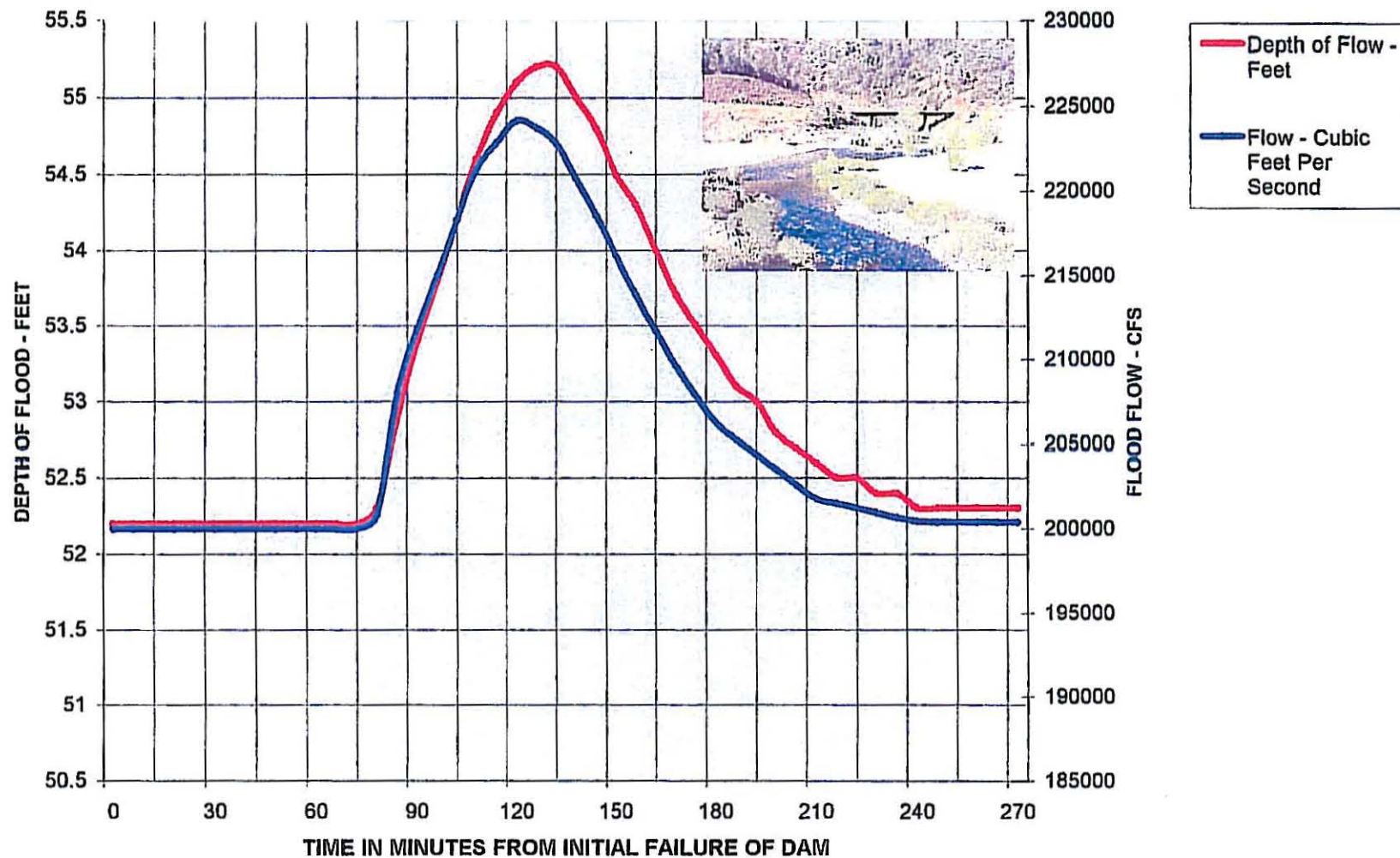


Table RA 1

RALSTON DAM FAILURE
PMF CONDITIONS

LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ^{1/} (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
Ralston Afterbay Dam	0.00	355,460	—	—	16.02	—	—	0.00
Immed. below Dam	0.02	355,460	1,171.22	68.2	18.37	14.2	0.130	0.00
Junction Bar	0.74	325,226	1,124.80	53.8	15.36	8.9	0.190	0.04
Cache Rock	6.30	249,406	955.68	50.7	14.90	4.8	0.67	0.28
	9.58	240,321	895.68	55.7	12.50	4.1	0.92	0.45
Fords Bar	11.60	234,944	854.00	54.0	12.87	3.6	1.080	0.60
Ruck-A-Chucky	14.96	230,822	812.26	52.3	17.62	3.0	1.27	0.75
	19.70	228,652	700.13	41.1	12.11	2.0	1.60	0.85
REACH TWO								
Upstream fm North Fork	25.25	224,295	606.10	65.1	10.74	3.0	2.092	1.25
Hwy 49 Bridge	25.77	223,784	600.00	59.8	10.91	2.9	2.144	1.30
	27.88	222,470	565.00	55.0	12.01	2.9	2.300	1.35
^{2/} Nr Auburn Colfer Dam	28.75	222,120	550.50	49.5	14.06	2.8	2.352	1.40
^{2/} Head Folsom Pool	29.95	221,785	522.99	57.0	13.39	2.8	2.456	1.50
Folsom Pool	31.93	221,470	479.28	55.3	14.32	1.6	2.508	1.60
Folsom Pool	35.34	—	—	—	—	0.25	—	—
Folsom Pool	42.15	—	—	—	—	0.25	—	—

^{1/} Rise in water surface attributable to failure of Ralston Afterbay Dam only. Does not include rise attributable to PMF inflow to Ralston.

^{2/} Auburn damsite between mi 28.75 and mi 29.95.

VII. Inundation (Flood) Maps

All inundation maps were prepared in an 11" x 17" format from USGS 7 1/2 minute quadrangle sheets with a scale of 1:24,000. The last sheet for each dam failure has been reduced so that it can include most of Folsom Reservoir on a single sheet.

The index sheet is at a scale of 1:250,000 so that the entire river channel below each dam failure to Folsom Reservoir is on a single 11" x 17" sheet, showing wave height, rise and travel times for relevant locations along the path of the flood wave. The purpose of the index sheets is to permit rapid and concise overview of the potential flood wave as well as to index the more detailed inundation maps.

FERC requires that the inundation maps include flows resulting from a dam failure during fair weather conditions, and flows resulting from a dam failure during extreme flood conditions, which is shown on the drawings as a Probable Maximum Flood (PMF). FERC also refers to the extreme flood conditions as the Inflow Design Flood (IDF).

On the Hell Hole and French Meadows inundation maps, primarily due to the size and depth of the reservoirs, the difference between the dam failure floods under both fair weather and extreme flood conditions is insignificant, so the flood maps only show a single flood condition (extreme flood). However, since Ralston Afterbay is shallow and much smaller, the difference between the fair weather and extreme flood conditions is significant, so the inundation maps show both conditions.

Fortunately, the magnitude of adverse impacts to people is minimized by the fact that the canyons below French Meadows, Hell Hole, and Ralston Afterbay Dams are deep and rugged with relatively few trails and roads into them. Locations within the inundated boundaries along the rivers where people and/or facilities are located, are described as follows along with the appropriate response that should occur if a dam failure is imminent or has occurred, or if a potentially hazardous situation is developing.

The following narrative describes where people may be located along the rivers during the months of good weather. During winter months there is usually much less activity along the rivers.

A. NARRATIVE EXPLANATION OF MAPS FROM HELL HOLE DAM TO MIDDLE FORK AND RUBICON RIVERS CONFLUENCE

There are 31.34 miles of the Rubicon River between Hell Hole Dam and Ralston Afterbay Dam. Most of the river passes through El Dorado

National Forest land. There are some undeveloped, private parcels between the two dams that the river passes through. Important locations and the appropriate response along this stretch of river are as follows:

1. Sheet 1 of 11 - Hell Hole Dam Failure Maps

There is gated road access directly downstream of Hell Hole Dam. Hiking trails such as the Hunters Trail and Parsley Bar Trail enter the flood plain at Parsley Bar on the Rubicon River, approximately one mile downstream from Hell Hole Dam. An attempt to warn any hikers or campers on or along the trails in this area should be made by helicopter.

2. Sheet 2 of 11 - Hell Hole Dam Failure Maps

Hiking trails, such as the Hunters and Rubicon Trails, continue for approximately four and a half miles, moving downstream within the flood plain along the Rubicon River to the Ellicott Bridge (sometimes referred to as the Hell Hole Road Bridge). The old Ellicott Foot Bridge is no longer in existence. The Ellicott Bridge is located on the Wentworth Springs Road which originates in Georgetown. There may be as many as 30 vehicles parked in the area of the Ellicott Bridge on weekends during the Summer. A rapid response by helicopter or by USFS personnel to this area, to warn and urge the evacuation of people parked on either side of this bridge should be made. Roadblocks should be established one-quarter mile on either side of the bridge.

3. Sheet 3 of 11 - Hell Hole Dam Failure Maps

The Lawyer Point trail accesses the Rubicon just over a mile downstream of the Ellicott Bridge. An attempt to warn any hikers or campers on or along the trails in this area should be made by helicopter, if time allows

4. Sheet 5 of 11 - Hell Hole Dam Failure Maps

Miners and hikers use the Nevada Point Trail and Pennsylvania Point Trails. In addition, people may be camped in the area of the Pennsylvania Point Bridge site, and in areas along the Rubicon just upstream of Ralston Powerhouse. Notification of the public in this area should be made by helicopter.

Notification by telephone or radio should be made to PCWA employees at Ralston Powerhouse, so that if the situation requires,

they may leave the area and move outside of the inundation boundaries. PCWA employees should warn the public along the river and at Ralston Afterbay, including the day use and boat launch areas, on their way to higher ground.

B. NARRATIVE EXPLANATION OF MAPS FROM FRENCH MEADOWS (L.L. ANDERSON) DAM TO MIDDLE FORK AND RUBICON RIVERS CONFLUENCE

The Middle Fork American River flows through alternating sections owned by the Forest Service, and parcels owned by private parties for a distance of 21 miles from French Meadows Dam to the confluence of the Middle Fork American and the Rubicon rivers. Areas where people and/or facilities are located are as follows:

1. Sheet 1 of 10 - French Meadows Dam Failure Maps

There is fishing access directly downstream of French Meadows Dam. There is also a gated access road to a cabin site that was destroyed by fire on private property about ½ mile downstream of the dam, and a dirt access road to the river near the Pay Day Mine. Due to only intermittent use of these areas, and the proximity to the dam, notification by helicopter will only be made if sufficient time exists. Since the Star Fire swept through this area in 2001, logging and forest restoration activities may be ongoing.

2. Sheet 2 of 10 - French Meadows Dam Failure Maps

Interbay Dam Access Road provides access to the river from Mosquito Ridge Road. There is no vehicle access from the Interbay area to the Blacksmith Flat Road. Notification by telephone or radio should be made to PCWA employees at the Interbay Dam and Middle Fork Powerhouse (Lowell J. Stephenson Powerhouse), so that they can be kept informed of a potentially hazardous situation, or directed to evacuate the area if dam failure is imminent. During the summertime, one or two cars may be parked outside Middle Fork Powerhouse, or in the area of Interbay Dam. Warning and directions to evacuate should be given to the public by PCWA employees in the area, or by helicopter, depending upon the seriousness of the developing situation.

C. NARRATIVE EXPLANATION OF MAPS FROM MIDDLE FORK AND RUBICON RIVERS CONFLUENCE TO FOLSOM DAM

There are approximately 48 miles of river from the confluence of the Middle Fork and Rubicon rivers to Folsom Dam. Flood Inundation Maps for French Meadows, Hell Hole, and Ralston Afterbay dams all describe this area along the river, where people and /or facilities may be located. However, only the Flood Inundation Maps for Hell Hole Dam will be used in the following discussion.

The confluence of the Middle Fork and Rubicon rivers occurs at Ralston Afterbay (Oxbow) Reservoir. The area surrounding Ralston Afterbay Reservoir would be impacted by flooding from French Meadows or Hell Hole Dams. Areas downstream of Ralston Afterbay Dam would be impacted by flooding at French Meadows, Hell Hole, or Ralston Afterbay dams.

1. **Sheet 5 of 11 - Hell Hole Dam Failure Maps**
Sheet 4 of 10 - French Meadows Dam Failure Maps
Sheet 1 of 7 - Ralston Afterbay Dam Failure Maps

The Ralston Day Use Picnic Area is located at the confluence of the Middle Fork and Rubicon rivers. PCWA employees will contact and warn people located at this picnic ground, if time permits. If the time constraints are too short because of the urgency of a developing situation, warning should be given by helicopter.

Members of the public park near the boat launching ramp at the confluence of the Middle Fork and Rubicon rivers. Boaters should be notified and warned by helicopter, and/or by PCWA employee, to leave the reservoir and the area.

PCWA employees periodically visit Ralston Afterbay Dam. Upon notification that a potentially hazardous situation is developing, or a dam failure is imminent, an accounting will be made of all PCWA employees. If any PCWA employees are at Ralston Afterbay Dam, they will be contacted by telephone, radio, or by driving to the dam, if necessary. If time does not permit, they should be notified by helicopter. Any PCWA employees at Oxbow Powerhouse will also be notified and appraised of the situation. PCWA employees shall notify the public in the vicinity.

Throughout the Summer, rafters put in at the Oxbow Powerhouse tailrace to raft down to the Oregon Bar / Drivers Flat area on sheet 7 of 11, or beyond. These people will be notified by PCWA employees, or by helicopter, depending on time constraints. Between late spring and early fall, as many as several hundred

rafters may be at or around the launch site during the morning. A large sediment storage pile was placed near the launch site in 2002, portions of which serve as a rafters parking area. Some fishing and mining also occurs in this area. The Middle Fork of the American River from Ralston Afterbay Dam to Folsom Lake is in the Auburn State Recreation Area. Rafters along this section of river should be notified by helicopter.

Miners may be present from time to time at American Bar or Junction Bar. Miners should be notified and warned by helicopter.

**2. Sheet 6 of 11 - Hell Hole Dam Failure Maps
Sheet 5 of 10 - French Meadows Dam Failure Maps
Sheet 2 of 7 - Ralston Afterbay Dam Failure Maps**

Mining occurs on Horseshoe bar on both sides of the tunnel chute. The area encompassing American and Horseshoe Bars is on private land that is leased by the Horseshoe Bar Mining Association. . There are usually numerous trailers parked above the river in the area of these two bars. Most of the residents are seasonal, but some live year-round. In addition, an old house is located above the tunnel chute that is used from time to time, and a caretaker is usually present who lives in a trailer along the road east of the house above the tunnel chute. PCWA operates a gaging station on the Middle Fork American River between American Bar and Horseshoe Bar. If the caretaker can't be reached by phone, PCWA employees will drive to the area to notify him, and anyone who might be using the house above the tunnel chute, or in the area, to evacuate. If time does not permit, notification should be made by helicopter or by the Placer County Sheriff. Helicopter notification should also be made to miners in the Volcano Canyon Creek and Cache Rock areas, and rafters picnicking or camping in the Dardanelles Creek area near a mini-hydro powerplant.

**3. Sheet 7 of 11 - Hell Hole Dam Failure Maps
Sheet 6 of 10 - French Meadows Dam Failure Maps
Sheet 3 of 7 - Ralston Afterbay Dam Failure Maps**

Miners may be located in the Fords Bar, Ruck-A-Chucky, and Oregon Bar areas, and should be notified by helicopter. Fords Bar, Otter Creek, and Canyon Creek are very popular rafting day use and overnight camping areas, and should also be notified by helicopter, or by State Parks and Recreation personnel. As many as a hundred or more people may camp there overnight during the summer season. Nugget Road, which is a steep, gated, dirt road,

may provide access between Todd Valley and Ford's Bar in an emergency. The Placer County Sheriff's Office or State Parks and Recreation personnel may decide to use OHVs on the road and trail between Ford's Bar and Oregon Bar to warn the public.

Drivers Flat Road provides road access from Foresthill Road to the river at Oregon Bar, and a small campground near the Francisco Flat parking area. This road is driveable to about Canyon Creek, but access is restricted by a locked gate near Paradise Canyon. Hikers and bikers also use the trail between Paradise Canyon and Ford's Bar. During rafting season, over a hundred people may be present in the Oregon Bar area, which is also a popular raft take-out area. Members of the public in this area should be notified by helicopter, or by Parks and Recreation or Placer County Sheriff's personnel, if available.

Cherokee Bar on the east side of the river is a popular camping and mining area. Past the downstream end of Cherokee Bar adjacent Centennial Mine, on the east side of the river, on the road that leaves Spanish Dry Diggings, and continues past the Sligar Mine, is a small house in which some people live. These people should be notified and warned by helicopter, or by the El Dorado Sheriff's Office.

**4. Sheet 8 of 11 - Hell Hole Dam Failure Maps
Sheet 7 of 10 - French Meadows Dam Failure Maps
Sheet 4 of 7 - Ralston Afterbay Dam Failure Maps**

There is a road which leads from the Old Foresthill Road to Mammoth Bar, where the public uses this area for off-highway vehicle (OHV) use on a regular basis, particularly when the OHV area is open, currently Mondays, Thursdays, and Sundays. During special events, several hundred people may be in the area. People in this area should be warned by helicopter, or by Parks and Recreation / Placer County Sheriff's personnel.

Popular hiking, biking, and horseback riding trails exist on both sides of the river. The Quarry Trail, on the south side of the river, extends several miles, from Highway 49 to about Maine Bar. On the north side, the trail extends from about Mammoth Bar to the Confluence area. People in these areas should be warned by helicopter, or by Placer County Sheriff's Office or State Parks and Recreation OHV patrols.

The Confluence area, where the North Fork and Middle Forks of the American River join, is very popular, and it is not uncommon to have on the order of 500 people using the area during the day, including the North Fork of the river to Clementine Dam, and the area downstream of No Hands Bridge. A popular hiking trail crosses at No Hands Bridge. People in this area should be warned by Placer County Sheriff's Office or State Parks and Recreation personnel.

A failure of French Meadows or Hell Hole dams would inundate both the Old Foresthill Road Bridge (a.k.a. North Fork Bridge) and the Highway 49 Bridge. It would also inundate approximately one-quarter mile of the road on each side of the Old Foresthill Road Bridge, and Highway 49 between one-eighth and one-quarter mile on each side of the Highway 49 Bridge. A failure of Ralston Afterbay Dam would not inundate either of these bridges. However, for an imminent dam failure at any of the dams, barricades should be set up on these roads approximately one-half mile from the bridges to keep people out of the area. People along the river should be warned by emergency response personnel if time permits, or by helicopter, if the situation is urgent.

5. **Sheet 9 of 11 - Hell Hole Dam Failure Maps**
Sheet 8 of 10 - French Meadows Dam Failure Maps
Sheet 5 of 7 - Ralston Afterbay Dam Failure Maps

Recreation at the confluence area continues downstream from Highway 49 for maybe a half mile. Beyond this, restoration of the river channel at the breached Auburn Cofferdam site is currently in progress. Work here includes closure of the bypass tunnel and installation of a permanent water pump station for PCWA. This area may ultimately have a public parking area, a bridge across the river for horses, bicycles, and foot traffic, and numerous trails. Access to this area is currently restricted to construction traffic.

The headwaters area of Folsom Lake is a very popular location for boaters, fishermen, hikers, and horseback riders. People in this area should be warned of an impending emergency by helicopter, or Sheriff's or Parks and Rec patrol boats.

6. **Sheet 10 and 11 of 11 - Hell Hole Dam Failure Maps**
Sheet 9 of 10 - French Meadows Dam Failure Maps
Sheet 6 of 7 - Ralston Afterbay Dam Failure Maps

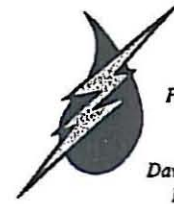
Rattlesnake Bar is a very popular location for boating, swimming,

and other recreation. People in this area should be warned by helicopter and emergency response personnel. Failure of Ralston Afterbay Dam would probably have minimal impact on Folsom Lake downstream of Rattlesnake Bar, other than floating debris, turbidity, and any hazardous materials picked up by the floodwaters. However, failure of French Meadows or Hell Hole dams would have severe effects on floating debris, turbidity, rising water levels, turbulence, and potential flooding impacts downstream of Folsom Dam. It is anticipated that access to Folsom Lake and its recreation areas would be closed, using helicopters and emergency response personnel on the ground and water.

- D. Inundation Maps, Data Tables, and Hydrographs (these items are included behind the individual index tabs for each dam, at the beginning of Section VII)**
- 1. French Meadows Dam (PMF failure conditions and Fair Weather failure conditions are shown as one; no significant difference)**
 - a. Flood Emergency Map Index Sheet
 - b. Ten Flood Emergency Map Sheets
 - c. Table FM 1 of Cross Sectional Data
 - d. Hydrographs FM1, FM8, FM15, FM116, FM190
 - 2. Hell Hole Dam (PMF failure conditions and Fair Weather failure conditions are shown as one; no significant difference)**
 - a. Flood Emergency Map Index Sheet
 - b. Eleven Flood Emergency Map Sheets
 - c. Table HH 1 of Cross Sectional Data
 - d. Hydrographs HH 1, HH9, HH11, HH101, HHR28, HHR118, HHC1
 - 3. Ralston Afterbay Dam (PMF and Fair Weather Failure conditions shown separately)**
 - a. Flood Emergency Map Index Sheet
 - b. Seven Flood Emergency Map Sheets
 - c. Table RA 1 and RA 2 of Cross Sectional Data
 - d. Hydrographs RA 8, RA112, RAC1, RAF9, RAF111, RAFC1

Placer County Water Agency

Power System: 24625 Harrison St. • Mail: P.O. Box 667 • Foresthill, California 95631
(530) 367-2291 (530) 885-6917 FAX (530) 367-4440



A Public Agency

BOARD OF DIRECTORS

Pauline Roccucci • Alex Ferreira

Otis Wollan • Lowell Jarvis

Michael R. Lee

David A. Breninger, General Manager

Ed Tiedemann, General Counsel

June 20, 2005

TO: Placer County Water Agency Emergency Action Plan (EAP) holders

RE: EMERGENCY ACTION PLAN - MIDDLE FORK AMERICAN RIVER PROJECT
Federal Energy Regulatory Commission (FERC), PROJECT NO. 2079

REVISION #1 dated May 1, 2005

Placer County Water Agency (PCWA) is required by FERC to update our EAP for the Middle Fork American River Project as necessary. As a result of comments from FERC and other agencies, we have enclosed Revision #1 to our December, 2004 EAP.

The December, 2004 EAP should be located in an area that your personnel can readily locate in a simulated drill scenario or actual emergency.

PCWA is required by FERC to have on file a letter of acknowledgement indicating that you have reviewed the EAP, including the flowcharts and maps, and concur with the actions assigned to your agency. Please carefully review the EAP, including Revision #1. We appreciate any comments or corrections you may have. Please sign and return the enclosed confirmation letter by July 15, 2005, which includes your acknowledgement that the superceded pages of the EAP have been destroyed.

INSTRUCTIONS FOR ADDING REVISION #1 TO THE EAP

- 1) Place a copy of this letter in the front pocket of your EAP binder
- 2) Replace Division I entirely
- 3) Replace Pages 4 – 6 of Division III, with pages 4 – 6A
- 4) Replace Division IV entirely
- 5) Replace Division V entirely
- 6) Replace Division VI entirely

- 7) Replace the yellow cover page of Division VII
- 8) Replace pages 59 – 66 of Division VII (which is after the Ralston Dam Flood Maps section)
- 9) Replace Appendix VIII, Section A, page 1
- 10) Add the enclosed letters to Appendix VIII, Section D – Documentation.
- 11) Please review Division VII and VIII for being in the order shown on the yellow cover pages for each Division. There is a possibility that a limited number of EAPs may have some pages out-of-order.

