EMERGENCY ACTION PLAN

YUBA RIVER DEVELOPMENT PROJECT

FERC PROJECT NO. 2246

NEW BULLARDS BAR DAM No. CA00863
OUR HOUSE DAM No. CA00864
LOG CABIN DAM No. CA00865

Yuba County Water Agency
1220 F Street
Marysville, CA 95901-4226

Complete Revision December 7, 2006
Revised Notification Charts December 4, 2008

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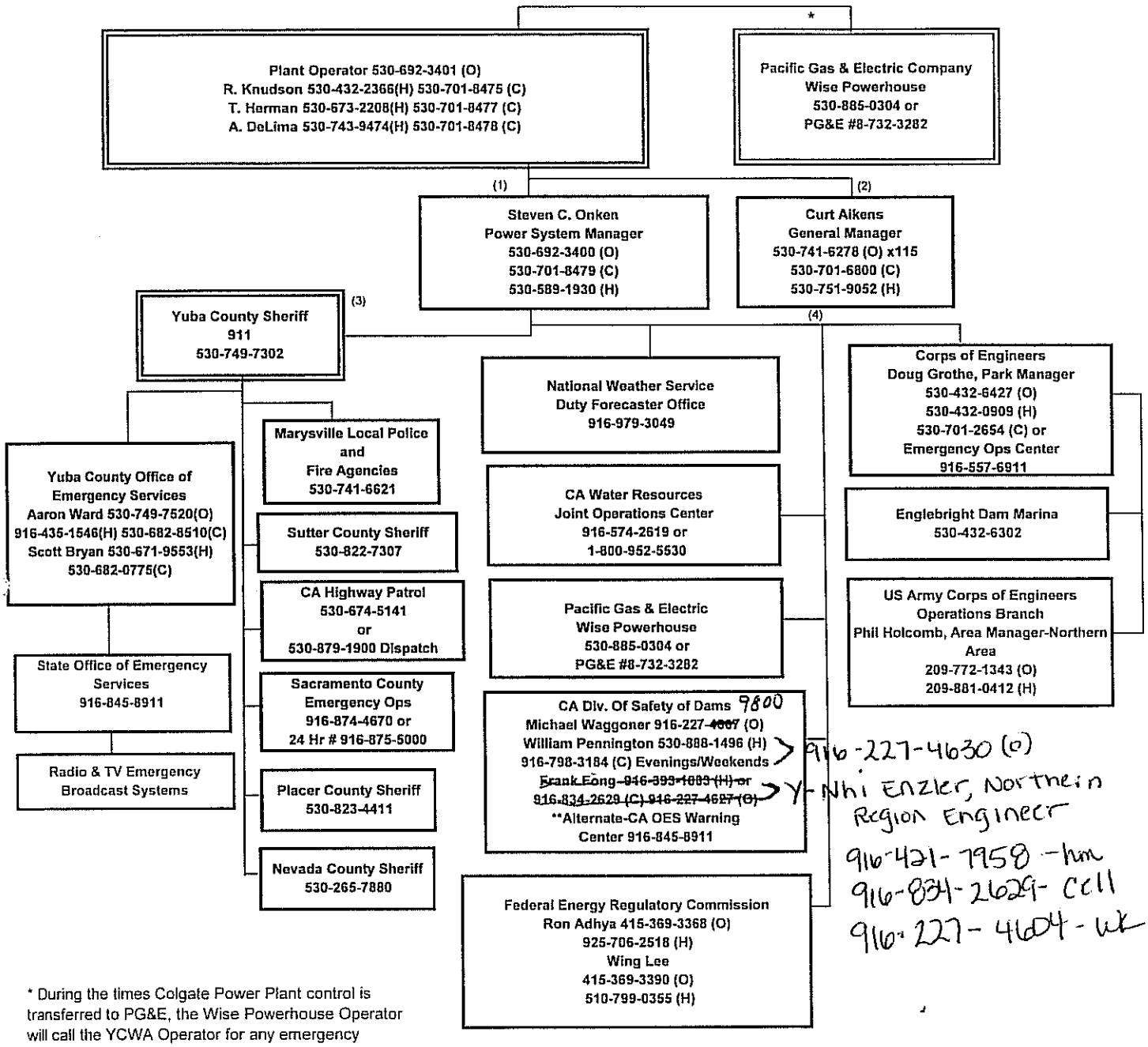
YCWA New Bullards Bar Dam - EAP Notification Chart

FERC #2246 BB#1034-000



* During the times Colgate Power Plant control is transferred to PG&E, the Wise Powerhouse Operator will call the YCWA Operator for any emergency notification.