Sincerely,

PLACER COUNTY WATER AGENCY

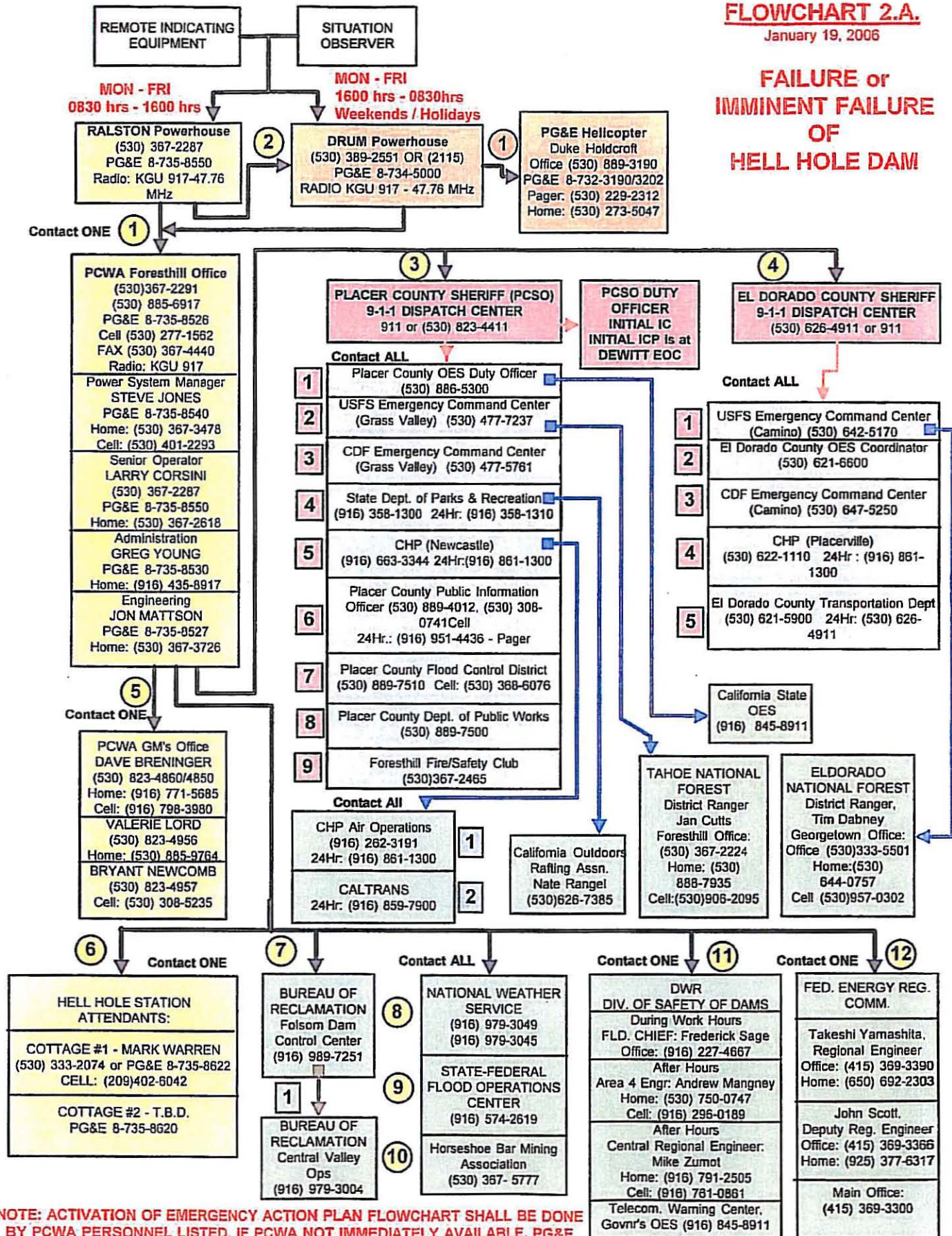


Stephen J. Jones
Power System Manager

FLOWCHART 2.A.

January 19, 2006

FAILURE or IMMINENT FAILURE OF HELL HOLE DAM

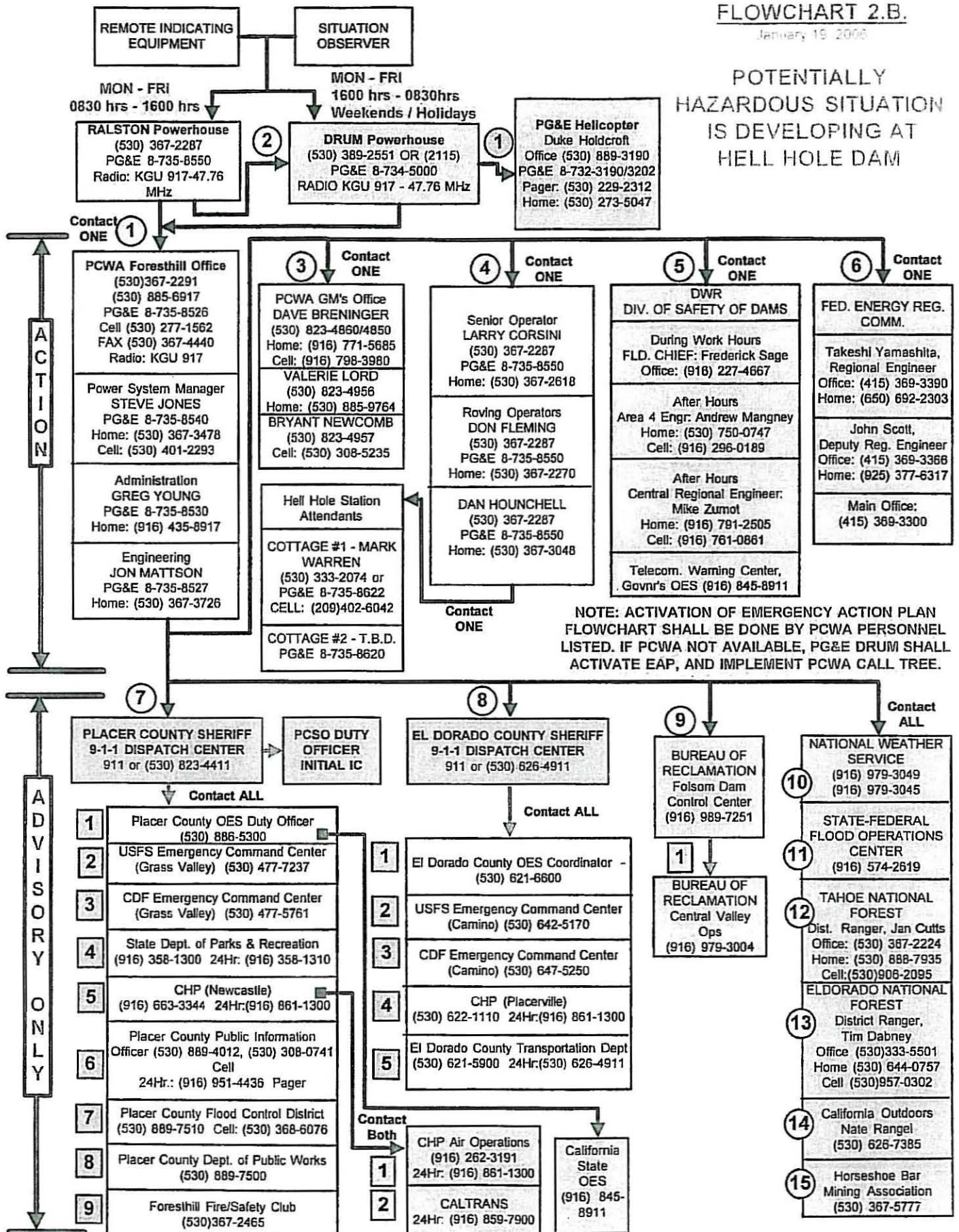


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 2.B.

January 19, 2006

POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
HELL HOLE DAM

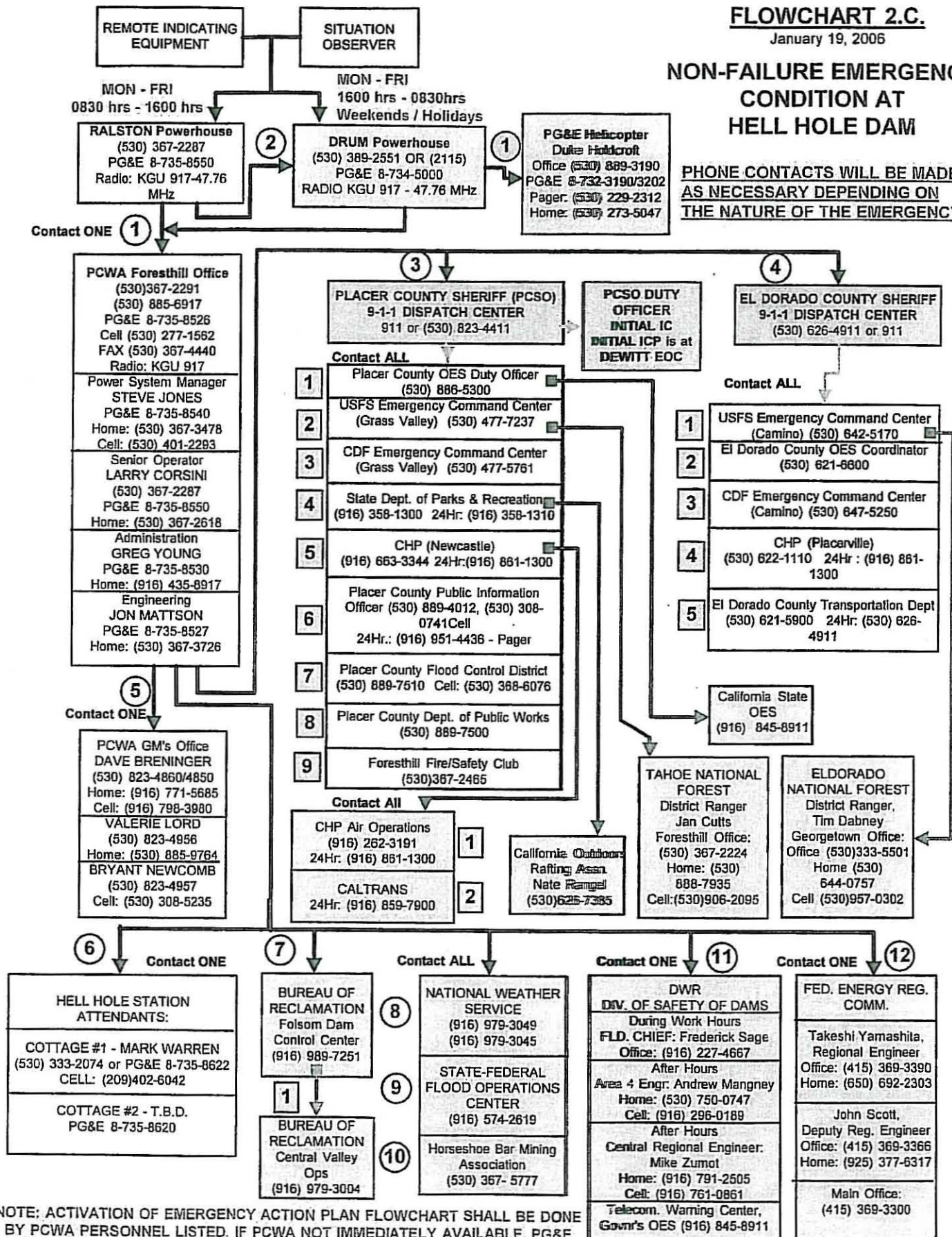


FLOWCHART 2.C.

January 19, 2006

NON-FAILURE EMERGENCY CONDITION AT HELL HOLE DAM

PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY

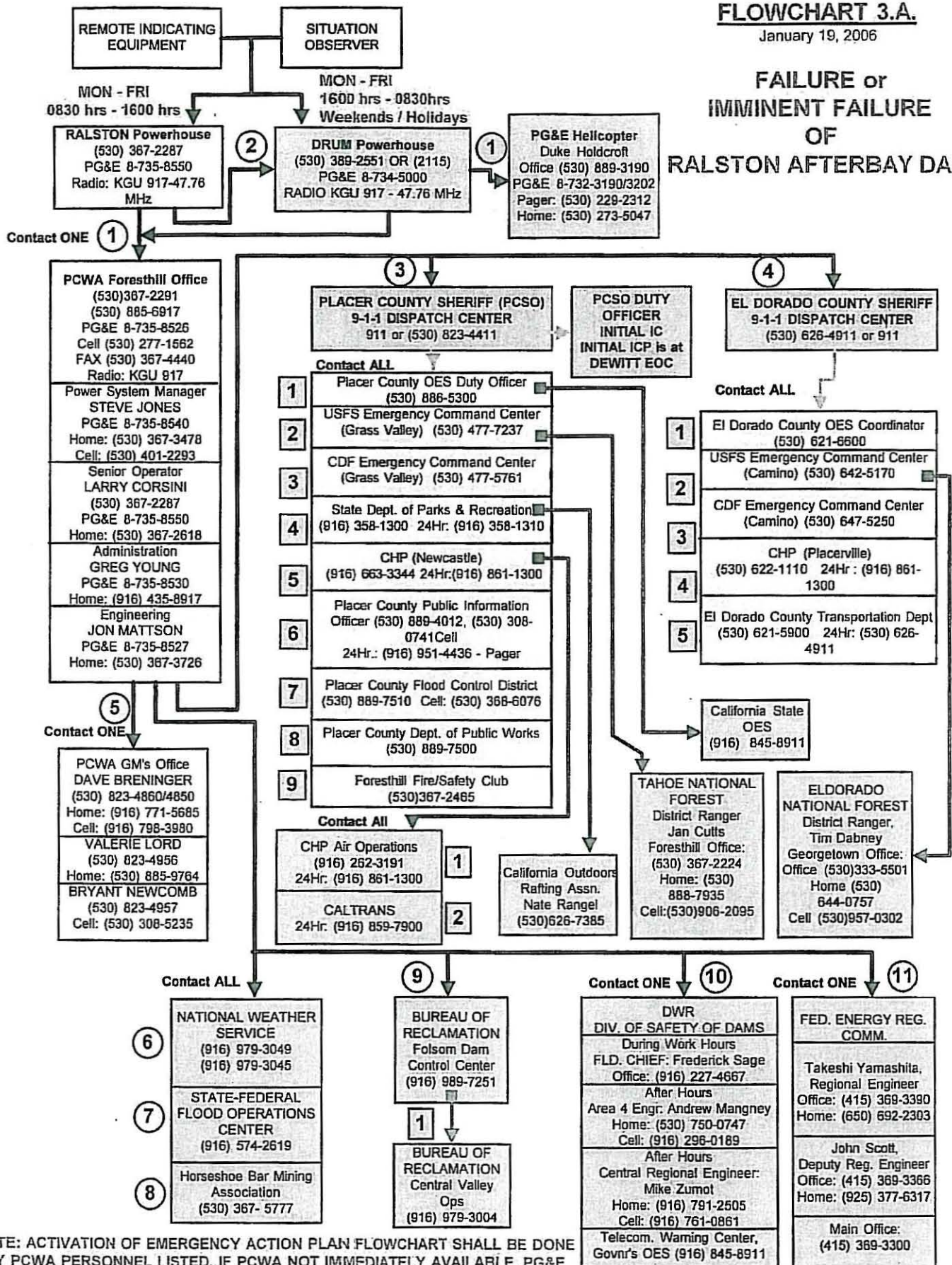


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.A.

January 19, 2006

FAILURE or IMMINENT FAILURE OF RALSTON AFTERBAY DAM



Placer County Water Agency

Power System: 24625 Harrison St. • Mail: P.O. Box 667 • Foresthill, California 95631
(530) 367-2291 (530) 885-6917 FAX (530) 367-4440



A Public Agency

BOARD OF DIRECTORS

Pauline Roccucci • Alex Ferreira

Otis Wollan • Lowell Jarvis

Michael R. Lee

David A. Breninger, General Manager

Ed Tiedemann, General Counsel

RECEIVED JAN 27 2006

January 25, 2006

TO: Placer County Water Agency Emergency Action Plan (EAP) holders

RE: EMERGENCY ACTION PLAN - MIDDLE FORK AMERICAN RIVER PROJECT
Federal Energy Regulatory Commission (FERC), PROJECT NO. 2079

REVISION #2 dated January 19, 2006

Placer County Water Agency (PCWA) is required by FERC to update our EAP for the Middle Fork American River Project as necessary. We have enclosed Revision #2 to our December, 2004 EAP.

The December, 2004 EAP should be located in an area that your personnel can readily locate in a simulated drill scenario or actual emergency.

PCWA is required by FERC to have on file a letter of acknowledgement indicating that you have reviewed the EAP, including the flowcharts and maps, and concur with the actions assigned to your agency. Please carefully review the EAP, including Revision #2. We appreciate any comments or corrections you may have. Please sign and return the enclosed confirmation letter by February 21, 2006, which includes your acknowledgement that the superceded pages of the EAP have been destroyed.

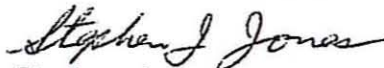
INSTRUCTIONS FOR ADDING REVISION #2 TO THE EAP

- 1) Place a copy of this letter in the front pocket of your EAP binder
- 2) Replace all nine flowcharts in Division I with the new flowcharts
- 3) Replace Pages 44 – 46 of Division V with the new pages
- 4) Insert the Fair Weather Failure Index Map for Ralston Afterbay Dam immediately after the Probable Maximum Failure Map for Ralston Afterbay Dam in Division VII
- 5) Insert Tables RA 1 and RA 2 immediately after the Ralston Afterbay Dam flood maps in Division VII (one or both of these may have been missing in your copy of the EAP)

- 6) Insert the letter from FERC, dated December 29, 2005, at the end of Section VIII

Sincerely,

PLACER COUNTY WATER AGENCY

A handwritten signature in cursive script that reads "Stephen J. Jones".

Stephen J. Jones
Power System Manager

CONFIRMATION OF RECEIPT

EAP Copy # 51

January 25, 2006

TO: Greg Young

RE: EMERGENCY ACTION PLAN - MIDDLE FORK AMERICAN RIVER PROJECT
Federal Energy Regulatory Commission (FERC), PROJECT NO. 2079

My signature below acknowledges that _____
(Organization Name)

has received PCWA's Revision #2 to the December 2004 Middle Fork American River Project Emergency Action Plan. I acknowledge that the instructions accompanying Revision #2 have been implemented, and that the obsolete pages removed from the EAP have been destroyed by shredding or other suitable methods.

Please make sure your EAP copy number is written on your binder.

We have additional comments regarding the EAP. ☐ Yes

☐ No

If you have comments, please attach them to this letter, or send them to Placer County Water Agency, Attn: Greg Young, PO Box 667, Foresthill, CA, 95631, or e-mail them to gyoung@pcwa.net.

Signature: _____

Name (printed): _____

Title: _____

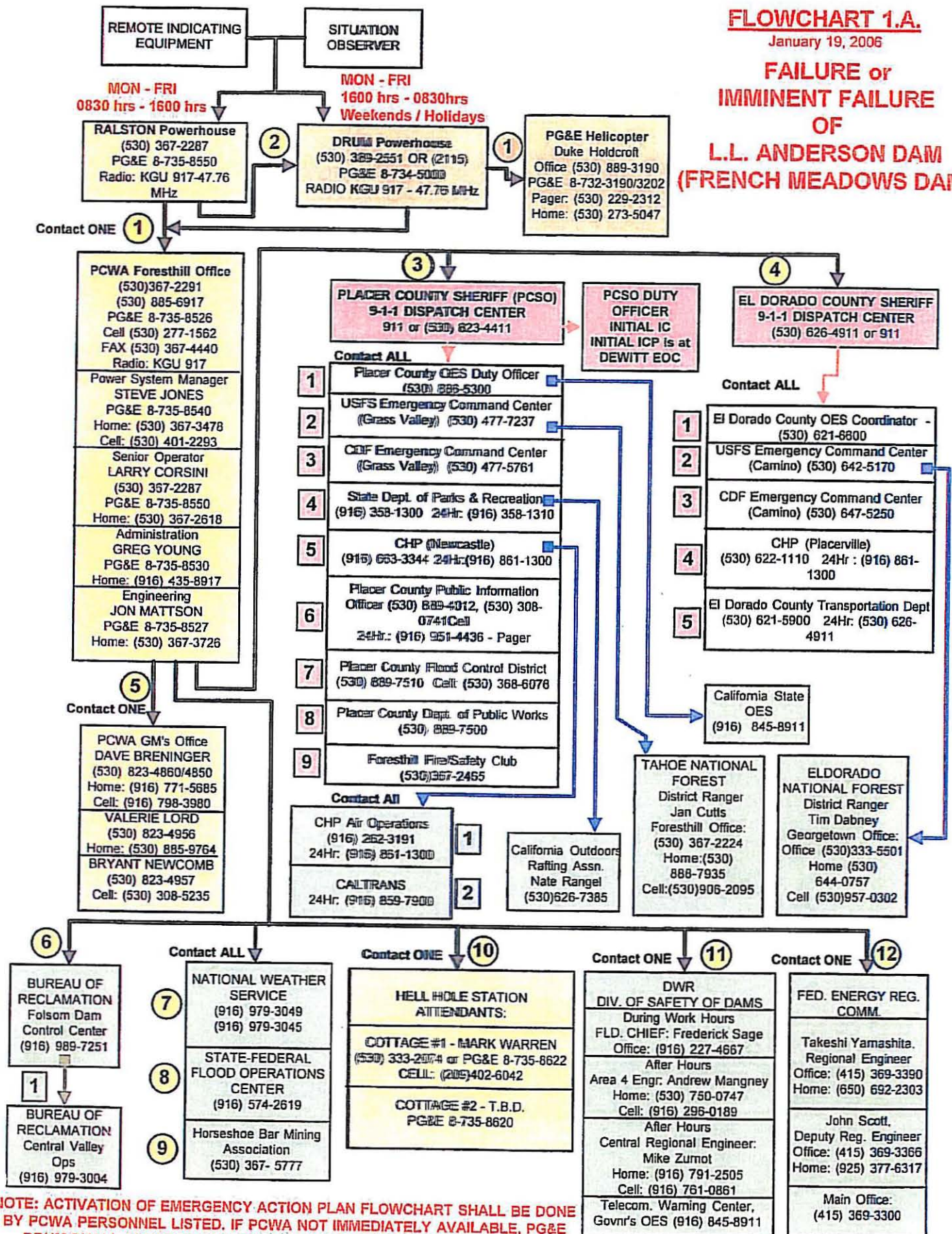
Date: _____

FLOWCHART 1.A.

January 19, 2006

FAILURE or IMMINENT FAILURE OF

L.L. ANDERSON DAM (FRENCH MEADOWS DAM)

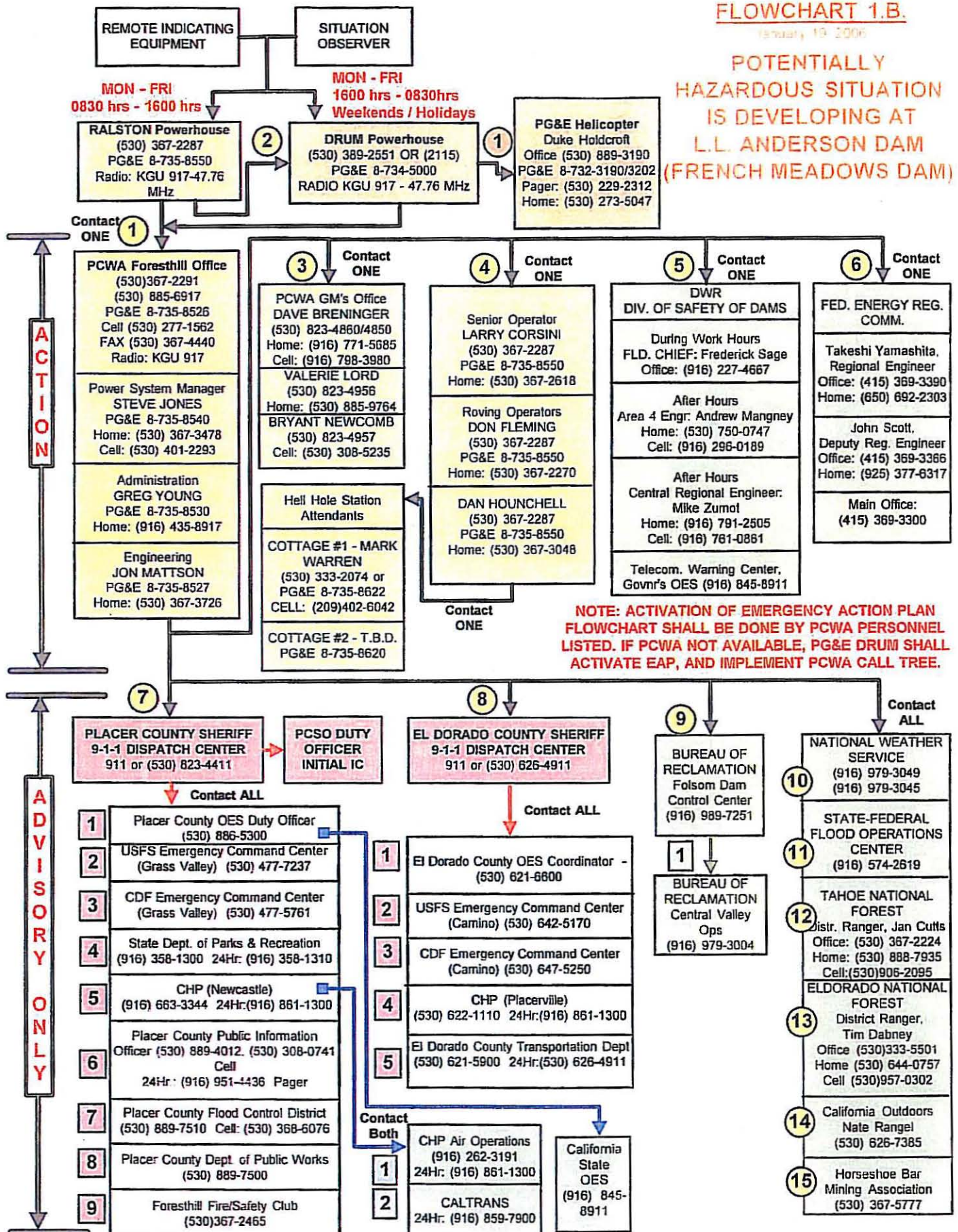


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 1.B.

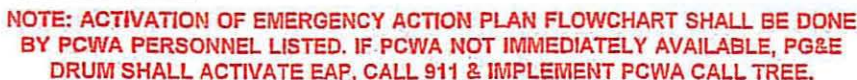
January 19, 2006

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
L.L. ANDERSON DAM
(FRENCH MEADOWS DAM)**



January 19, 2006

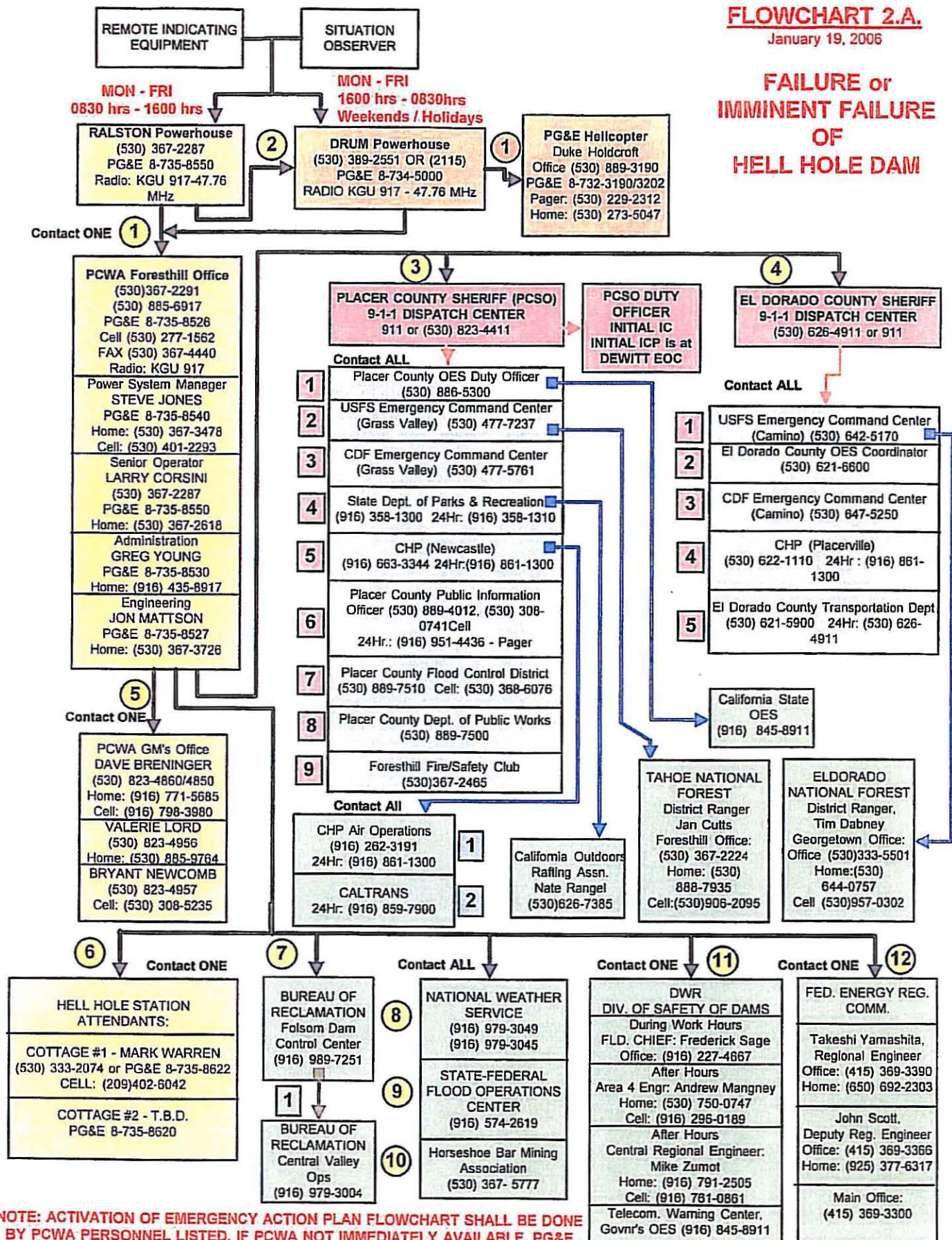
PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY



FLOWCHART 2.A.

January 19, 2006

FAILURE or IMMINENT FAILURE OF HELL HOLE DAM



NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

January 19, 2006

POTENTIALLY HAZARDOUS SITUATION IS DEVELOPING AT HELL HOLE DAM

FLOWCHART 2.B.
January 19, 2006

REMOTE INDICATING EQUIPMENT
SITUATION OBSERVER

MON - FRI 0830 hrs - 1600 hrs
MON - FRI 1600 hrs - 0830hrs Weekends / Holidays

RALSTON Powerhouse
(530) 367-2287
PG&E 8-735-8550
Radio: KGU 917-47.76 MHz

DRUM Powerhouse
(530) 389-2551 OR (2115)
PG&E 8-734-5000
RADIO KGU 917 - 47.76 MHz

PG&E Helicopter
Duke Holdcroft
Office (530) 889-3190
PG&E 8-732-3190/3202
Pager: (530) 229-2312
Home: (530) 273-5047

Contact ONE

PCWA Foresthill Office
(530) 367-2291
(530) 885-6917
PG&E 8-735-8526
Cell (530) 277-1562
FAX (530) 367-4440
Radio: KGU 917

Power System Manager
STEVE JONES
PG&E 8-735-8540
Home: (530) 367-3478
Cell: (530) 401-2293

Administration
GREG YOUNG
PG&E 8-735-8530
Home: (916) 435-8917

Engineering
JON MATTSON
PG&E 8-735-8527
Home: (530) 367-3726

PCWA GM's Office
DAVE BRENINGER
(530) 823-4860/4850
Home: (916) 771-5685
Cell: (916) 798-3980
VALERIE LORD
(530) 823-4956
Home: (530) 885-9764
BRYANT NEWCOMB
(530) 823-4957
Cell: (530) 308-5235

Hell Hole Station Attendants

COTTAGE #1 - MARK WARREN
(530) 333-2074 or PG&E 8-735-8622
CELL: (209) 402-6042

COTTAGE #2 - T.B.D.
PG&E 8-735-8620

Senior Operator
LARRY CORSINI
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-2618

Roving Operators
DON FLEMING
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-2270

DAN HOUNCHELL
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-3048

DWR
DIV. OF SAFETY OF DAMS

During Work Hours
FLD. CHIEF: Frederick Sage
Office: (916) 227-4667

After Hours
Area 4 Engr: Andrew Mangney
Home: (530) 750-0747
Cell: (916) 296-0189

After Hours
Central Regional Engineer:
Mike Zumot
Home: (916) 791-2505
Cell: (916) 761-0861

Telecom. Warning Center,
Gov'n's OES (916) 845-8911

FED. ENERGY REG. COMM.

Takeshi Yamashita,
Regional Engineer
Office: (415) 369-3390
Home: (650) 692-2303

John Scott,
Deputy Reg. Engineer
Office: (415) 369-3366
Home: (925) 377-6317

Main Office:
(415) 369-3300

NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, AND IMPLEMENT PCWA CALL TREE.

PLACER COUNTY SHERIFF
9-1-1 DISPATCH CENTER
911 or (530) 823-4411

PCSO DUTY OFFICER INITIAL IC

EL DORADO COUNTY SHERIFF
9-1-1 DISPATCH CENTER
911 or (530) 626-4911

BUREAU OF RECLAMATION
Folsom Dam Control Center
(916) 989-7251

NATIONAL WEATHER SERVICE
(916) 979-3049
(916) 979-3045

STATE-FEDERAL FLOOD OPERATIONS CENTER
(916) 574-2619

TAHOE NATIONAL FOREST
Dist. Ranger, Jan Cutts
Office: (530) 367-2224
Home: (530) 888-7935
Cell: (530) 908-2095

ELDORADO NATIONAL FOREST
District Ranger,
Tim Dabney
Office (530) 333-5501
Home (530) 844-0757
Cell (530) 957-0302

California Outdoors
Nate Rangel
(530) 626-7385

Horseshoe Bar Mining Association
(530) 367-5777

Placer County OES Duty Officer
(530) 886-5300

USFS Emergency Command Center (Grass Valley)
(530) 477-7237

CDF Emergency Command Center (Grass Valley)
(530) 477-5751

State Dept. of Parks & Recreation
(916) 358-1300 24Hr: (916) 358-1310

CHP (Newcastle)
(916) 663-3344 24Hr: (916) 861-1300

Placer County Public Information Officer
(530) 889-4012, (530) 308-0741
Cell 24Hr: (916) 951-4436 Pager

Placer County Flood Control District
(530) 889-7510 Cell: (530) 368-6076

Placer County Dept. of Public Works
(530) 889-7500

Foresthill Fire/Safety Club
(530) 367-2465

El Dorado County OES Coordinator
(530) 621-6600

USFS Emergency Command Center (Camino)
(530) 642-5170

CDF Emergency Command Center (Camino)
(530) 647-5250

CHP (Placerville)
(530) 622-1110 24Hr: (916) 861-1300

El Dorado County Transportation Dept
(530) 621-5900 24Hr: (530) 626-4911

CHP Air Operations
(916) 262-3191
24Hr: (916) 861-1300

CALTRANS
24Hr: (916) 859-7900

California State OES
(916) 845-8911

BUREAU OF RECLAMATION
Central Valley Ops
(916) 979-3004

Contact ALL

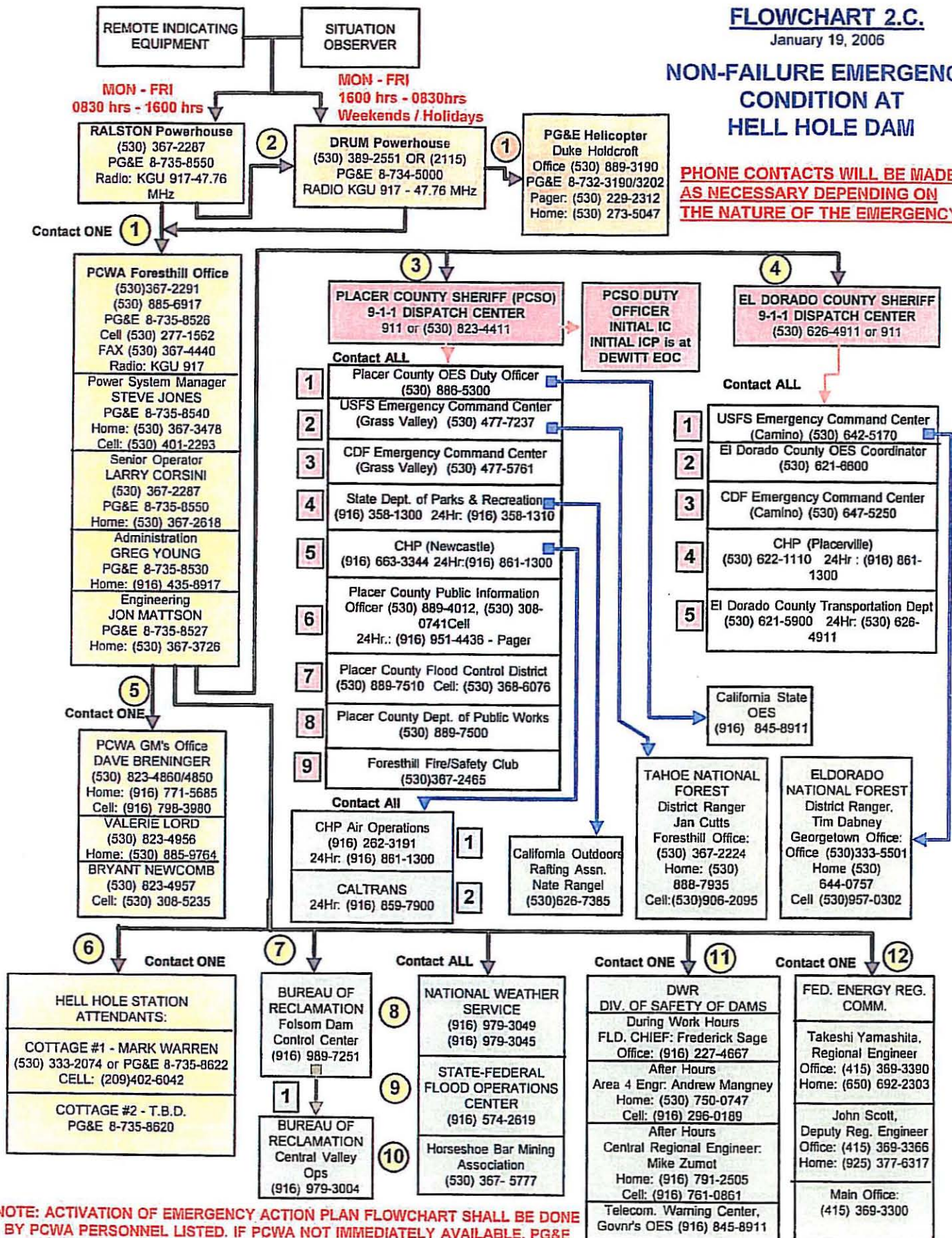
Contact Both

FLOWCHART 2.C.

January 19, 2006

NON-FAILURE EMERGENCY CONDITION AT HELL HOLE DAM

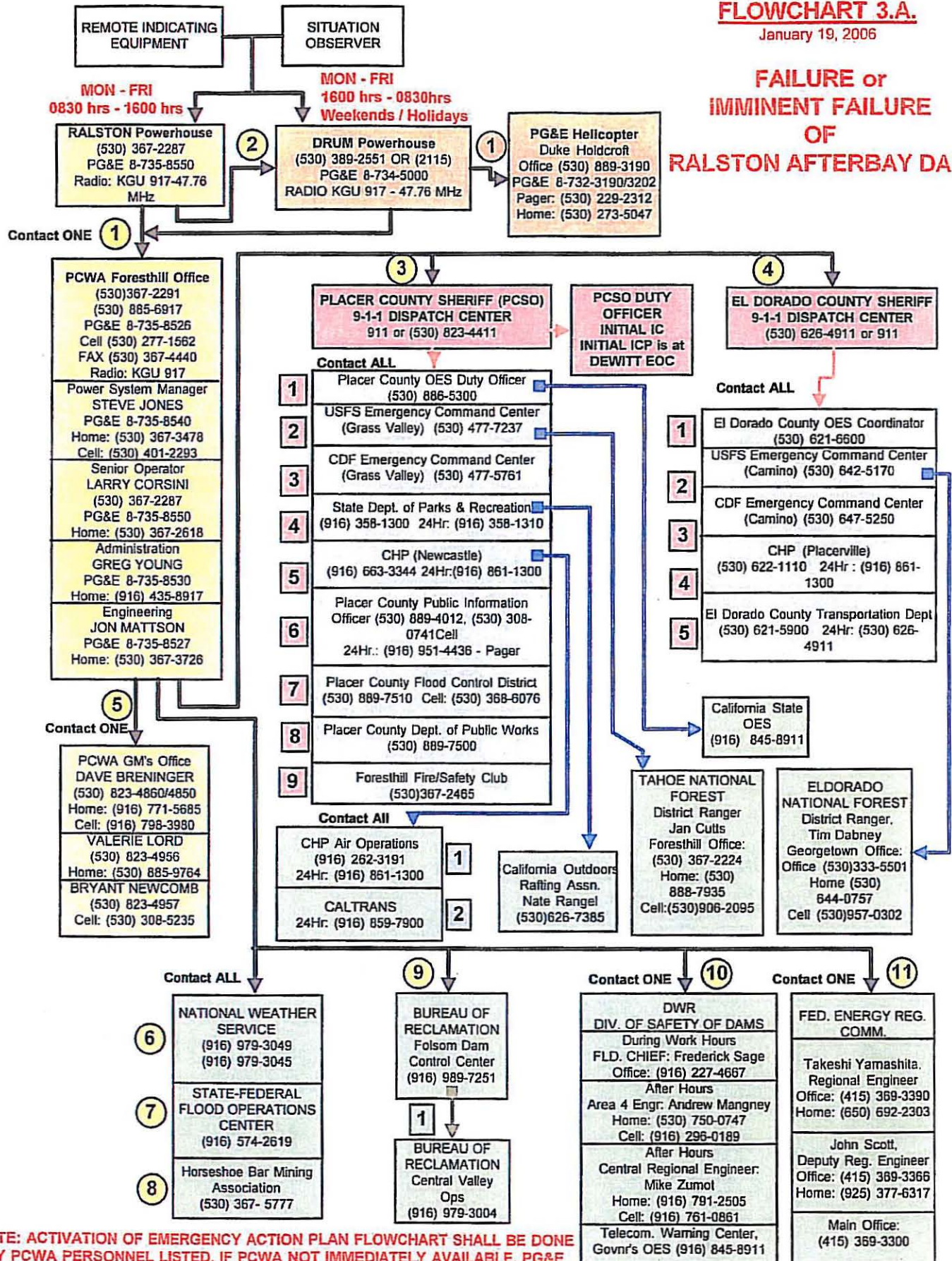
**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**



FLOWCHART 3.A.

January 19, 2006

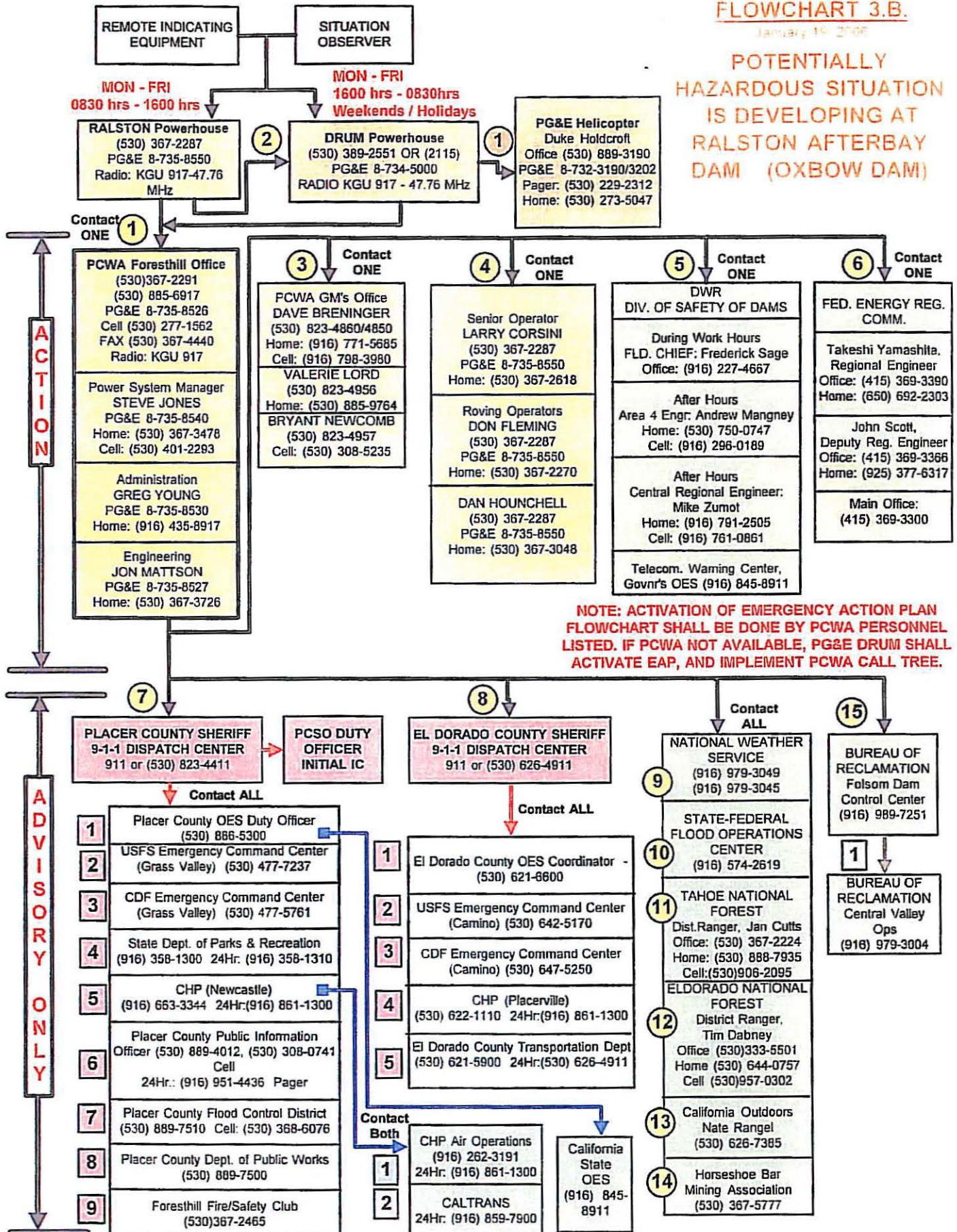
FAILURE or IMMINENT FAILURE OF RALSTON AFTERBAY DAM



FLOWCHART 3.B.

January 14, 2008

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
RALSTON AFTERBAY
DAM (OXBOW DAM)**

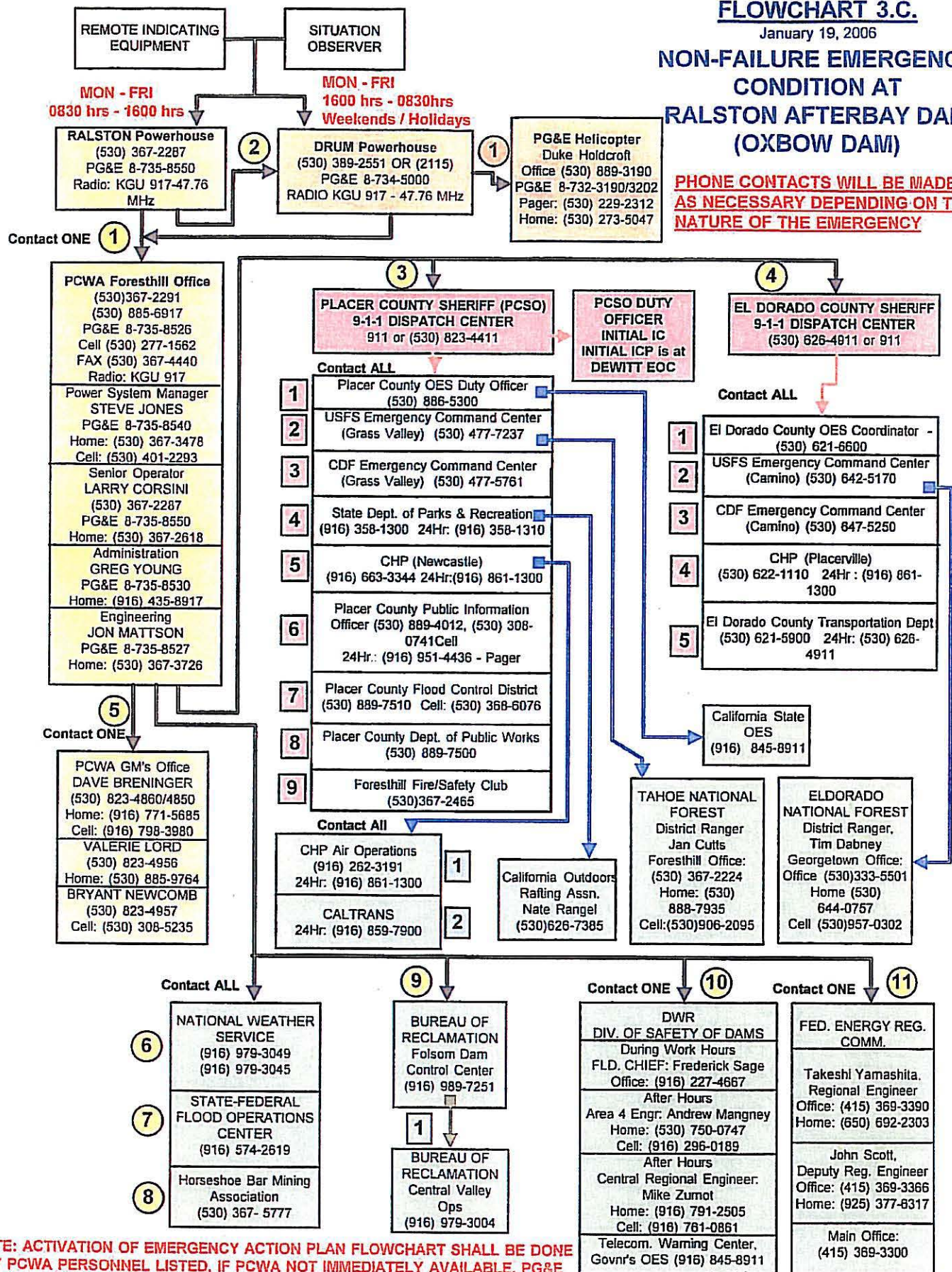


FLOWCHART 3.C.

January 19, 2006

NON-FAILURE EMERGENCY CONDITION AT RALSTON AFTERBAY DAM (OXBOW DAM)

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON THE
NATURE OF THE EMERGENCY**



NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

10. Copies of the Emergency Action Plan are located in a conspicuous location at the following project facilities:

Foresthill Headquarters
French Meadows Powerhouse
Hell Hole Powerhouse
Middle Fork Powerhouse
Ralston Powerhouse
Oxbow Powerhouse
Hell Hole Dormitory
Hell Hole Garage
French Meadows Spillway Engine-Generator House
Ralston Afterbay Dam Control Building

11. Personnel listed below shall have a copy of the Emergency Action Plan available for their use at home in the event of an emergency:

D. Breninger
L. Corsini
D. Fleming
D. Houchell
S. Jones
V. Lord
J. Mattson
B. Newcomb
Mark Warren
M. Wyatt
G. Young
Station Attendant T.B.D.

C. Responsibility for Evacuation

The responsibility for initial evacuation of any people immediately downstream of the dam in emergency conditions rests with PCWA employees listed in Division V, Section A, paragraph 4, or other employees as available. After notification of the Placer County Sheriff's Office 911 Dispatch, and after their acknowledgment of their readiness to take over command, the Incident Commander will take over responsibility for evacuations.

Since permanent housing would be minimally affected by a dam failure, there would not be a large need for evacuation shelters. However, depending on the duration of the emergency, the Incident Commander may choose to set up a temporary camp with eating and sleeping facilities for personnel involved in the operation. The California Department of Forestry or U.S. Forest Service typically can respond to this type of situation.

Typically, evacuations from the Middle Fork of the American River canyon, and its tributaries, should be to primary paved roads well above the high water mark for any flood conditions, such as to Mosquito Ridge Rd., Foresthill Road, Wentworth Springs Rd., Ralston Ridge Rd., etc. This should help identify evacuees. Names of all evacuees should be recorded, and reported to the Placer County or El Dorado County Sheriff's departments, as appropriate.