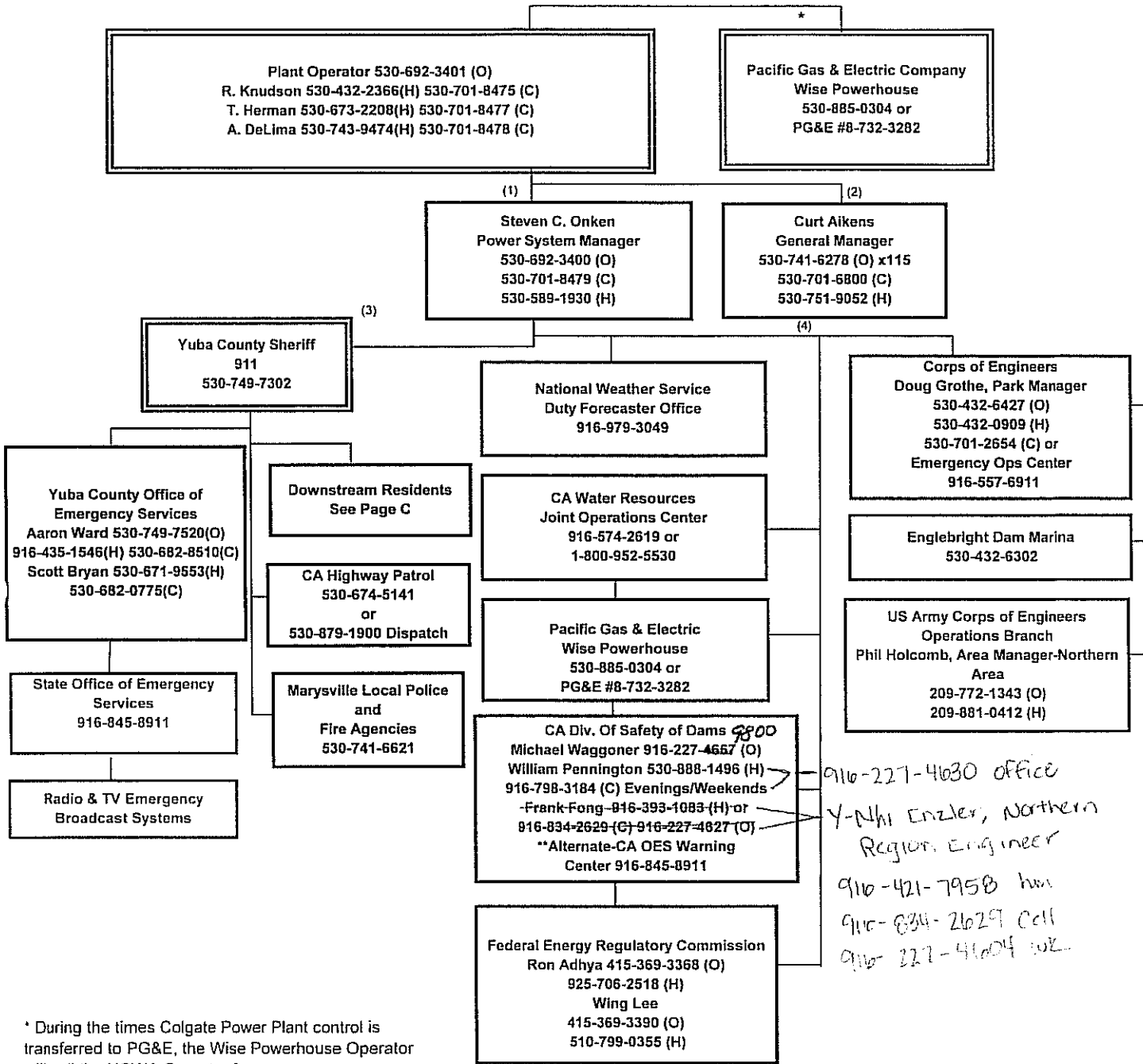
() Priority of Action

**Contact alternate only if unable to reach anyone at previous DSOD numbers. If the OES Warning Center is used as an alternate, advise the Warning Controller that they are being notified as DSOD's alternate and provide them with the message, telephone number and name of DSOD contacts, one of which must be notified.