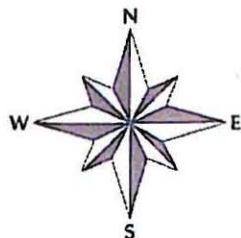
D. Responsibility for Duration, Security, Termination and Follow-Up

The Incident Commander and PCWA shall agree on and designate on-site persons to be responsible for monitoring and documenting the emergency event at the dam from start to finish, including security measures, until the emergency has terminated.

The EOC Director shall have overall responsibility for all emergency functions under SEMS, including the Management function. Depending on the magnitude of the event, he may delegate responsibility for each of the other SEMS functions, including Operations, Planning/Intelligence, Logistics, and Finance/Administration. The EOC Director shall be responsible for termination of the event. The EOC Director shall be responsible for the termination and completion of all SEMS functions, including all finance and administration issues. He shall arrange for a follow-up evaluation after the emergency by all participants. The results of the evaluation shall be documented in a written report.

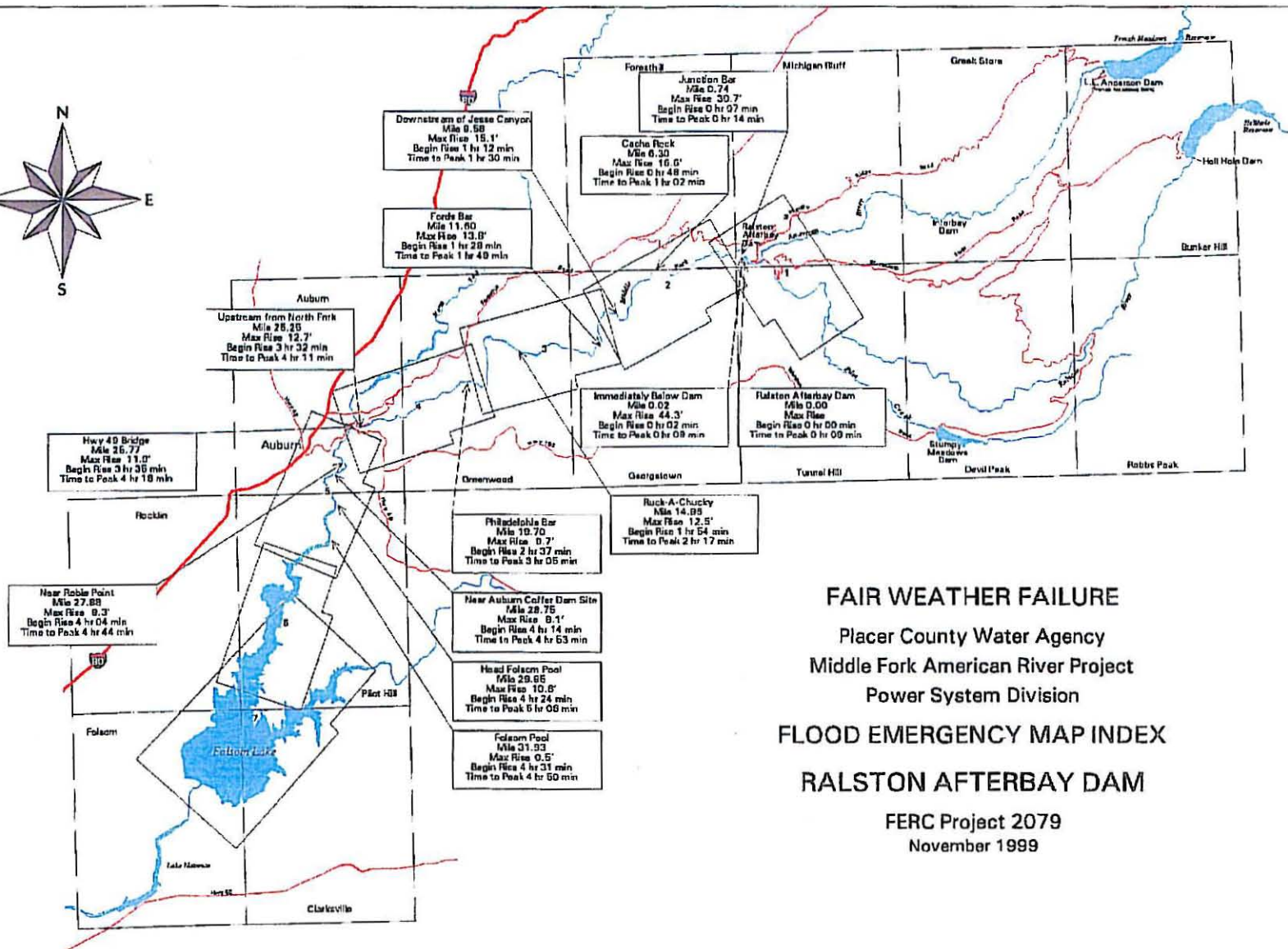
E. EAP Coordinator Responsibility

PCWA's EAP Coordinator is responsible for planning EAP-related activities, preparing revisions to the EAP, establishing EAP training seminars, coordinating EAP exercises, and answering any questions in regard to the EAP. PCWA's EAP Coordinator is designated as Greg Young.



USGS 71/2 Quads

Foresthill
Michigan Bluff
Great Stone
Bunker Hill
Auburn
Greenwood
Georgetown
Tunnel Hill
Devil Peak
Robbs Peak
Rocklin
Plot Hill
Folsom
Clarksville



FAIR WEATHER FAILURE

Placer County Water Agency
Middle Fork American River Project
Power System Division

FLOOD EMERGENCY MAP INDEX

RALSTON AFTERBAY DAM

FERC Project 2079
November 1999

Scale: 1:250,000

Notes:
Original Inundation Maps Completed By Sierra Hydrotech - 1993.
Inundation Maps Updated By Hesse Engineering - 1999.
Digital Data (ESRI) Obtained From Trak's GIS Lab, California.
Digital Data: Roads: 2/86; PLE: 1C/82; Geonames 11/88; DEM: 3/87.
Hydrography: 12/80; Landuse: 1980.
Projection: NAD 83 Zone 10, NAD83.
Hydrography Are Available For Review at Placer County Water Agency.

HARZA

Table RA 1

RALSTON DAM FAILURE
PMF CONDITIONS

LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ¹ (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
Ralston Afterbay Dam	0.00	355,460	—	—	16.02	—	—	0.00
Immed. below Dam	0.02	355,460	1,171.22	68.2	18.37	14.2	0.130	0.00
Junction Bar	0.74	325,226	1,124.80	53.8	15.36	8.9	0.190	0.04
Cache Rock	6.30	249,406	955.68	50.7	14.90	4.8	0.67	0.28
	9.58	240,321	895.68	55.7	12.50	4.1	0.92	0.45
Fords Bar	11.60	234,944	854.00	54.0	12.87	3.6	1.080	0.60
Ruck-A-Chucky	14.96	230,822	812.26	52.3	17.62	3.0	1.27	0.75
	19.70	228,652	700.13	41.1	12.11	2.0	1.60	0.85
REACH TWO								
Upstream fm North Fork	25.25	224,295	606.10	65.1	10.74	3.0	2.092	1.25
Hwy 49 Bridge	25.77	223,784	600.00	59.8	10.91	2.9	2.144	1.30
	27.88	222,470	565.00	55.0	12.01	2.9	2.300	1.35
² Nr Auburn Collier Dam	28.75	222,120	550.50	49.5	14.06	2.8	2.352	1.40
² Head Folsom Pool	29.95	221,785	522.99	57.0	13.39	2.8	2.456	1.50
Folsom Pool	31.93	221,470	479.28	55.3	14.32	1.6	2.508	1.60
Folsom Pool	35.34	—	—	—	—	0.25	—	—
Folsom Pool	42.15	—	—	—	—	0.25	—	—

¹ Rise in water surface attributable to failure of Ralston Afterbay Dam only. Does not include rise attributable to PMF inflow to Ralston.

² Auburn damsite between mi 28.75 and mi 29.95.

Table RA 2

**RALSTON DAM FAILURE
FAIR WEATHER CONDITIONS**

LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ¹ (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
Ralston Afterbay Dam	0.00	223,132	—	—	13.98	—	0.142	0.00
Immed. below Dam	0.02	223,132	1156.31	53.3	16.91	44.3	0.142	0.03
Junction Bar	0.74	168,414	1108.36	37.4	14.64	30.7	0.232	0.12
Cache Rock	6.30	60,197	928.19	23.2	9.73	16.6	1.035	0.80
	9.58	47,305	861.14	21.1	8.48	15.1	1.508	1.20
Fords Bar	11.60	41,075	820.00	19.9	8.10	13.8	1.815	1.46
Ruck-A-Chucky	14.96	35,207	778.59	18.6	8.71	12.5	2.280	1.90
	19.70	30,813	676.26	17.3	6.35	9.7	3.075	2.62
REACH TWO								
Upstream fm North Fork	25.25	26,852	563.63	22.6	6.13	12.7	4.188	3.54
Hwy 49 Bridge	25.77	26,067	554.00	19.0	6.02	11.9	4.296	3.59
	27.88	23,893	526.00	15.9	5.85	9.3	4.728	4.06
² Nr Auburn Coffey Dam	28.75	23,463	514.74	13.7	6.87	8.1	4.890	4.24
² Head Folsom Pool	29.95	23,139	483.77	17.8	6.55	10.6	5.106	4.40
Folsom Pool	31.93	—	466.46	—	2.40	0.50	4.836	4.51
Folsom Pool	35.34	—	466.25	—	—	0.25	—	—
Folsom Pool	42.15	—	—	—	—	0.25	—	—

¹ Rise in water surface attributable to failure of Ralston Afterbay Dam. Initial water surface in Folsom Reservoir pool assumed at 466.0 feet, and rises in pool taken from that elevation.

² Auburn damsite between mi 28.75 and mi 29.95.

FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections – San Francisco Regional Office
901 Market Street, Suite 350, San Francisco, California 94103
(415) 369-3300 Office (415) 369-3322 Facsimile

December 29, 2005

In reply refer to:
Project No. 2079-CA
NatDam No. CA00859

Gregory A. Young, Administrative Specialist
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631

RECEIVED

JAN 03 2006

Re: Ralston Afterbay Dam - Emergency Action Plan Annual Drill

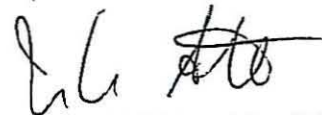
Dear Mr. Young:

Thank you for submitting the results of your annual EAP exercise with your letter dated December 20, 2005 for the Ralston Afterbay Dam, FERC Project No. 2079. Your simulated emergency was a large crack in the upstream wall of the drainage gallery.

This drill satisfies the Code of Federal Regulations Part 12.25(b) which states, "Each licensee or applicant must annually test the state of training and readiness of key licensee or applicant personnel responsible for responding properly during a project emergency to ensure that they know and understand the procedures to be followed throughout a project emergency."

Your continued cooperation on issues of dam safety is appreciated. Should you have any questions, you may contact Mr. John Onderdonk at (415) 369-3339.

Sincerely,



(For) Takeshi Yamashita, P.E.
Regional Engineer



EMERGENCY ACTION PLAN

Middle Fork American River Project

FERC Project No. 2079

**Placer County Water Agency
Power System Division
Foresthill, California
December, 2004**

Table FM 1

L.L. ANDERSON DAM FAILURE
PMF CONDITIONS

LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ^u (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
L.L. Anderson Dam	0.00	2,465,179	5,192.4	150.4	24.29	—	0.750	0.00
	0.10	2,439,199	5,169.0	132.0	34.45	127.1	0.750	0.01
	0.59	2,398,505	5,053.7	123.7	33.04	118.8	0.788	0.08
	1.10	2,378,675	4,940.2	150.2	44.28	145.9	0.792	0.11
	1.42	2,383,921	4,838.0	158.0	49.39	152.9	0.825	0.14
	1.42	2,383,921	4,838.0	158.0	49.39	152.9	0.825	0.14
	1.99	2,419,335	4,707.8	172.8	39.67	167.1	0.825	0.19
REACH TWO								
	2.199	2,419,335	4,707.8	172.8	39.67	167.1	0.825	0.19
	2.39	2,370,714	4,661.7	161.7	41.34	156.2	0.825	0.21
	3.02	2,354,322	4,406.5	126.5	59.83	121.5	0.825	0.25
	3.70	2,341,672	4,282.5	162.5	35.11	157.3	0.866	0.29
	4.50	2,303,757	4,159.9	184.9	49.96	179.5	0.907	0.37
	6.36	2,272,660	3,738.2	198.2	49.92	192.6	0.949	0.49
	8.04	2,250,092	3,319.4	179.4	51.02	175.2	0.990	0.58
	9.46	2,230,458	2,983.3	158.3	42.34	154.3	1.031	0.61
	10.27	2,219,380	2,812.9	142.9	44.12	139.1	1.031	0.63
REACH THREE								
	10.27	2,219,380	2,812.9	142.9	44.12	139.1	1.031	0.63
Interbay Powerplant	10.91	2,201,986	2,707.5	167.5	30.88	163.9	1.082	0.64
Interbay Dam	11.29	2,186,096	2,676.9	210.9	32.76	146.9	1.082	0.64
Below Interbay Dam	11.32	2,186,096	2,649.7	184.7	42.20	179.4	1.087	0.70
	13.10	2,165,216	2,340.8	185.8	39.91	181.4	1.137	0.72
	15.04	2,139,663	2,051.2	176.2	34.33	171.7	1.201	0.88
	16.59	2,094,596	1,891.3	186.3	36.13	182.4	1.260	0.96
	18.11	2,066,111	1,721.5	166.5	32.73	162.4	1.319	1.03
	19.81	2,033,882	1,538.6	168.6	48.09	165.6	1.363	1.11
Ralston Afterbay Res.	21.06	2,028,850	1,279.7	125.7	44.52	100.7	1.393	1.15
Ralston Powerplant (on Rubicon)			1,279.7	125.7	—	100.7	1.393	1.15

^u Fair weather low water to PMF peak.

TABLE FM 1 (Continued)
L.L. ANDERSON DAM FAILURE
PMF CONDITIONS

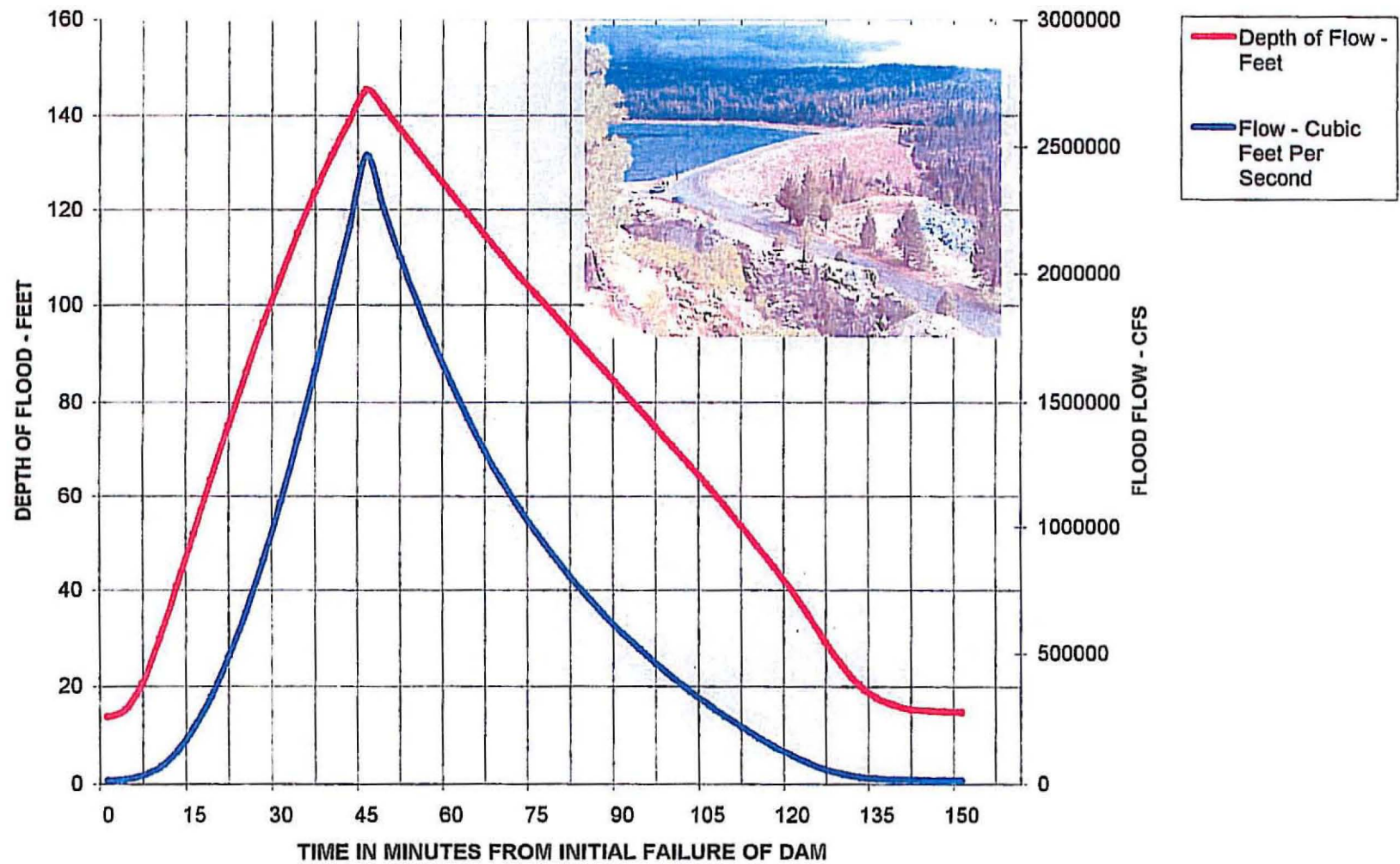
LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ^u (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH FOUR								
Ralston Afterbay Res.	21.06	2,028,850	1,279.7	125.7	44.52	100.7	1.393	1.15
Ralston Afterbay Res.	21.80	1,939,124	1,272.8	151.8	16.21	93.8	1.426	1.16
Ralston Afterbay Dam	22.16	1,945,674	1,263.6	159.6	25.89	84.6	1.426	1.16
Immed. Below Ralston	22.20	1,945,674	1,251.7	151.7	34.59	145.9	1.486	1.18
Junction Bar	22.90	1,883,014	1,198.2	127.2	29.71	121.8	1.591	1.22
	25.54	1,463,050	1,153.1	143.1	18.31	136.7	1.846	1.40
	26.70	1,412,789	1,121.9	161.9	23.83	153.3	1.891	1.46
Cache Rock	28.46	1,375,122	1,039.6	134.6	24.03	128.9	2.056	1.59
	31.74	1,241,590	973.8	133.8	21.26	129.1	2.431	1.77
Fords Bar	33.76	1,099,514	950.8	150.8	20.74	145.0	2.566	1.89
Ruck-A-Chucky	37.12	1,014,876	886.6	126.6	25.00	121.4	2.686	2.09
	41.86	963,220	757.5	98.5	16.65	91.5	3.091	2.40
	45.31	903,450	699.4	95.4	18.01	90.6	3.346	2.69
Upstream North Fork	47.41	871,459	654.7	113.7	20.29	106.6	3.617	2.84
REACH FIVE								
Upstream North Fork	47.41	871,459	654.7	113.7	20.29	106.6	3.617	2.84
Hwy 49 Bridge	47.93	852,337	636.7	112.5	20.11	106.3	3.617	2.84
	49.09	828,032	632.2	112.2	17.78	106.5	3.687	2.91
Nr Auburn Coffey Dam ^v	50.91	815,426	597.7	96.7	22.48	92.5	3.757	3.05
Head Folsom Pool ^v	52.11	810,751	560.5	94.5	23.75	89.0	3.828	3.12
Folsom Pool	53.05	803,178	541.9	95.9	14.98	81.9	3.898	3.20
Folsom Pool	54.09	798,755	521.1	97.1	20.83	61.1	3.968	3.27
Folsom Pool	55.63	799,530	481.9	90.9	17.92	21.9	3.968	3.34
Folsom Pool	57.50	—	472.8	—	11.84	12.8	— ^v	3.41
Folsom Pool	64.31	—	472.8	—	2.10	12.8	— ^v	3.62
S.F. American Arm	65.14	—	472.8	—	—	12.8	— ^v	3.69
Folsom Dam	68.68	—	472.8	—	—	12.8	— ^v	3.76

^u Rise in water surface attributable to failure of L.L. Anderson Dam, Interbay Dam, and Ralston Afterbay Dam. Initial water surface in Folsom Reservoir pool assumed at 460.0 feet, and rises in pool taken from that elevation.

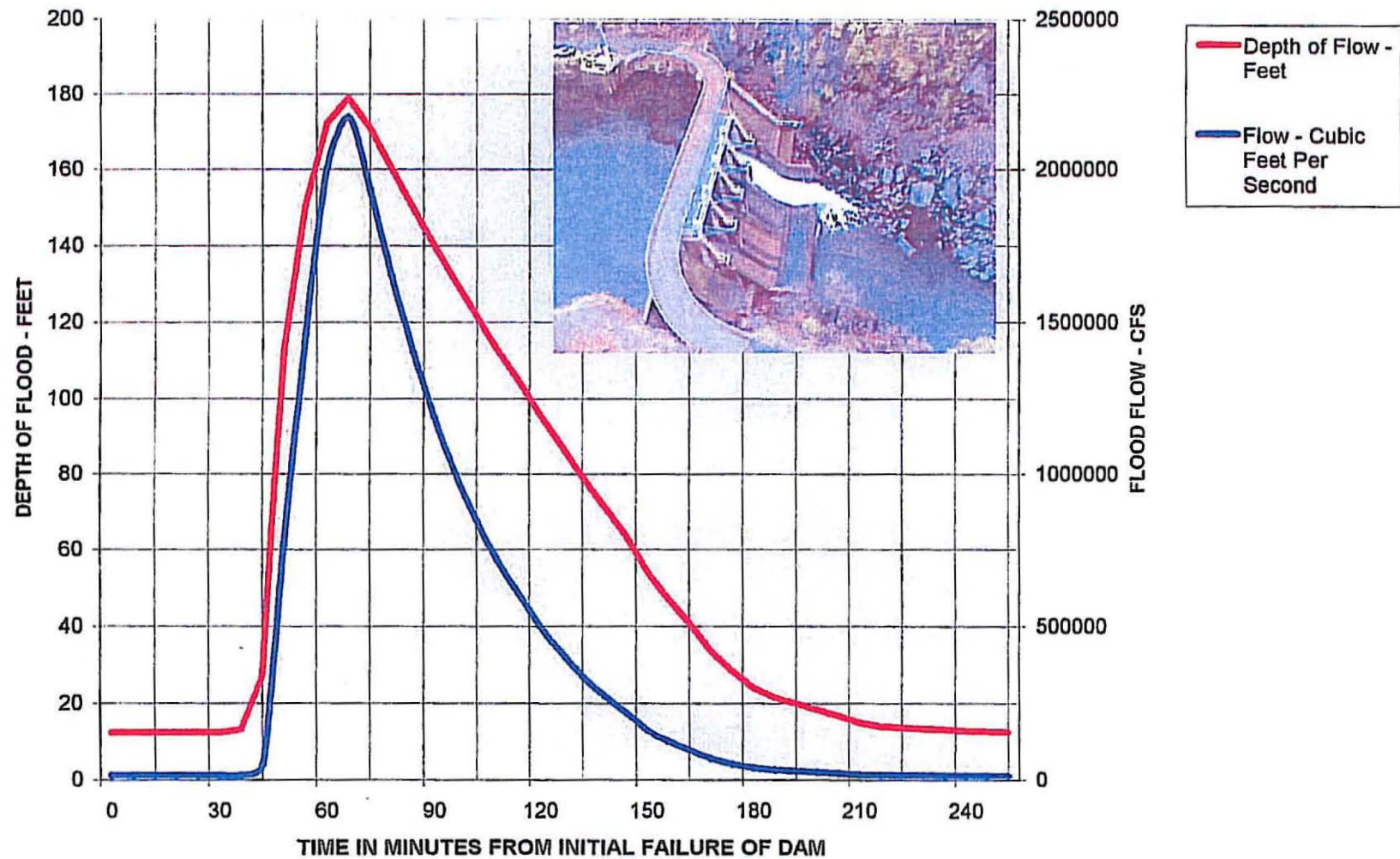
^v Auburn damsite between mile 50.91 and 52.11.

^v Approximate time for the majority of the volume of L.L. Anderson, Interbay, and Ralston to reach Folsom is about 10 hours.

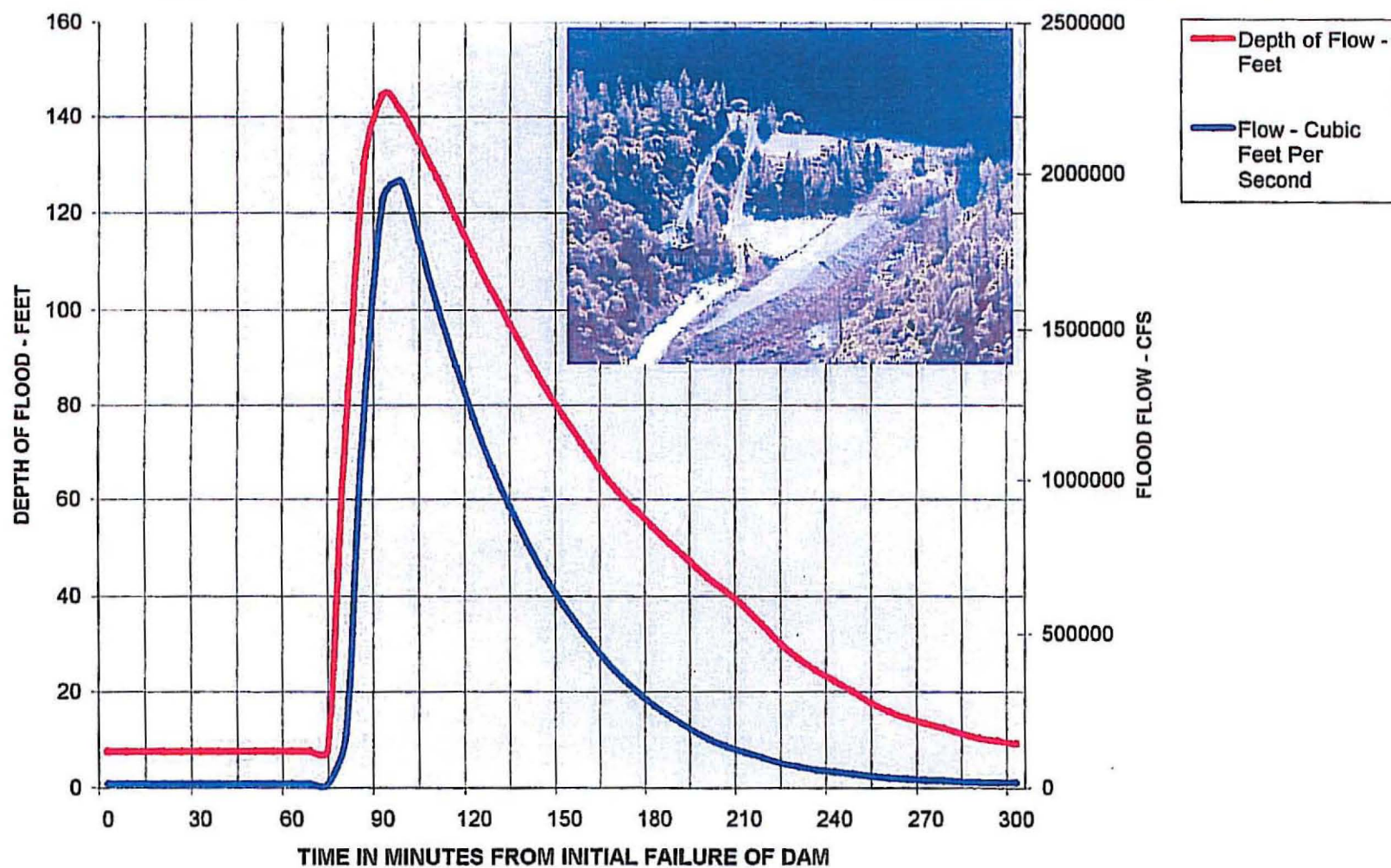
**FRENCH MEADOWS FAILURE PMF HYDROGRAPH
BELOW FRENCH MEADOWS DAM 0 MILES - FM1 - AT DAM**



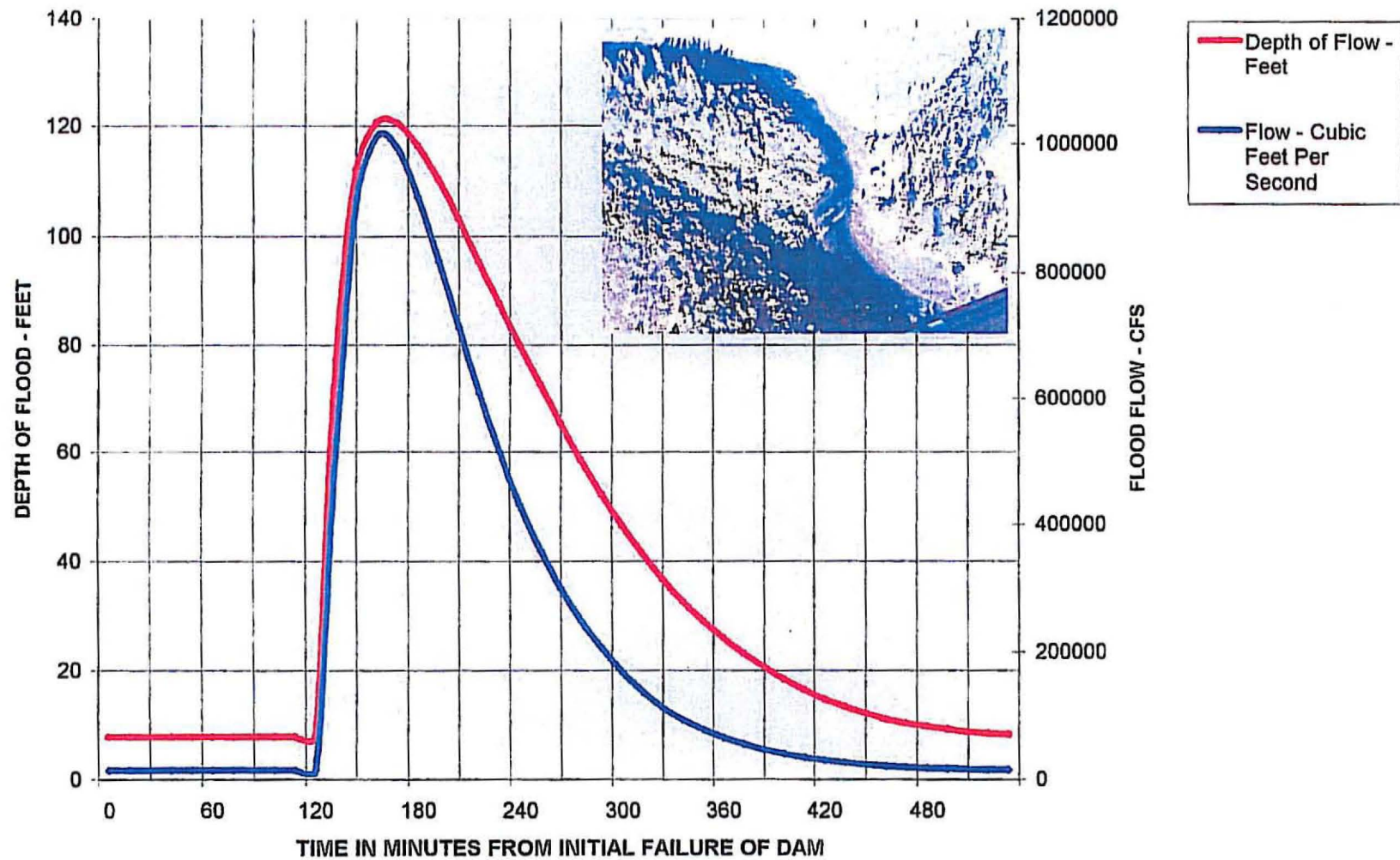
FRENCH MEADOWS FAILURE PMF HYDROGRAPH
BELOW FRENCH MEADOWS DAM 11.32 MILES - FM8 - D/S OF INTERBAY DAM



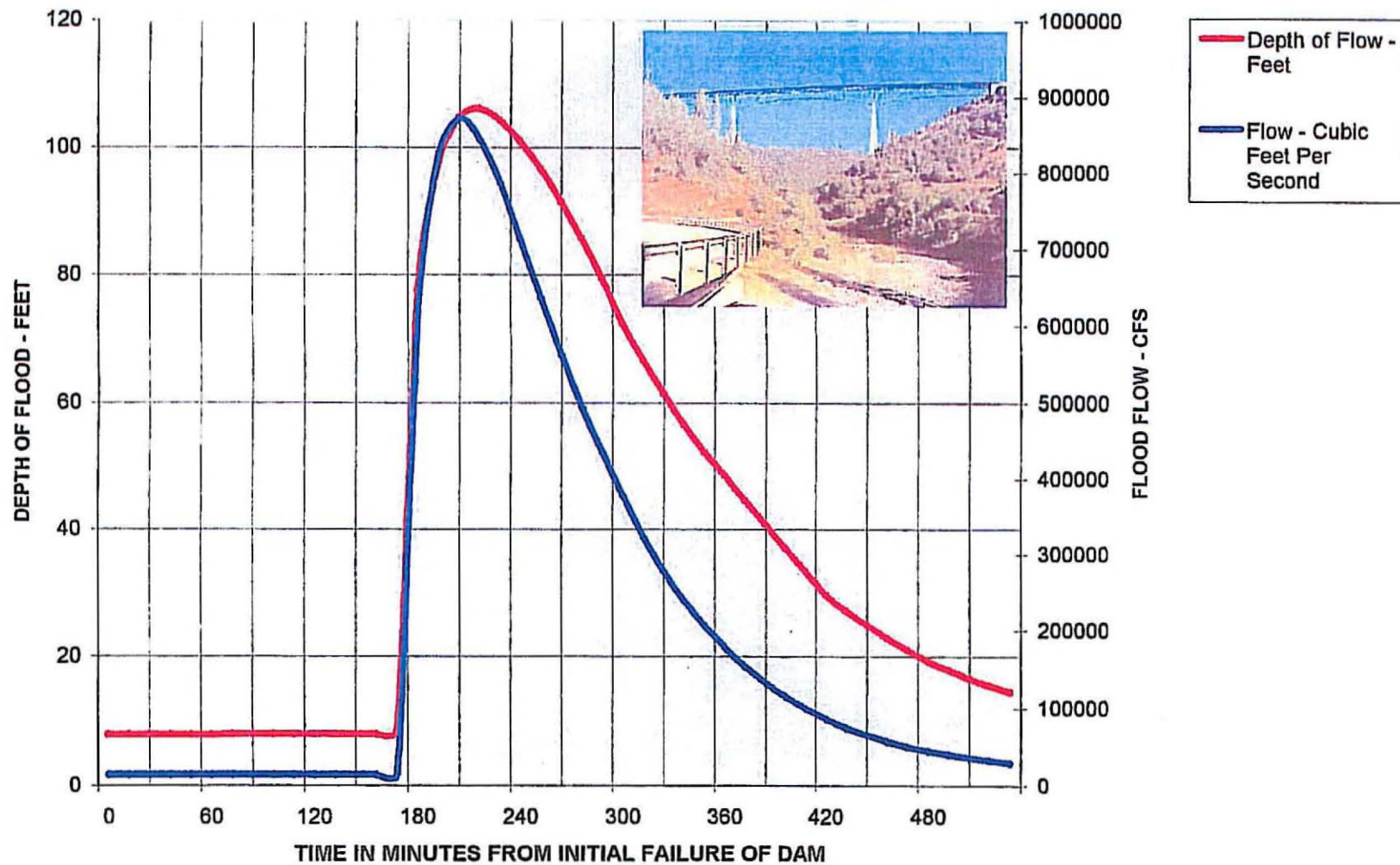
FRENCH MEADOWS FAILURE PMF HYDROGRAPH
BELOW FRENCH MEADOWS DAM 22.20 MILES - FM15 - D/S OF RALSTON AFTERBAY DAM



FRENCH MEADOWS FAILURE PMF HYDROGRAPH
BELOW FRENCH MEADOWS DAM 37.12 MILES - FM116 - RUCK-A-CHUCKY



FRENCH MEADOWS FAILURE PMF HYDROGRAPH
BELOW FRENCH MEADOWS DAM 47.41 MILES - FM190 - CONFLUENCE



Mal Toy

EMERGENCY ACTION PLAN

Middle Fork American River Project

FERC Project # 2079

**Placer County Water Agency
24625 Harrison Street
PO Box 667, Foresthill, CA 95631**

**California State Dam No.
1030 - 0 French Meadows (L.L.Anderson) Dam
1030 - 2 Hell Hole Dam
1030 - 4 Ralston Afterbay (Oxbow) Dam**

**(530) 885-6917
FAX (530) 367-4440
E-mail jmattson@pcwa.net**

51

Submitted: December 31, 2004

PLACER COUNTY WATER AGENCY

PLACER COUNTY WATER AGENCY
MIDDLE FORK AMERICAN RIVER PROJECT
EMERGENCY ACTION PLAN

TABLE OF CONTENTS

INSERT A - Key Points December 2004 EAP Revisions (4 pages)

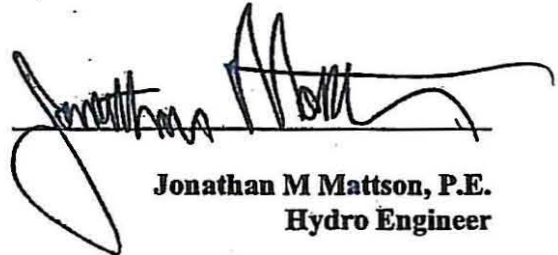
I	Notification Flowcharts	1
II.	Statement of Purpose.....	3
III.	Project Description	4
IV.	Emergency Detection, Evaluation, and Classification.....	7
	A. Emergency Detection	7
	B. Surveillance at Remotely Controlled or Unattended Dams.....	7
	C. Emergency Classifications.....	9
V.	General Responsibilities Under the EAP.....	11
	A. Licensee Responsibilities	11
	B. Responsibility for Notification (Narrative of Flow Charts).....	15
	1. French Meadows (L. L. Anderson) Dam CHART 1.A	15
	2. French Meadows Dam CHART 1.B.....	21
	3. French Meadows Dam CHART 1.C.....	25
	4. Hell Hole Dam CHART 2.A.....	26
	5. Hell Hole Dam CHART 2.B	30
	6. Hell Hole Dam CHART 2.C	34
	7. Ralston Afterbay (Oxbow) Dam CHART 3.A	35
	8. Ralston Afterbay Dam CHART 3.B	39
	9. Ralston Afterbay Dam CHART 3.C	43
	C. Responsibility for Evacuation.....	45
	D. Responsibility for Duration, Security, Termination and Follow-Up.....	45
	E. EAP Coordinator Responsibility.....	46
VI.	Preparedness	47
	A. Surveillance	47
	B. Response During Periods of Darkness	47
	C. Access to Site	48
	D. Response During Weekends and Holidays	50
	E. Response During Periods of Adverse Weather	50
	F. Alternative Systems of Communication.....	51
	G. Emergency Supplies and Information	54

POWER SYSTEM DIVISION

**Verification of Document
Middle Fork American River Project
Emergency Action Plan**

**State of California
County of Placer, ss:**

The undersigned, being first duly sworn, states that he has read the following document and knows the contents of it, and that all of the statements contained in that document are true and correct, to the best of his knowledge and belief.


**Jonathan M Mattson, P.E.
Hydro Engineer**

Sworn to and subscribed before me this 6th day of January, 2005.





SEAL

VII. Inundation Maps.....	59
----------------------------------	-----------

VIII. Appendices

A. Dambreak Analysis.....	
B. Plans for Training, Exercising, Updating, and Posting	
C. Site Specific Concerns.....	
D. Documentation	
E. Dam Inspection Guidelines	
F. Event Log Sheets	
G. Approval of the EAP.....	

II. Statement of Purpose

III. Project Description

IV. Emergency Detection, Evaluation, Classification

V. General Responsibilities Under the EAP

VI. Preparedness

VII. Inundation Maps

VIII. Appendices

INSERT A

KEY POINTS – DECEMBER 2004 EAP REVISION

- **Key Points – December 2004 EAP Revision**
- **Terms and Acronyms**
- **River Flow Data and Examples**

INSERT A

KEY POINTS – DECEMBER 2004 EAP REVISION

EAP Activation - When activating the EAP, initial calls to 911 Dispatch and other agencies by PCWA or PG&E must clearly state that the EAP has been activated, must clearly state the priority and possible consequences of the emergency, must direct the operator to locate the EAP, flowcharts and flood maps, must clearly state what call tree on the flowchart the operator is expected to use, and provide alternate emergency phone numbers for call backs. It is important that calls are brief and to the point, and that call lists are shared so calls can be made concurrently.

Quick Response - If the EAP is activated and requires immediate response, agencies listed on the EAP Flowcharts shall be directed to immediately send a representative within ½ hour to the Incident Command Post (ICP) at the Placer County Emergency Operations Center (EOC) in the DeWitt Center at 2968 Richardson Blvd. It is anticipated that after 911 Dispatch is called to activate the EAP, a Placer County Sheriff's Officer will become the initial Incident Commander (IC). Under the Unified Command, designation of the IC may change, based on the type of the emergency, jurisdictions, and experience.

Agency Representation - It is important that the Emergency Operations Center (EOC), Incident Command Post (ICP), and Operational Centers (OC) have sufficient representation from all agencies involved to make well informed decisions. Communication links are critical. Grouping together emergency response and resource agency radios that don't share frequencies helps to disseminate information between agencies. Designated Public Information Officers (PIO) need to be available at the EOC/ICP, OCs, and other important sites to deal with the public and media. Personnel involved in the emergency should direct the public and media to the PIOs.

Record Keeping - Record keeping during an emergency is an important function. A sufficient number of people shall be requested to act as scribes to document clearly all important events, communications, decisions, directions given, etc. Sample message log sheets are included in the EAP binder.

Inundation (Flood) Maps – The maps were updated, and clarifying comments were added.

Boundaries - The Middle Fork American River from Ralston Afterbay Dam (Oxbow Dam) to Folsom Reservoir is in the Auburn State Recreation Area. The river canyons upstream of the Oxbow area are in the Tahoe and Eldorado National Forests.

MOU Development - As a result of a meeting held on September 29, 2004, with various response agencies, it is anticipated that an MOU will be developed to help coordinate emergency response in events such as the accidental gate opening that occurred on the Middle Fork American River on August 5, 2004.

TERMS AND ACRONYMS

- **Confluence** – Where the North and Middle Forks of the American River come together, near Auburn, Highway 49, and the Foresthill Bridge.
- **Dam Failure** – a.k.a. Dam Break. In the context of the EAP, a dam failure is the dam washing away as fast as can be expected for that type of dam under extreme conditions
- **DSOD** – CA Division of Safety of Dams
- **Drum Switching Center** - a.k.a. PG&E Drum Powerhouse, which is manned 24 hours a day, and remotely controls operation of the MFARP powerhouses and reservoirs through the use of SCADA. The Drum Powerhouse operator notifies PCWA personnel of abnormal conditions such as station alarms, during off hours.
- **EAP**- Emergency Action Plan
- **FERC** - Federal Energy Regulatory Commission
- **Hydrograph** – In the context of the EAP, it is a graph showing when water will arrive, peak, and recede, and the quantity, at a given location on the river as a result of an upstream dam failure.
- **IC** - Incident Commander (SEMS)
- **ICP** - Incident Command Post (SEMS)
- **Inundation Map** – a.k.a. Flood Map – A map showing the geography of the river canyons, including roads, trails, communities, rivers, recreational areas, and the anticipated high water mark for floods resulting from a particular dam failure. The water flows, depths, and arrival times indicated on the maps are generally worst case scenarios.
- **L.L. Anderson Dam** - a.k.a. French Meadows Dam
- **Lowell J. Stephenson Powerplant** - a.k.a. Middle Fork Powerhouse and Interbay Powerplant
- **MFARP** - PCWA's Middle Fork of the American River Project, constructed in the mid 1960's, consisting of a system of dams, reservoirs, and powerhouses
- **Operational Center** – Remote location critical to the emergency where emergency response personnel will gather to coordinate their activities. The location may also be near an area where the public and media would congregate.
- **OES** - Office of Emergency Services
- **PCWA** - Placer County Water Agency
- **PIO** - Public Information Officer
- **PMF** – Probable Maximum Flood, an extreme flood calculated using established procedures, that may happen only once in a thousand years or more
- **Ralston Powerhouse** - Local control center for operation of the MFARP powerhouses and reservoirs through the use of SCADA, and is typically manned by PCWA during daytime working hours, 7 days a week
- **Ralston Afterbay Reservoir** - a.k.a. Oxbow Reservoir
- **SEMS** - Standardized Emergency Management System

RIVER FLOW DATA AND EXAMPLES

RIVER FLOWS – River flows are sometimes difficult to describe to the general public. Flows are usually measured in cubic feet per second (CFS), and sometimes gallons per minute (GPM) or acre-feet per day. One CFS = 450 GPM = 2 acre-feet per day.

FLOOD CHARACTERIZATION: Since the depth of water from a large release from one of the dams will lessen as the distance increases from the dam, PCWA employees may need to estimate the arrival times, depths, etc. at various critical locations along the river. What may be a "flood wave" at the tunnel chute, may be only a "surge of water" at the Confluence, and no effect at Rattlesnake Bar on Folsom Lake.

- **Gradual Rise:** At a given point on the river, river flows may have only a few feet increase in water level over a 15 minute to half hour period (specify estimated depth).
- **Surge of Water:** At a given point on the river, river flows may have an increase in water level of around 5' or so over a 15 minute to half hour period (specify estimated depth).
- **Flood Wave:** At a given point in the river, river flows may have an increase in water level of 5' to 20' or so over any period (maybe a partial failure of Ralston Afterbay Dam) (specify estimated depth).
- **Wall of Water:** This would characterize a partial to full failure of Hell Hole or French Meadows dams at about any point on the river (specify estimated depth).

REFERENCE FOR RIVER FLOWS:

- During the summer, daytime flows for rafting in the Middle Fork are usually about 1,000 cfs, with an average velocity probably around 5 mph, and depths of one or two feet above normal low water.
- The gates at Ralston Afterbay Dam are 40' wide. If they are fully open, and water 10' deep is flowing through the opening the flow equals about 5,000 cfs. If the water is 25' deep flowing through the 40' opening, the flow rate is about 20,000 cfs.
- In a worst case scenario, water flows in the canyon due an upper dam failure (Hell Hole) could be up to 200' feet deep, a velocity of 30 mph, and flow rates up to 5 million cfs.
- Since the river channel has a dampening effect on releases of water from any of the dams, a sudden large flow release at a dam, such as a dam gate being opened, will gradually lessen as it moves downstream, so that it may be just a surge or gradual increase in water level by the time it reaches a downstream point, such as at the Confluence. For instance, based on the August 5, 2004, accidental release of water from Ralston Afterbay, we found it took about 4 ½ hours for the increased flows to reach the Confluence. Releases from the dam may have exceeded 20,000 cubic feet per second (cfs) for a short time (water about 25' deep passing through a gate opening 40' wide). At a gaging station less than 2 miles

downstream, the maximum flow was less than 6,000 cfs (about 7' above the normal low water point in that section of river). The maximum water level increase at the Confluence, about 25 miles downstream of the dam was estimated to be about 2 or 3'. Average velocity of the water traveling down the river was about 6 mph.

- During a hypothetical failure or break of Ralston Afterbay Dam (223, 000 cfs) during fair weather conditions, water would take 3 ½ hours to reach the Confluence, or about 7.5 mph, and would increase river depth about 13' at the Confluence (27,000 cfs). In contrast, during a failure of the dam during a PMF, water would only take about 1 ¼ hours to reach the Confluence, at an average velocity of about 20 mph.

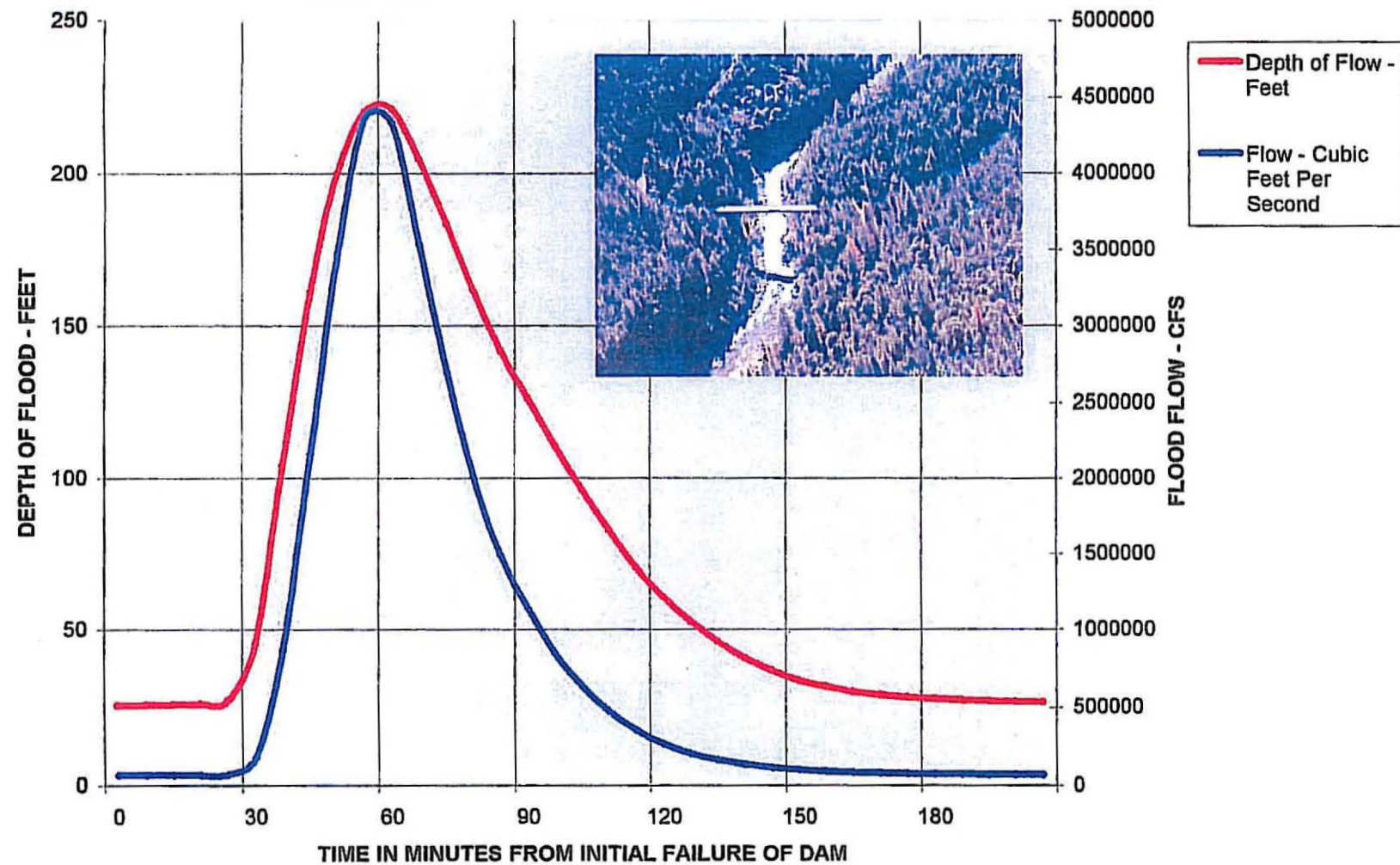
Table HH 1

**HELL HOLE DAM FAILURE
PMF CONDITIONS**

LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ^u (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
Hell Hole Dam	0.00	5,159,788	4,470.2	230.2	31.54	—	0.750	0.00
Immed. below Dam	0.30	5,127,151	4,443.0	223.0	39.80	217.4	0.750	0.08
	1.25	4,987,727	4,332.6	222.6	40.42	218.5	0.788	0.15
	2.26	4,907,092	4,265.3	205.3	42.21	200.4	0.788	0.19
	2.97	4,844,313	4,220.1	190.1	42.90	186.5	0.825	0.22
	4.12	4,793,481	4,138.0	178.0	40.31	173.7	0.825	0.26
	6.03	4,675,534	3,975.7	165.7	44.19	161.5	0.900	0.41
South Fork Rubicon	7.69	4,584,125	3,767.2	222.2	44.49	216.1	0.938	0.45
REACH TWO								
South Fork Rubicon	7.69	4,584,125	3,767.2	222.2	44.49	216.1	0.938	0.45
	8.58	4,526,225	3,630.0	230.0	45.72	224.2	0.938	0.47
Ellicott Foot Bridge Site	8.85	4,520,618	3,595.0	222.0	45.04	216.5	0.938	0.47
Hell Hole Rd Bridge	9.08	4,500,158	3,555.0	217.5	41.58	212.5	0.985	0.47
	9.45	4,492,493	3,525.5	205.5	37.32	200.7	0.985	0.47
	14.01	4,264,197	2,989.5	209.8	37.96	204.8	1.126	0.70
	19.58	4,016,858	2,414.3	214.3	38.86	208.8	1.313	0.94
	24.39	3,836,122	1,898.4	218.4	41.26	212.4	1.454	1.13
Nevada Pt. Trail Ft. Br.	24.89	3,821,607	1,806.0	231.4	41.09	224.9	1.501	1.17
Pennsyl. Pt. Br. Site	26.60	3,739,196	1,649.5	277.5	36.08	269.6	1.548	1.22
Ralston Powerplant	29.53	3,590,897	1,402.7	223.7	35.00	216.7	1.642	1.31
Ralston Afterbay Res.	30.01	3,573,771	1,351.5	197.5	39.54	172.5	1.680	1.31

^u Fair weather low water to PMF peak.

**HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 8.58 MILES - HH9 - NEAR ELLICOTT BRIDGE**



**HELL HOLE FAILURE PMF HYDROGRAPH
IMMEDIATELY BELOW HELL HOLE DAM - HH1**

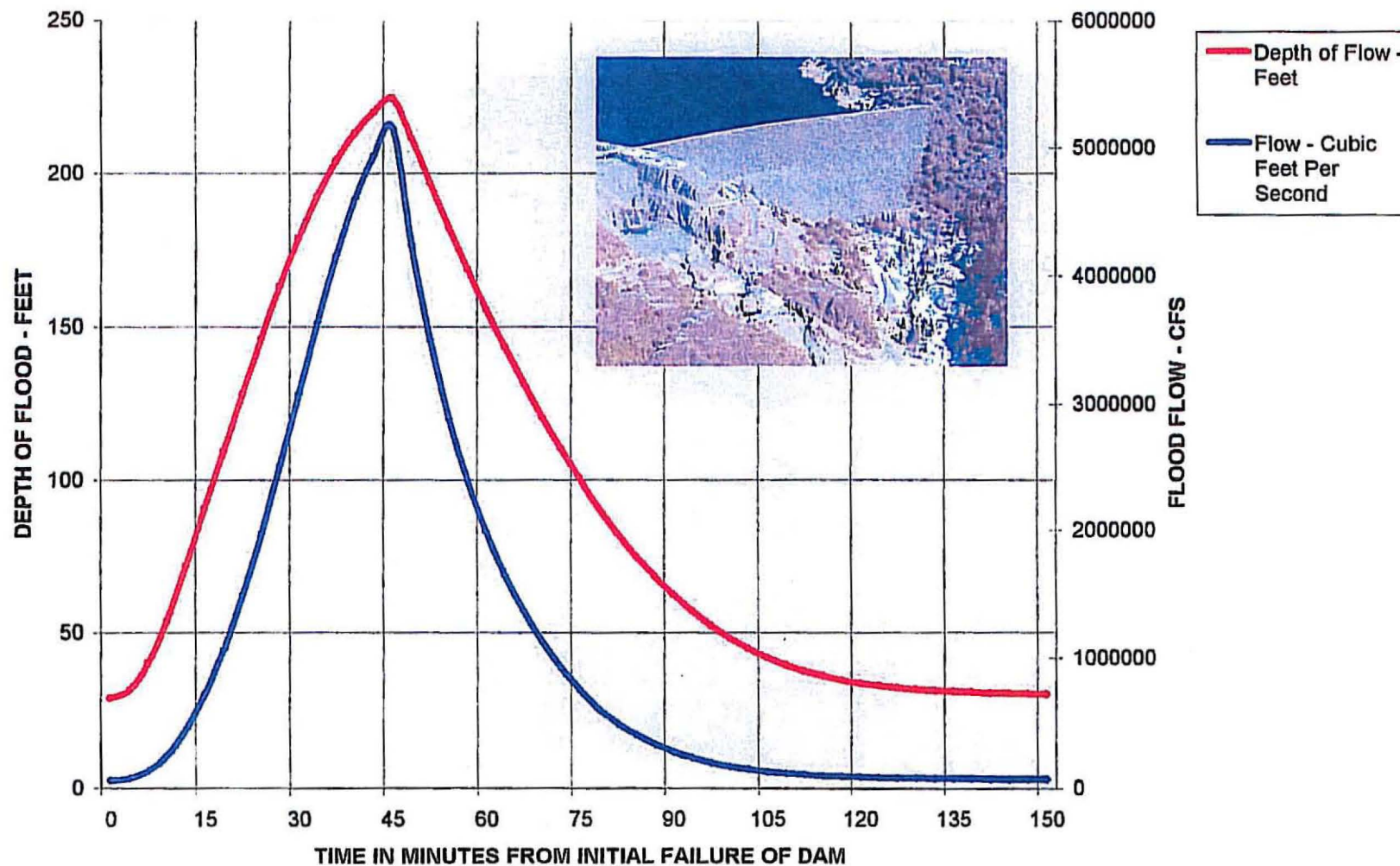


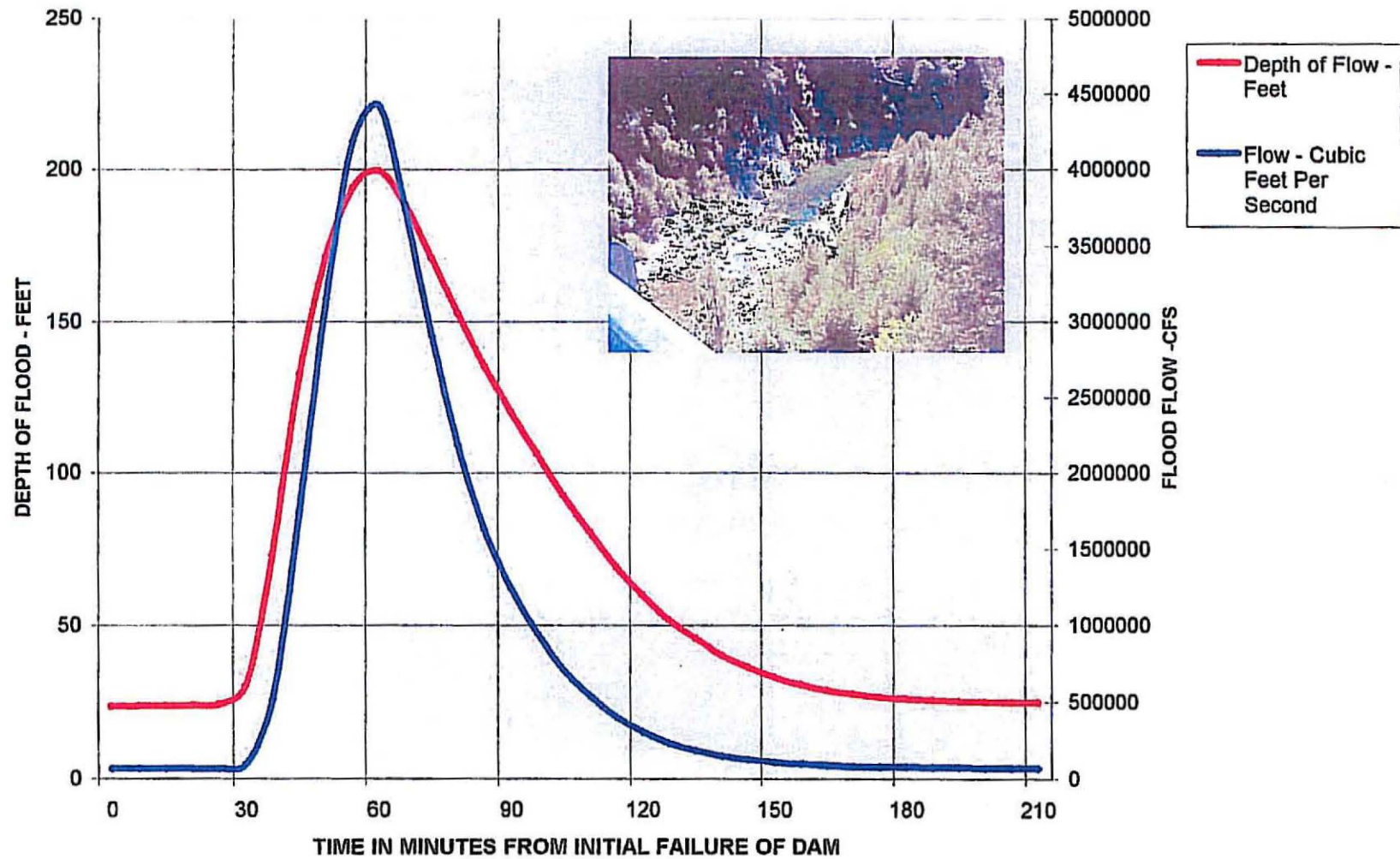
Table HH 1

**HELL HOLE DAM FAILURE
PMF CONDITIONS**

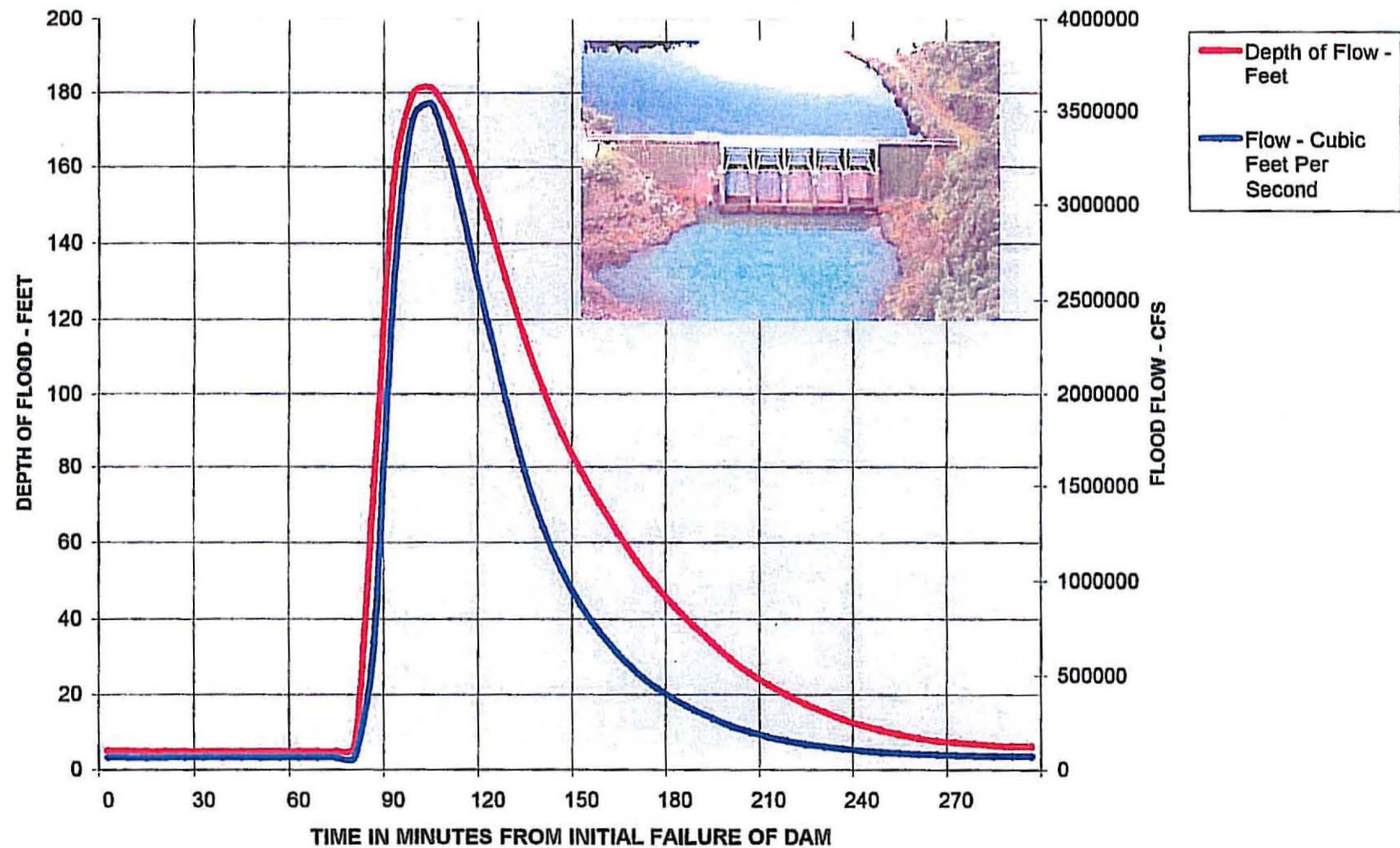
LOCATION	MILES FROM DAM	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FT)	PEAK STAGE (FT)	MAXIMUM VELOCITY (FT/SEC)	RISE ^{1/} (FT)	TIME TO PEAK STAGE (HRS)	TIME TO RISE (HRS)
REACH ONE								
Hell Hole Dam	0.00	5,159,788	4,470.2	230.2	31.54	—	0.750	0.00
Immed. below Dam	0.30	5,127,151	4,443.0	223.0	39.80	217.4	0.750	0.08
	1.25	4,987,727	4,332.6	222.6	40.42	218.5	0.788	0.15
	2.26	4,907,092	4,265.3	205.3	42.21	200.4	0.788	0.19
	2.97	4,844,313	4,220.1	190.1	42.90	186.5	0.825	0.22
	4.12	4,793,481	4,138.0	178.0	40.31	173.7	0.825	0.26
	6.03	4,675,534	3,975.7	165.7	44.19	161.5	0.900	0.41
South Fork Rubicon	7.69	4,584,125	3,767.2	222.2	44.49	216.1	0.938	0.45
REACH TWO								
South Fork Rubicon	7.69	4,584,125	3,767.2	222.2	44.49	216.1	0.938	0.45
	8.58	4,526,225	3,630.0	230.0	45.72	224.2	0.938	0.47
Ellicot Foot Bridge Site	8.85	4,520,618	3,595.0	222.0	45.04	216.5	0.938	0.47
Hell Hole Rd Bridge	9.08	4,500,158	3,555.0	217.5	41.58	212.5	0.985	0.47
	9.45	4,492,493	3,525.5	205.5	37.32	200.7	0.985	0.47
	14.01	4,264,197	2,989.5	209.8	37.96	204.8	1.126	0.70
	19.58	4,016,858	2,414.3	214.3	38.86	208.8	1.313	0.94
	24.39	3,836,122	1,898.4	218.4	41.26	212.4	1.454	1.13
Nevada Pt. Trail Ft. Br.	24.89	3,821,607	1,806.0	231.4	41.09	224.9	1.501	1.17
Pennsyl. Pt. Br. Site	26.60	3,739,196	1,649.5	277.5	36.08	269.6	1.548	1.22
Ralston Powerplant	29.53	3,590,897	1,402.7	223.7	35.00	216.7	1.642	1.31
Ralston Afterbay Res.	30.01	3,573,771	1,351.5	197.5	39.54	172.5	1.680	1.31

^{1/} Fair weather low water to PMF peak.

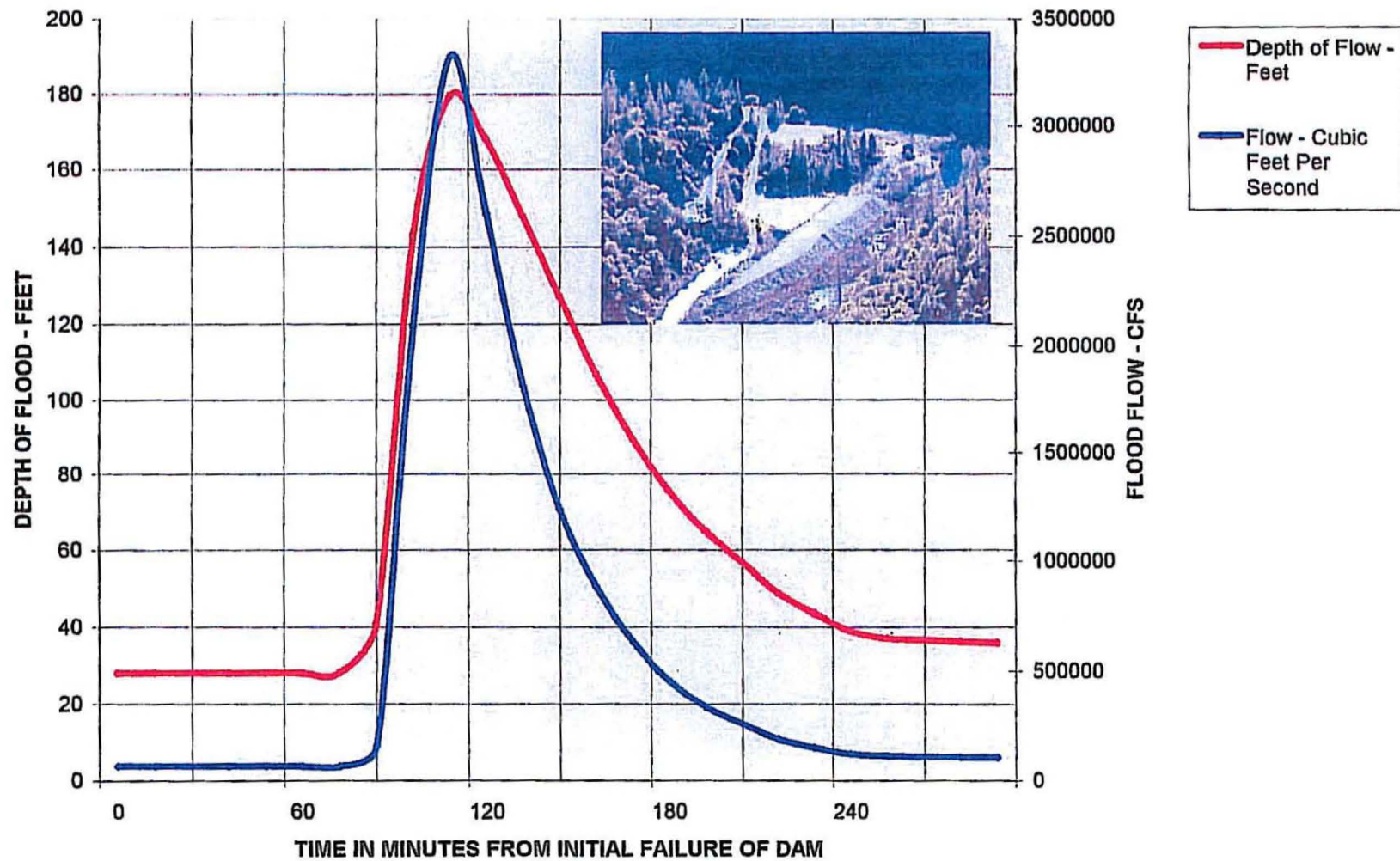
HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 9.45 MILES - HH11 - 1,800' D/S OF HELL HOLE RD BRIDGE



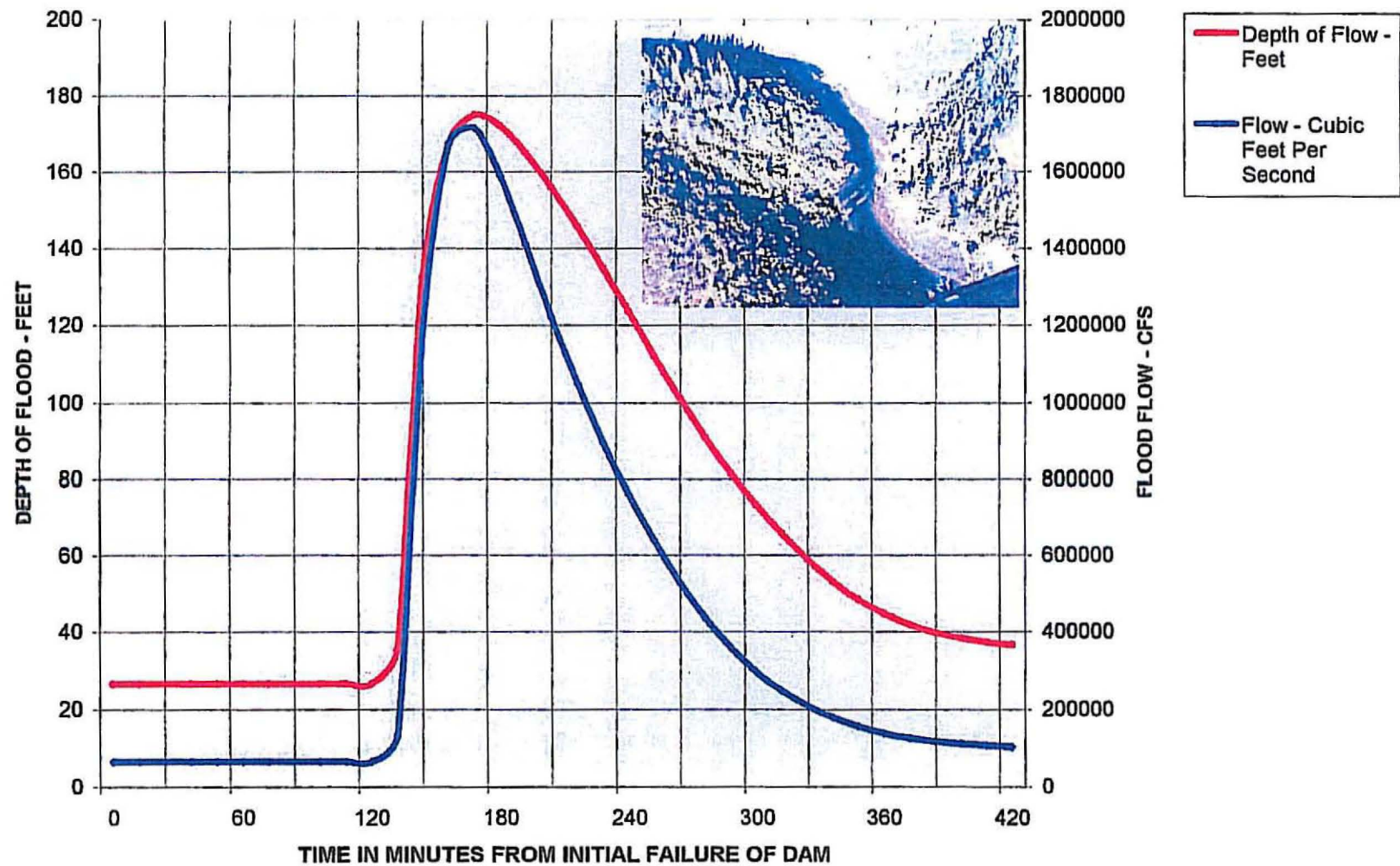
**HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 30.01 MILES - HH101 - RALSTON AFTERBAY**



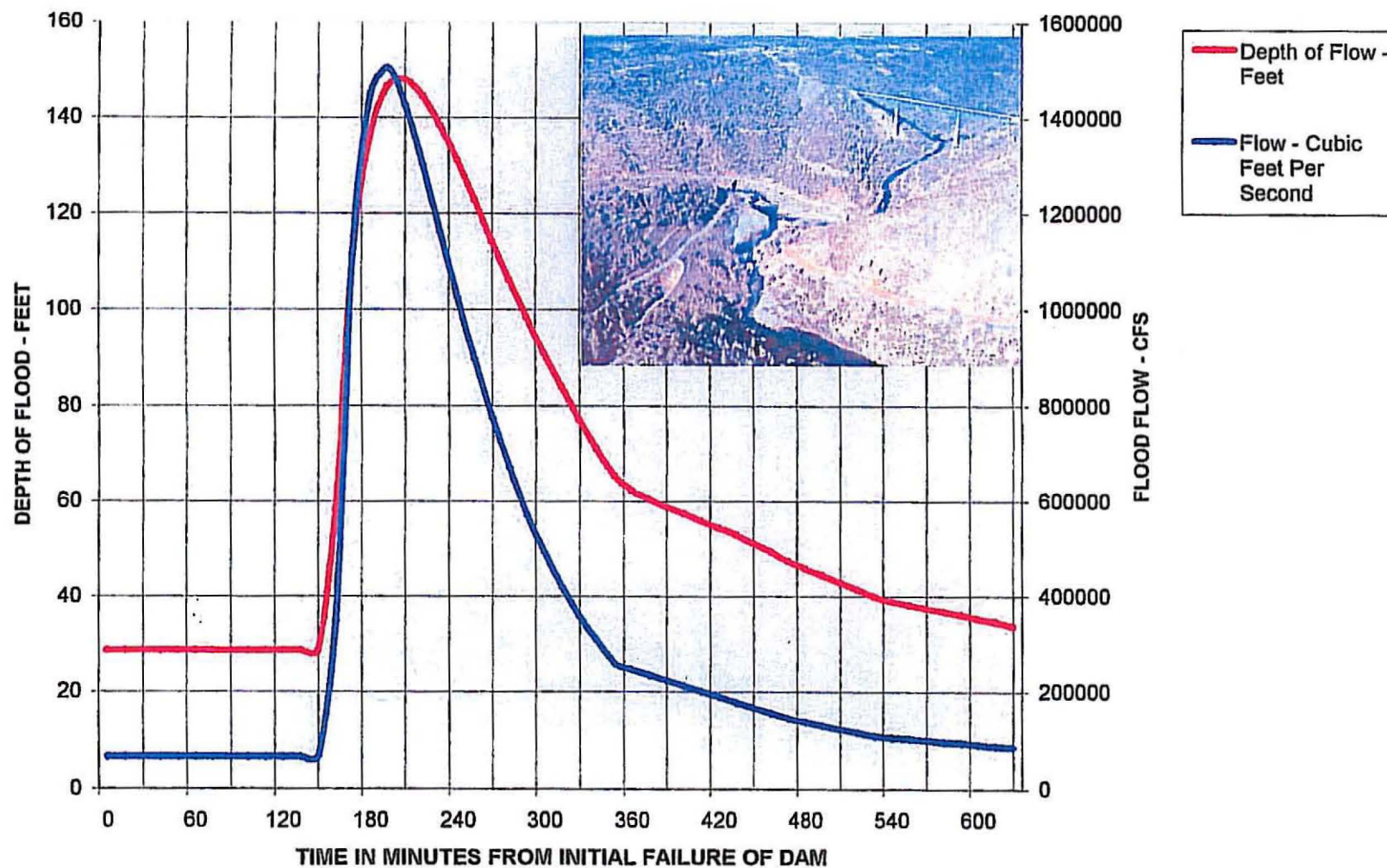
HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 31.38 MILES - HHR28 - D/S OF RALSTON AFTERBAY



**HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 46.30 MILES - HHR118 - RUCK-A-CHUCKY**



HELL HOLE FAILURE PMF HYDROGRAPH
BELOW HELL HOLE DAM 56.59 MILES - HHC1 - CONFLUENCE



I. Notification Flowcharts

I. Notification Flowcharts

The following flow charts for sequential notification of emergency response agencies, regulatory agencies, and the public are intended for the following emergency conditions. In an emergency, local officials will likely implement the Standardized Emergency Management System (SEMS). After initial notification calls to 911 are made by Placer County Water Agency (PCWA) or Pacific Gas & Electric Company (PG&E) employees, it is anticipated that the Placer County Sheriff's Office duty officer will initially assume the responsibility of Incident Commander (IC) in a Unified Command structure. The default location of the Incident Command Post (ICP) will be the Placer County Emergency Operations Center (EOC) in the DeWitt area of Auburn, unless another site is designated by the IC.