Revised 12/4/2008

YCWA Log Cabin Dam - EAP Notification Chart

FERC #2246 BB#1034-003



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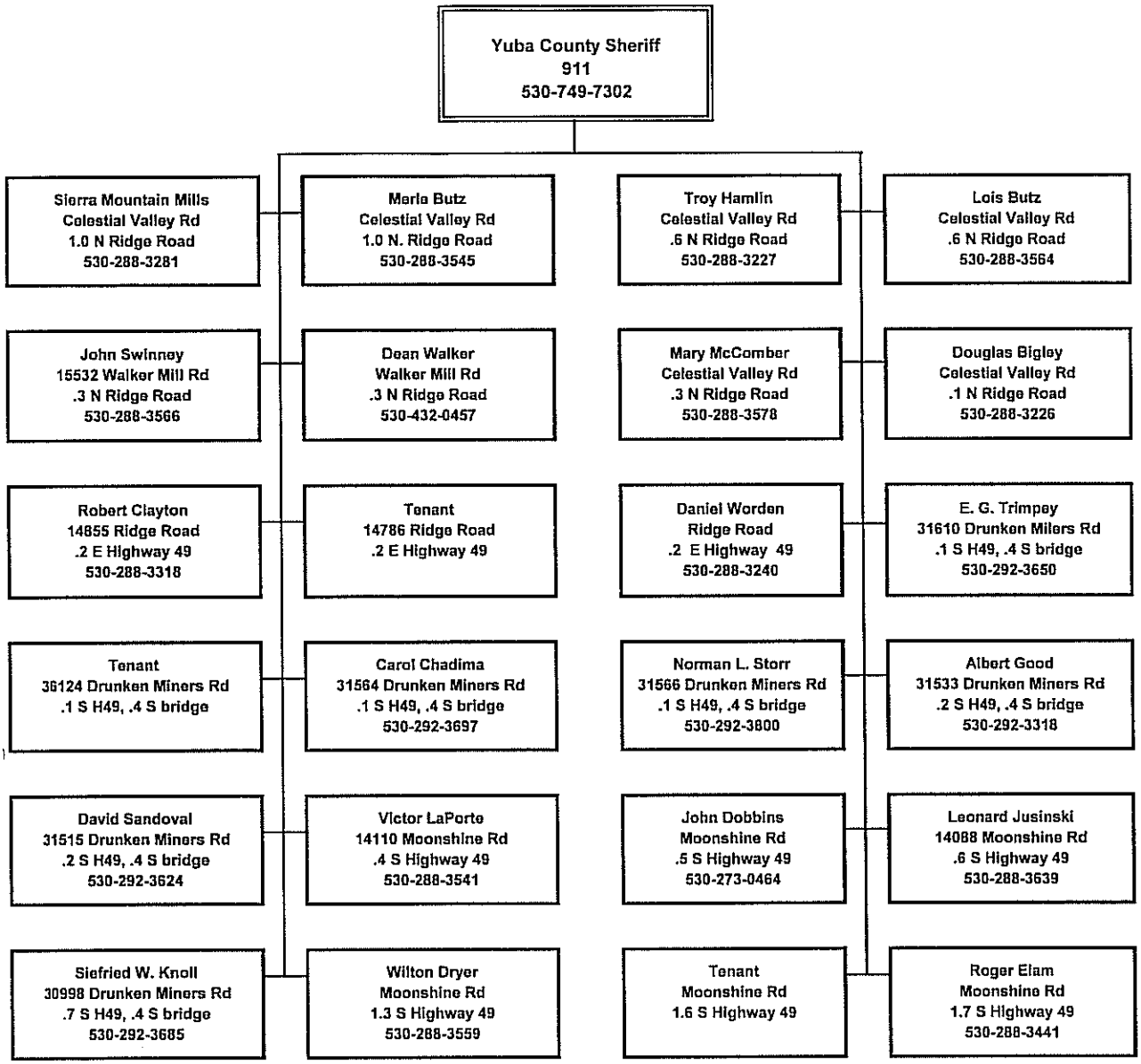
Revised 12/4/2008