- | | | |
|----|---|----------------------|
| A. | French Meadows Dam (L.L. Anderson Dam)
Failure or Imminent Failure of Dam | FLOWCHART 1.A |
| B. | French Meadows Dam (L.L. Anderson Dam)
Potentially Hazardous Situation is Developing | FLOWCHART 1.B |
| C. | French Meadows Dam (L.L. Anderson Dam)
Non-Failure Emergency Condition | FLOWCHART 1.C |
| D. | Hell Hole Dam
Failure or Imminent Failure of Dam | FLOWCHART 2.A |
| E. | Hell Hole Dam
Potentially Hazardous Situation is Developing | FLOWCHART 2.B |
| F. | Hell Hole Dam
Non-Failure Emergency Condition | FLOWCHART 2.C |
| G. | Ralston Afterbay Dam (Oxbow Dam)
Failure or Imminent Failure of Dam | FLOWCHART 3.A |
| H. | Ralston Afterbay Dam (Oxbow Dam)
Potentially Hazardous Situation is Developing | FLOWCHART 3.B |
| I. | Ralston Afterbay Dam (Oxbow Dam)
Non-Failure Emergency Condition | FLOWCHART 3.C |

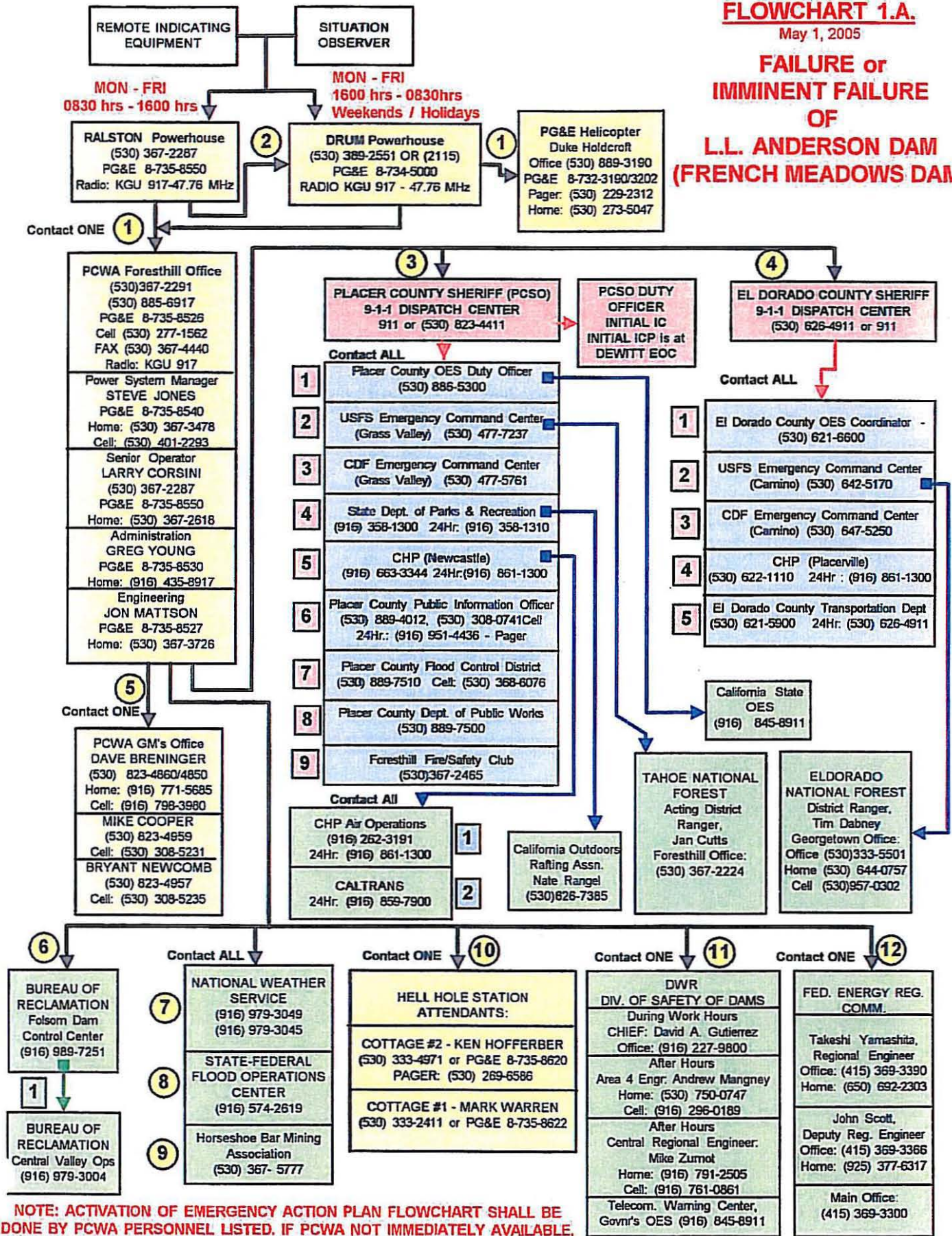
Under the "Non-Failure" scenario, discretion should be used when determining which agencies need to be notified, based on the level of the emergency. If the "Non-Failure" emergency involves a major oil spill, additional information on emergency response can be obtained from the Spill Prevention Control and Countermeasure (SPCC) plan for each PCWA powerhouse. Copies of all SPCC plans are located at PCWA's Foresthill headquarters, and at Ralston Powerhouse.

Note: Not included in the Flow Charts are the names and phone numbers of dam safety-related consultants, potential construction contractors, and equipment rental companies that might be called in an emergency. Their names and phone numbers can be found in the following locations:

- A. **Dam Safety Consultants - See Division V, Section B, paragraph 1.c.**
- B. **Construction Contractors - See Division VI, Section G, paragraph 1.**
- C. **Equipment Rental Companies - See Division VI, Section G, paragraph 1.**

FLOWCHART 1.A.

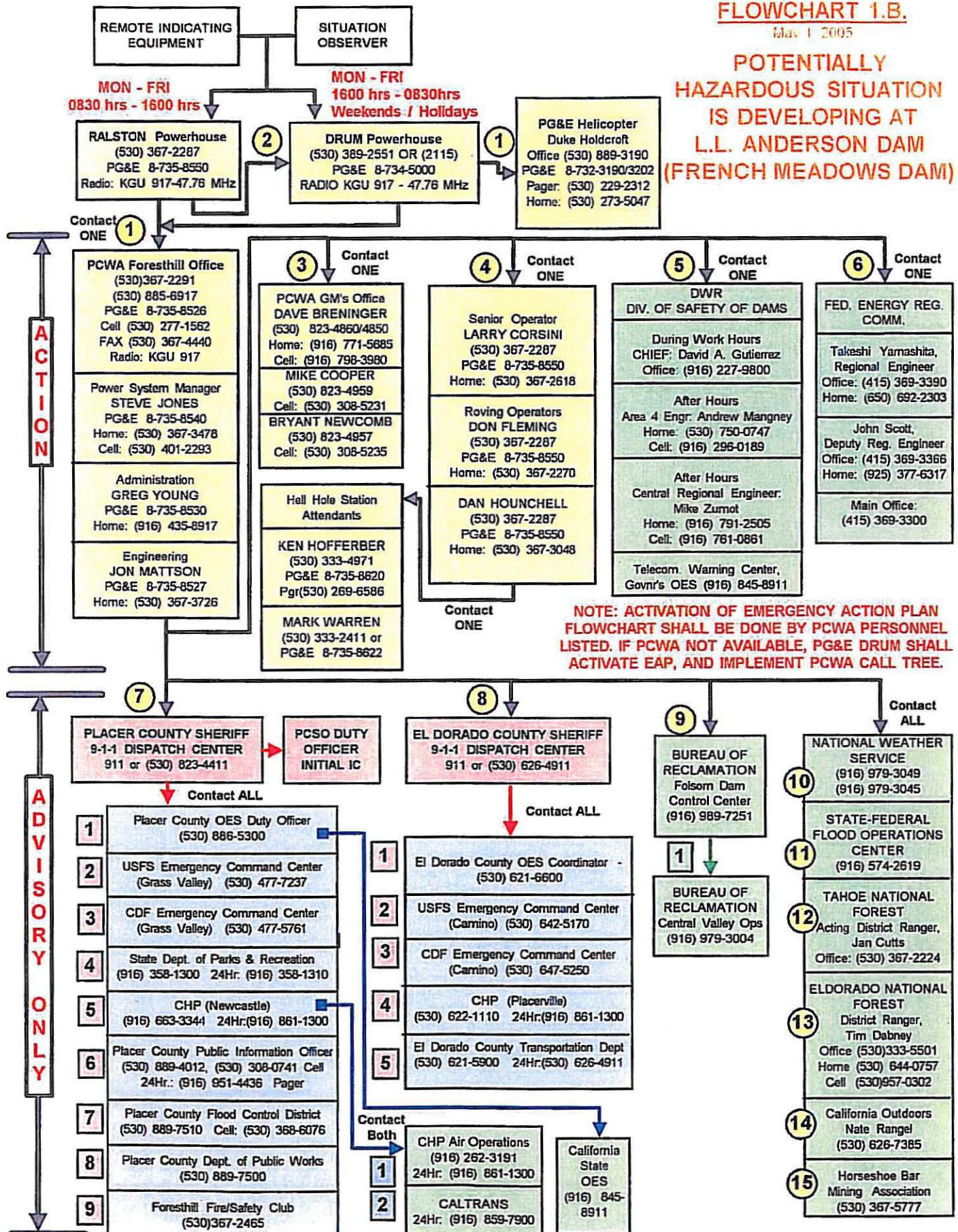
May 1, 2005

**FAILURE or
IMMINENT FAILURE
OF
L.L. ANDERSON DAM
(FRENCH MEADOWS DAM)**

FLOWCHART 1.B.

May 1 2005

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
L.L. ANDERSON DAM
(FRENCH MEADOWS DAM)**

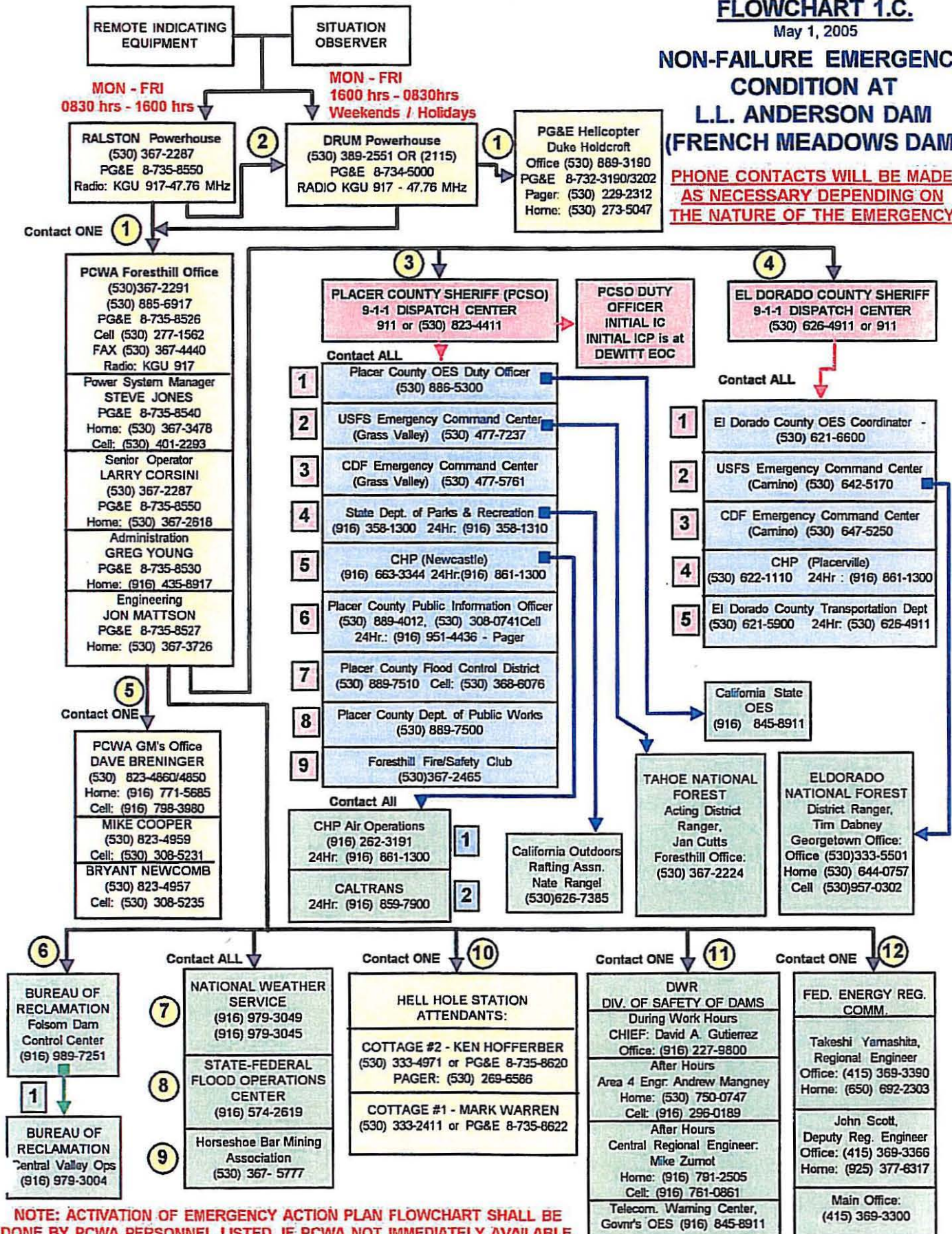


FLOWCHART 1.C.

May 1, 2005

NON-FAILURE EMERGENCY CONDITION AT L.L. ANDERSON DAM (FRENCH MEADOWS DAM)

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**

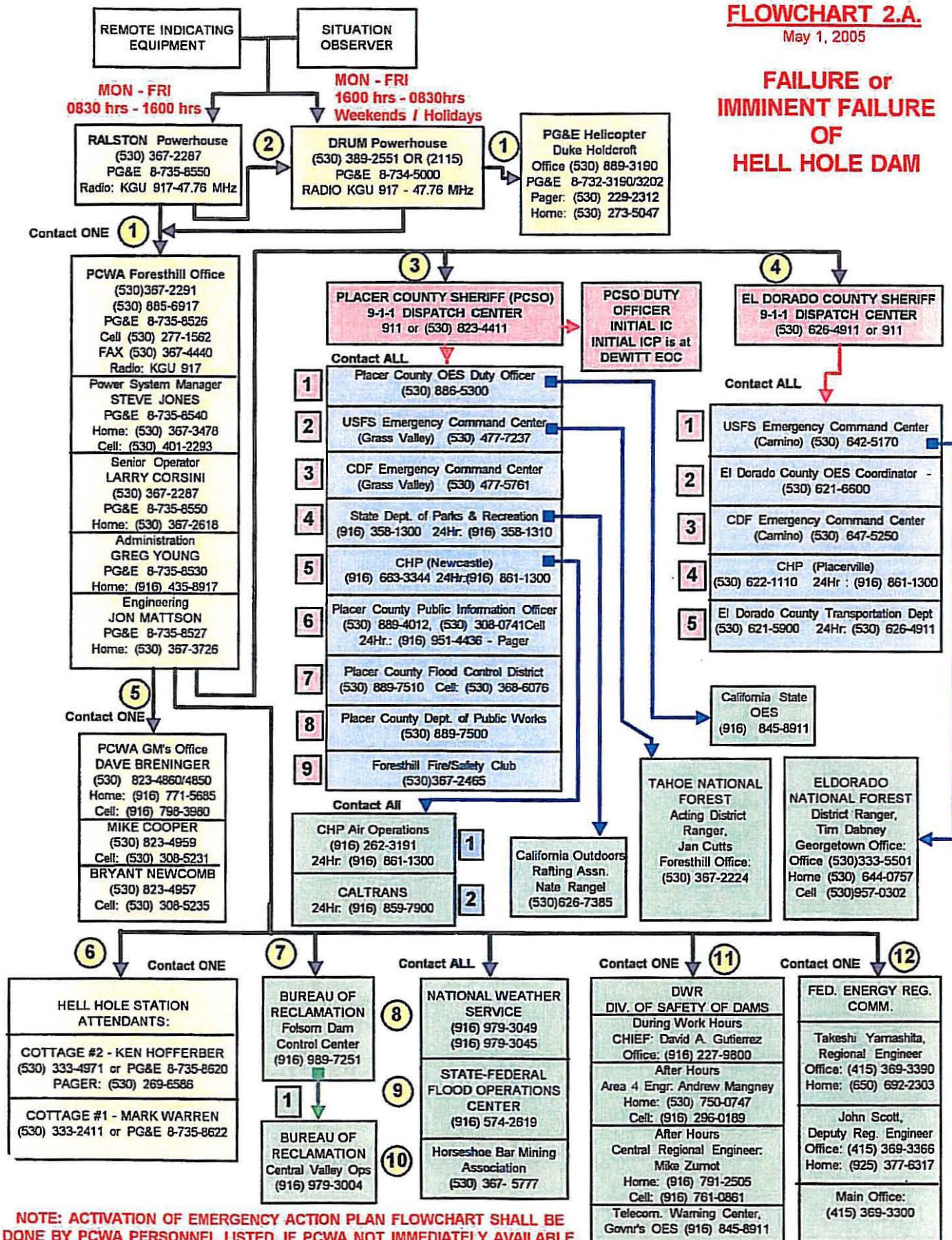


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 2.A.

May 1, 2005

FAILURE or IMMINENT FAILURE OF HELL HOLE DAM



NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

May 1 2005

FLOWCHART 2.B.
May 1 2005

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
HELL HOLE DAM**

REMOTE INDICATING EQUIPMENT
MON - FRI 0830 hrs - 1600 hrs

SITUATION OBSERVER
MON - FRI 1600 hrs - 0830hrs
Weekends / Holidays

RALSTON Powerhouse
(530) 367-2287
PG&E 8-735-8550
Radio: KGU 917-47.76 MHz

DRUM Powerhouse
(530) 389-2551 OR (2115)
PG&E 8-734-5000
RADIO KGU 917 - 47.76 MHz

PG&E Helicopter
Duke Holdcroft
Office (530) 889-3190
PG&E 8-732-3190/3202
Pager: (530) 229-2312
Home: (530) 273-5047

PCWA Foresthill Office
(530) 367-2291
(530) 885-6917
PG&E 8-735-8526
Cell (530) 277-1562
FAX (530) 367-4440
Radio: KGU 917

Power System Manager
STEVE JONES
PG&E 8-735-8540
Home: (530) 367-3478
Cell: (530) 401-2293

Administration
GREG YOUNG
PG&E 8-735-8530
Home: (916) 435-8917

Engineering
JON MATTSON
PG&E 8-735-8527
Home: (530) 367-3726

PCWA GM's Office
DAVE BRENINGER
(530) 823-4860/4850
Home: (916) 771-5685
Cell: (916) 798-3980
MIKE COOPER
(530) 823-4959
Cell: (530) 308-5231
BRYANT NEWCOMB
(530) 823-4957
Cell: (530) 308-5235

Hell Hole Station Attendants
KEN HOFFERBER
(530) 333-4971
PG&E 8-735-8620
Pgr(530) 269-6586
MARK WARREN
(530) 333-2411 or
PG&E 8-735-8622

Senior Operator
LARRY CORSINI
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-2618

Roving Operators
DON FLEMING
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-2270

DAN HOUNCHELL
(530) 367-2287
PG&E 8-735-8550
Home: (530) 367-3048

DWR
DIV. OF SAFETY OF DAMS

During Work Hours
CHIEF: David A. Gutierrez
Office: (916) 227-9800

After Hours
Area 4 Engr. Andrew Mangney
Home: (530) 750-0747
Cell: (916) 296-0189

After Hours
Central Regional Engineer:
Mike Zumot
Home: (916) 791-2505
Cell: (916) 761-0861

Telecom. Warning Center,
Govnr's OES (916) 845-8911

FED. ENERGY REG. COMM.
Takeshi Yamashita,
Regional Engineer
Office: (415) 369-3390
Home: (650) 692-2303
John Scott,
Deputy Reg. Engineer
Office: (415) 369-3366
Home: (925) 377-6317
Main Office:
(415) 369-3300

NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, AND IMPLEMENT PCWA CALL TREE.

PLACER COUNTY SHERIFF
9-1-1 DISPATCH CENTER
911 or (530) 823-4411

PCSO DUTY OFFICER
INITIAL IC

EL DORADO COUNTY SHERIFF
9-1-1 DISPATCH CENTER
911 or (530) 626-4911

BUREAU OF RECLAMATION
Folsom Dam Control Center
(916) 989-7251

NATIONAL WEATHER SERVICE
(916) 979-3049
(916) 979-3045

STATE-FEDERAL FLOOD OPERATIONS CENTER
(916) 574-2619

TAHOE NATIONAL FOREST
Acting District Ranger,
Jan Cutts
Office: (530) 367-2224

ELDORADO NATIONAL FOREST
District Ranger,
Tim Dabney
Office (530) 333-5501
Home (530) 644-0757
Cell (530) 957-0302

California Outdoors
Nate Rangel
(530) 626-7385

Horseshoe Bar Mining Association
(530) 367-5777

Placer County OES Duty Officer
(530) 886-5300

USFS Emergency Command Center (Grass Valley)
(530) 477-7237

CDF Emergency Command Center (Grass Valley)
(530) 477-5761

State Dept. of Parks & Recreation
(916) 358-1300 24Hr: (916) 358-1310

CHP (Newcastle)
(916) 663-3344 24Hr: (916) 861-1300

Placer County Public Information Officer
(530) 889-4012, (530) 308-0741 Cell
24Hr.: (916) 951-4436 Pager

Placer County Flood Control District
(530) 889-7510 Cell: (530) 368-6076

Placer County Dept. of Public Works
(530) 889-7500

Foresthill Fire/Safety Club
(530) 367-2465

El Dorado County OES Coordinator
(530) 621-6600

USFS Emergency Command Center (Camino)
(530) 642-5170

CDF Emergency Command Center (Camino)
(530) 647-5250

CHP (Placerville)
(530) 622-1110 24Hr: (916) 861-1300

El Dorado County Transportation Dept
(530) 621-5900 24Hr: (530) 626-4911

CHP Air Operations
(916) 262-3191
24Hr: (916) 861-1300

CALTRANS
24Hr: (916) 859-7900

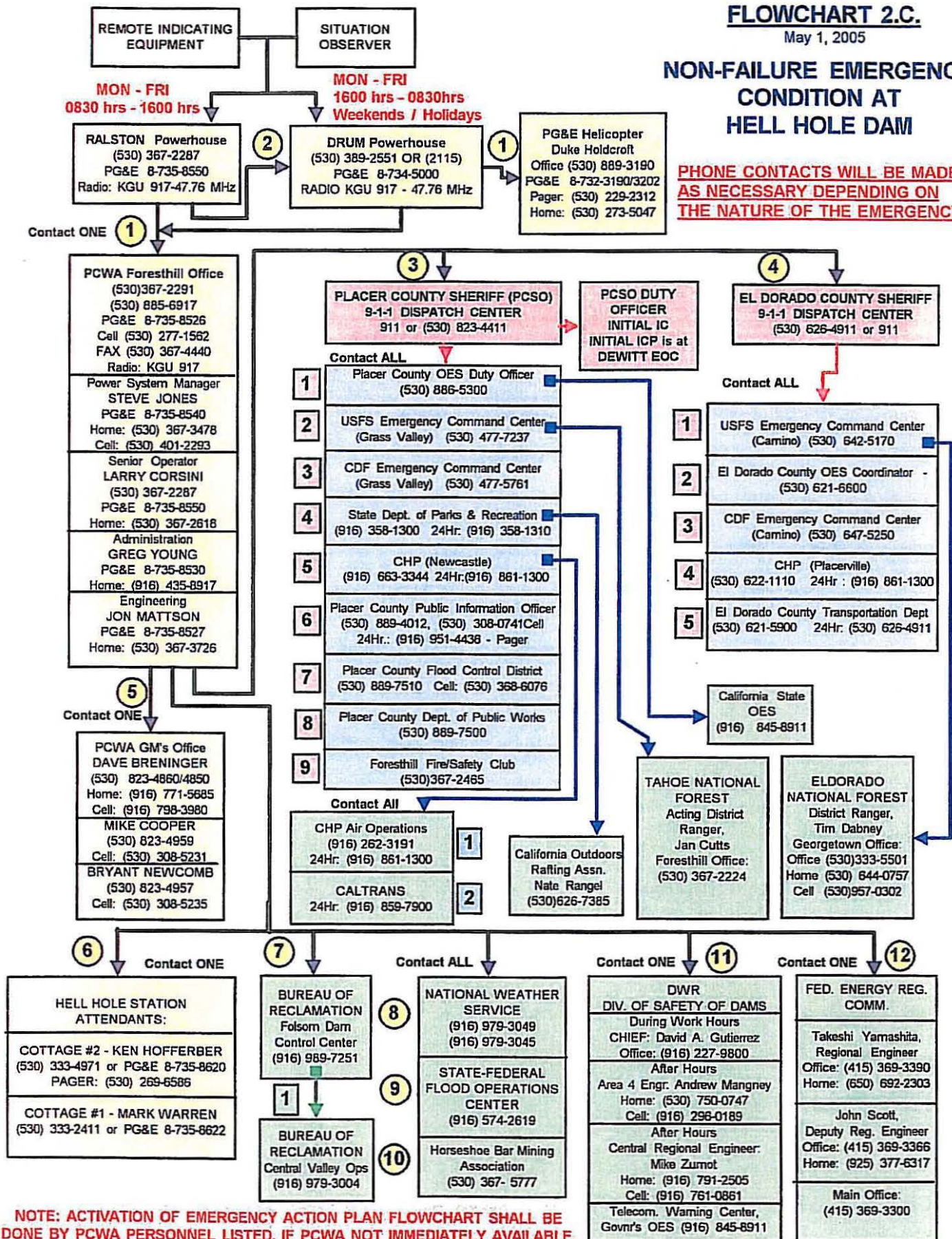
California State OES
(916) 845-8911

FLOWCHART 2.C.

May 1, 2005

NON-FAILURE EMERGENCY CONDITION AT HELL HOLE DAM

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**

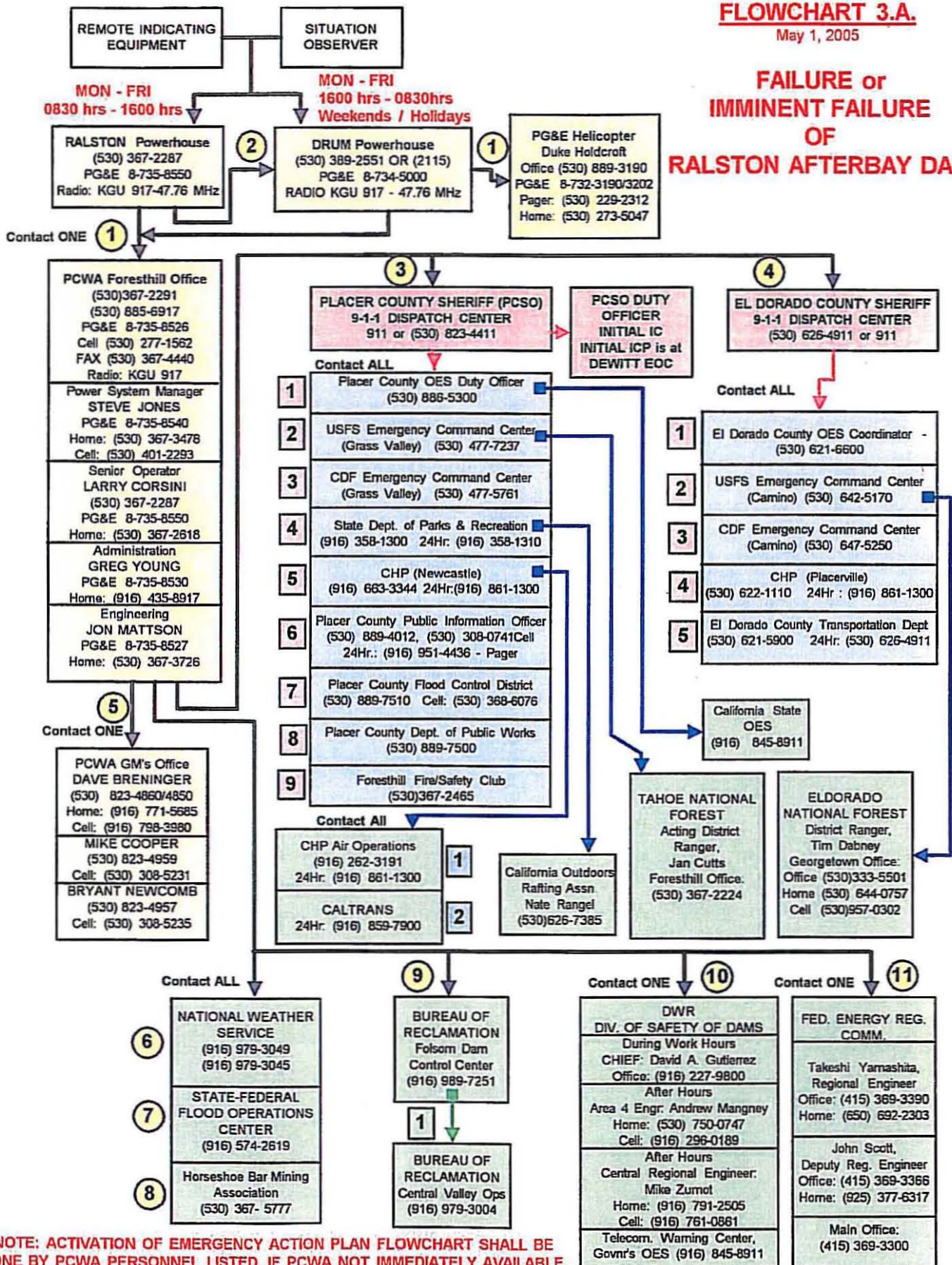


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.A.

May 1, 2005

FAILURE or IMMINENT FAILURE OF RALSTON AFTERBAY DAM

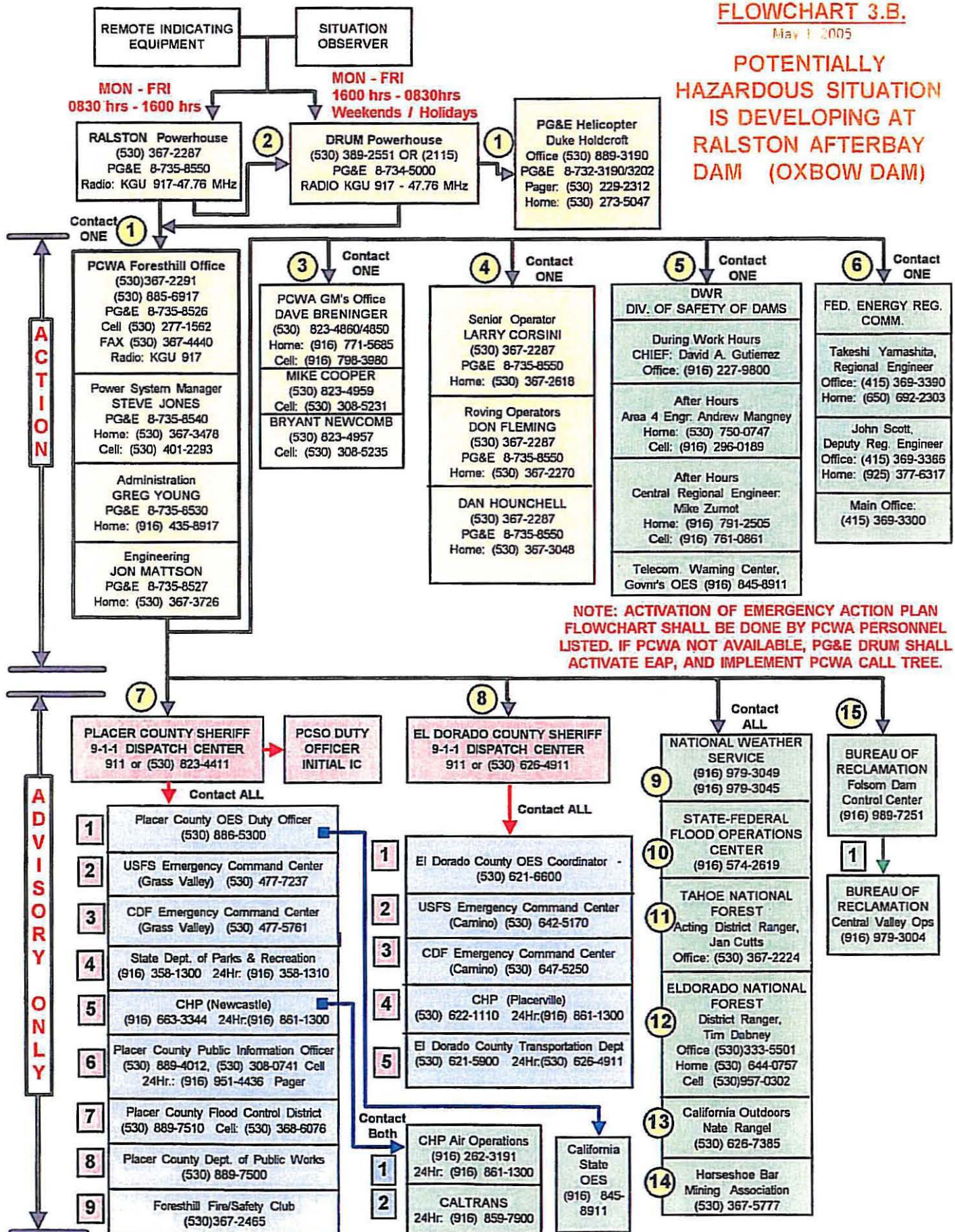


NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.B.

May 1, 2005

**POTENTIALLY
HAZARDOUS SITUATION
IS DEVELOPING AT
RALSTON AFTERBAY
DAM (OXBOW DAM)**



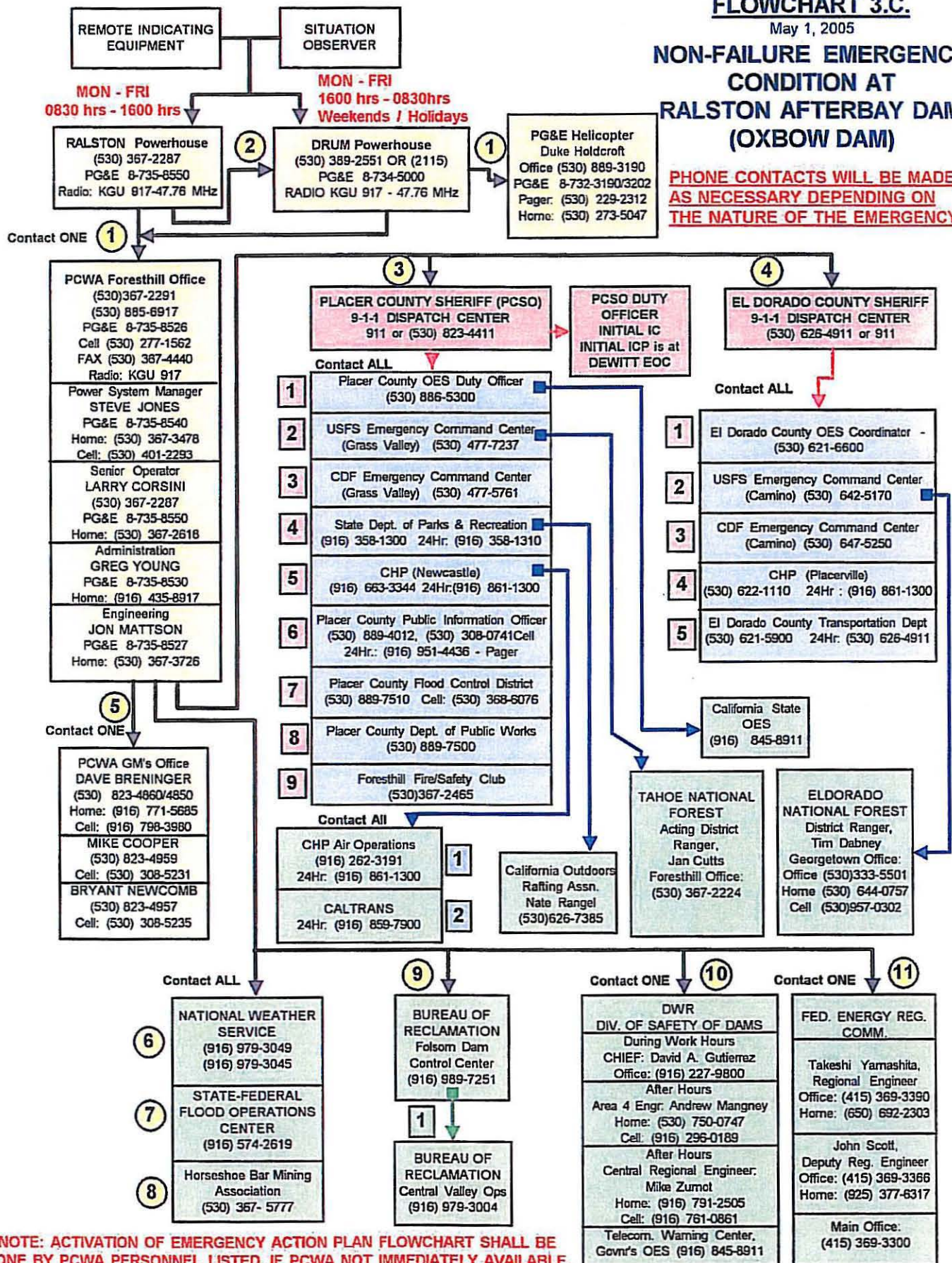
NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, AND IMPLEMENT PCWA CALL TREE.

FLOWCHART 3.C.

May 1, 2005

NON-FAILURE EMERGENCY CONDITION AT RALSTON AFTERBAY DAM (OXBOW DAM)

**PHONE CONTACTS WILL BE MADE
AS NECESSARY DEPENDING ON
THE NATURE OF THE EMERGENCY**



NOTE: ACTIVATION OF EMERGENCY ACTION PLAN FLOWCHART SHALL BE DONE BY PCWA PERSONNEL LISTED. IF PCWA NOT IMMEDIATELY AVAILABLE, PG&E DRUM SHALL ACTIVATE EAP, CALL 911 & IMPLEMENT PCWA CALL TREE.

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

**DIVISION OF SAFETY OF DAMS****- NOTICE -****EMERGENCY PROCEDURES**

**RALSTON AFTERBAY DAM, NO. 1030-4
PLACER COUNTY**

Section 6101 of Division 3 of the California Water Code requires owners of dams or reservoirs or their agents to advise the Department of Water Resources fully and promptly of any sudden or unprecedented flood or unusual or alarming circumstance or occurrence affecting the dam or reservoir.

In the event of an emergency involving your dam or reservoir (in addition to notifying local authorities) please notify the following:

1. During Working Hours:

Frederick J. Sage
Field Engineering Branch Chief
Division of Safety of Dams
2200 "X" Street, Suite 200
Sacramento, CA 95818
(916) 227-4667

2. After Working Hours and on Weekends and Holidays:

Area 4 Engineer:

Andrew J. Mangney
(530) 750-0747

If the engineer is not reachable, contact:

Central Regional Engineer:

Mike I. Zumot
(916) 791-2505
Pager (916) 948-0323

- 3. If neither the Area Engineer nor the Regional Engineer can be reached, please call the Governor's Office of Emergency Services Warning Center at (916) 845-8911.**

THIS NOTICE MUST BE KEPT IN A CONVENIENT PLACE (Preferably near the telephone to be used in case of emergency at or near the dam site).

II. Statement of Purpose

II. Statement of Purpose

A. The purpose of this Emergency Action Plan (EAP) is:

1. to provide early warning to downstream recreational users, dam operators, and other persons in the vicinity of the Middle Fork of the American River Canyon and Folsom Lake who might be affected by an impending or actual sudden release of water from Placer County Water Agency's (PCWA) dams at Hell Hole, French Meadows (L.L. Anderson), or Ralston Afterbay
2. to minimize property and environmental damage in these areas

B. This purpose can be accomplished by:

1. appropriate maintenance, operation, and inspection of the dams and related facilities
2. early warning of developing emergency conditions
3. evaluation of the emergency situation and making correct operational responses
4. timely notification to emergency response agencies and individuals in remote locations

C. Emergency response to flood conditions in the Middle Fork of the American River from Folsom Dam to the floodplain beyond is the responsibility of the operators of Folsom Dam, the U.S. Bureau of Reclamation

III. Project Description

III. Project Description

Each EAP provided to all recipients contains all flowcharts, text, drawings, and information listed in the Table of Contents, with the exception of the Dambreak Analysis by Sierra Hydrotech (Appendix 8), which is available upon request to PCWA. Inundation maps in Division VII are also available in electronic format, if needed, upon request to PCWA. Since this EAP may contain sensitive information, each recipient shall ensure that the information contained in this EAP is not distributed.

Placer County Water Agency's (PCWA) Middle Fork American River Project (FERC License No. 2079) includes three major dams and four smaller diversion structures. Maps of these facilities are shown in FIGURE 1 and FIGURE 2. FIGURE 3 is a listing of latitudes and longitudes for key project facilities. Physical details of project facilities are described below, and in the project brochure in Division VIII, Appendix D.

A. French Meadows Dam (L. L. Anderson Dam)

This is a composite type of dam, consisting of gravel and earthfill material. It impounds a maximum of 134,993 acre feet of water at elevation 5262.0, with the spill gates closed. The dam lies within a fairly remote area on the upper reaches of the Middle Fork of the American River. The spillway consists of a gated ogee crest and has two 20' x 18.5' radial gates which are electrically operated. The operating power is provided by a propane fired engine generator housed in a concrete block building at the site.

Height - 231 feet

Capacity - 134,993 acre-feet, at Maximum Operating Water Surface El. 5262 feet

Type - Composite gravel and earthfill

Crest Length - 2,700 feet Crest Width - 32 feet

Elevation of Crest - 5271 feet

Spillway Type - Gated ogee crest, with 2 radial gates, each 20' x 18.5'

Spillway Capacity - 19,200 cubic feet per second, @ water surface 5271 feet

Spillway Elevation @ Crest - 5244.5 feet

B. Hell Hole Dam

This is a rock fill dam with an impervious earth core, located on the upper reaches of the Rubicon River. Its height is 410 feet above streambed, and it impounds a maximum of 207,590 acre-feet of water at elevation 4630.0, which is the elevation of the spillway crest. The spillway is an uncontrolled type with no spill gates, and therefore does not require a power source for spill operations.

Height - 410 feet

Capacity - 207,590 acre-feet, at Maximum Operating Water Surface El. 4630'

Type - Rockfill with impervious earth core

Crest Length - 1,570 feet Elevation of Crest - 4,650 feet
Spillway Type - Uncontrolled, right abutment, 350 feet in width
Spillway Capacity - 85,800 cubic feet per second @ water surface 4647
Spillway Elevation @ Crest - 4,630 feet

C. Ralston Afterbay Dam (Oxbow Dam)

This is a concrete gravity dam. It is located just below the confluence of the Rubicon River and the Middle Fork of the American River. The dam height is 89 feet above the streambed, and it impounds a maximum of 2,782 acre-feet at elevation 1179.0 with the spill gates closed. The spillway consists of a gated ogee crest and has five 30' x 40' radial gates. This reservoir is normally operated with the spillway gates closed and the operating water level elevation ranging between 1175.0 to 1176.5 feet. The gates are normally operated on float control with the first opening set for elevation 1176.52 feet.

The operating power supply for the spillway gates is provided from a short length of power line which originates at PCWA's Oxbow Powerhouse, or backup generator.

Height - 89 feet
Capacity - 2,782 acre-feet
Type - Concrete Gravity
Crest Length - 560 feet
Elevation @ Crest - 1,189 feet
Spillway Type - Gated ogee crest, with 5 radial gates, each 30' x 40'
Spillway Capacity - 175,000 cubic feet per second @ water surface 1188
Spillway Elevation @ Crest - 1,149 feet

D. Duncan Creek Diversion Dam

Height - 32 feet
Capacity - 20 acre-feet
Type - Concrete gravity

E. North Fork Long Canyon Diversion Dam

Height - 10 feet
Capacity - N/A
Type - Concrete gravity

F. South Fork Long Canyon Diversion Dam

Height - 27 feet
Capacity - N/A
Type - Concrete gravity

G. Interbay Diversion Dam

Height - 70.5 feet
Capacity - 175 acre-feet
Type - Concrete gravity

The four diversion dams, D - G above, have not been considered in the Emergency Action Plan, since they do not constitute any appreciable flooding risk of themselves, or cumulative: i.e. with upstream failure of French Meadows Dam in the case of Interbay Diversion Dam. Therefore, these structures are considered to be outside the scope of this plan.

H. Other Project Features

There are canyons above and below PCWA's facilities that are extremely deep with rugged terrain, with limited road access. Please refer to the General Vicinity Maps in this Division III, figures 1 and 2, and the Inundation Maps in Division VII for more details.

Associated with the PCWA dams are several tunnels, penstocks, and powerhouses. These facilities are described generally in the pamphlet "Middle Fork American River Development", which is included in Division VIII, Appendix D, Documentation.

A complete set of project drawings is kept at PCWA's Foresthill Headquarters in the print room. Each drawer is labeled, and has its own drawing index. Project Inundation Maps are also available at the Foresthill Headquarters, in litho size and full size, and in electronic jpeg or tiff file formats.

I. SMUD and Bureau Dams

The only dams upstream of PCWA's dams are on, or feed into, the Rubicon River, and belong to the Sacramento Municipal Utility District (SMUD). Rubicon and Buck Island reservoirs are both less than 1,500 acre-feet, and feed into Hell Hole Reservoir. Loon Lake and Gerle reservoirs feed into the Rubicon River below Hell Hole. Gerle Reservoir is 1,200 acre-feet, and Loon Lake is 76,200 acre-feet. Most water from SMUD's reservoirs in the Rubicon basin is diverted to the South Fork of the American River under normal conditions.

There are only two dams located downstream of PCWA facilities, Folsom and Nimbus dams, which are both owned and operated by the U.S. Bureau of Reclamation. Folsom Dam is approximately 47 miles downstream of Ralston Afterbay Dam, and the reservoir behind Folsom Dam has a capacity of 977,000

acre-feet. Nimbus Dam is a small flow regulating dam located about 5 miles downstream of Folsom Dam.

Upstream of Folsom and Nimbus dams, there is relatively little effect on established communities as a result of a failure of one of PCWA's dams. The Sacramento metropolitan area downstream of Folsom and Nimbus dams, however, could be significantly affected by failure of either the French Meadows or Hell Hole dams, depending on available storage in Folsom Reservoir, weather and runoff conditions, etc. Effects could range from increased releases into the American River at Folsom, requiring notification of people along the river, to, in worst case, flood releases at the dam, with the potential of damaging the levee system and flooding downstream communities.

J. Site Specific Concerns related to dam failure (See also Appendix 8.C)

If a failure of any of the dams covered in this EAP were to occur, the most critical time periods for a failure would probably be as follows, starting with the most critical first:

- a. Late spring and early summer, when snowpacks are still high, and when use of the river canyons for rafting, mining, hiking, boating, and camping is heavy, and Folsom Lake is likely to be near maximum levels. If failure of the dam were to occur, spill gate releases through Folsom could impact downstream property and lives.
- b. During extreme winter storms like the "pineapple express", when flood releases at the dams are already near maximum levels, particularly downstream of Folsom Lake, where huge impacts to property and lives are at stake. Since use of the river canyons would be very low at this time, impacts to lives upstream of Folsom Dam would be more limited, and emergency response agencies would already be on a high state of alert.
- c. Later in the summer, though use of the river canyons is still high, Folsom Lake would normally be lower, thus having more reserve storage capacity, and likely could absorb the volume of French Meadows or Hell Hole reservoirs, without having to release large volumes of water through the spill gates.
- d. During fall and winter, when recreation in the river canyons is minimum, and reservoir reserve storage capacity is maximum.