YCWA Log Cabin Dam - EAP Notification Chart

FERC #2246 LC#1034-003



Road Abbreviation Key

N = north

S = south

E = east

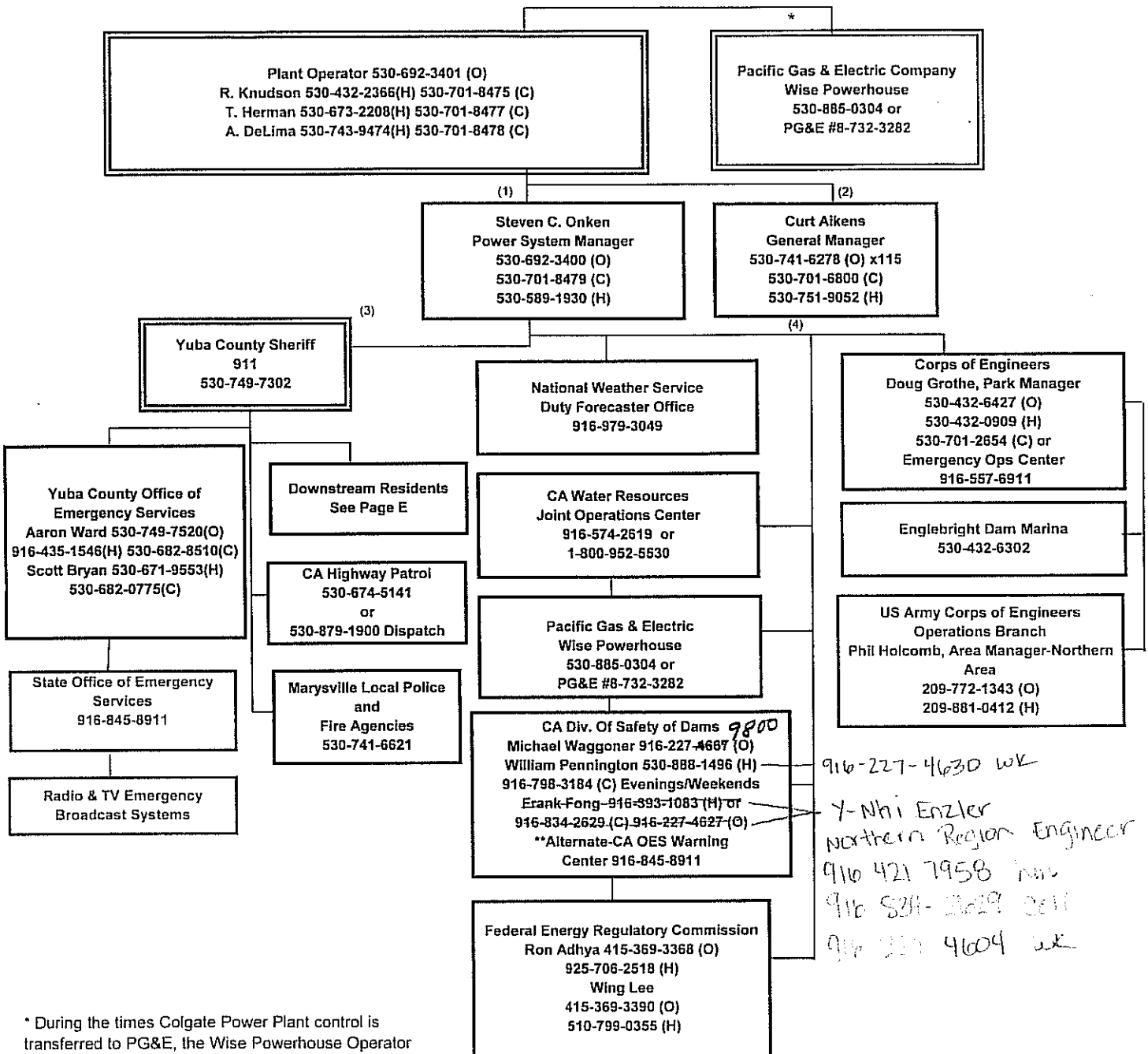
H49 = Highway 49

Numbers = miles

Revised 12/4/2008

YCWA Our House Dam - EAP Notification Chart

FERC #2246 BB#1034-002



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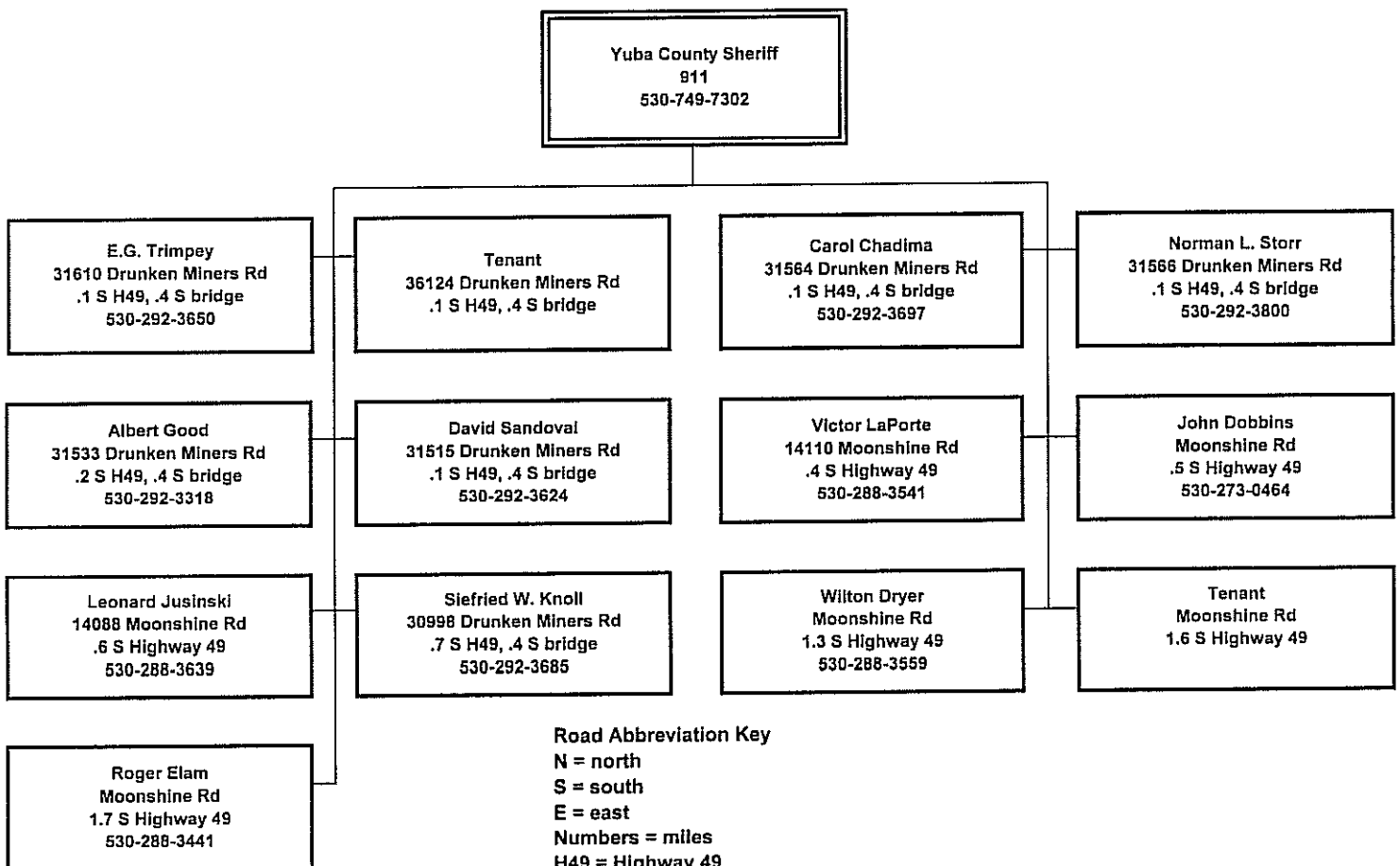
Revised 12/4/2008

YCWA Our House Dam - EAP Notification Chart

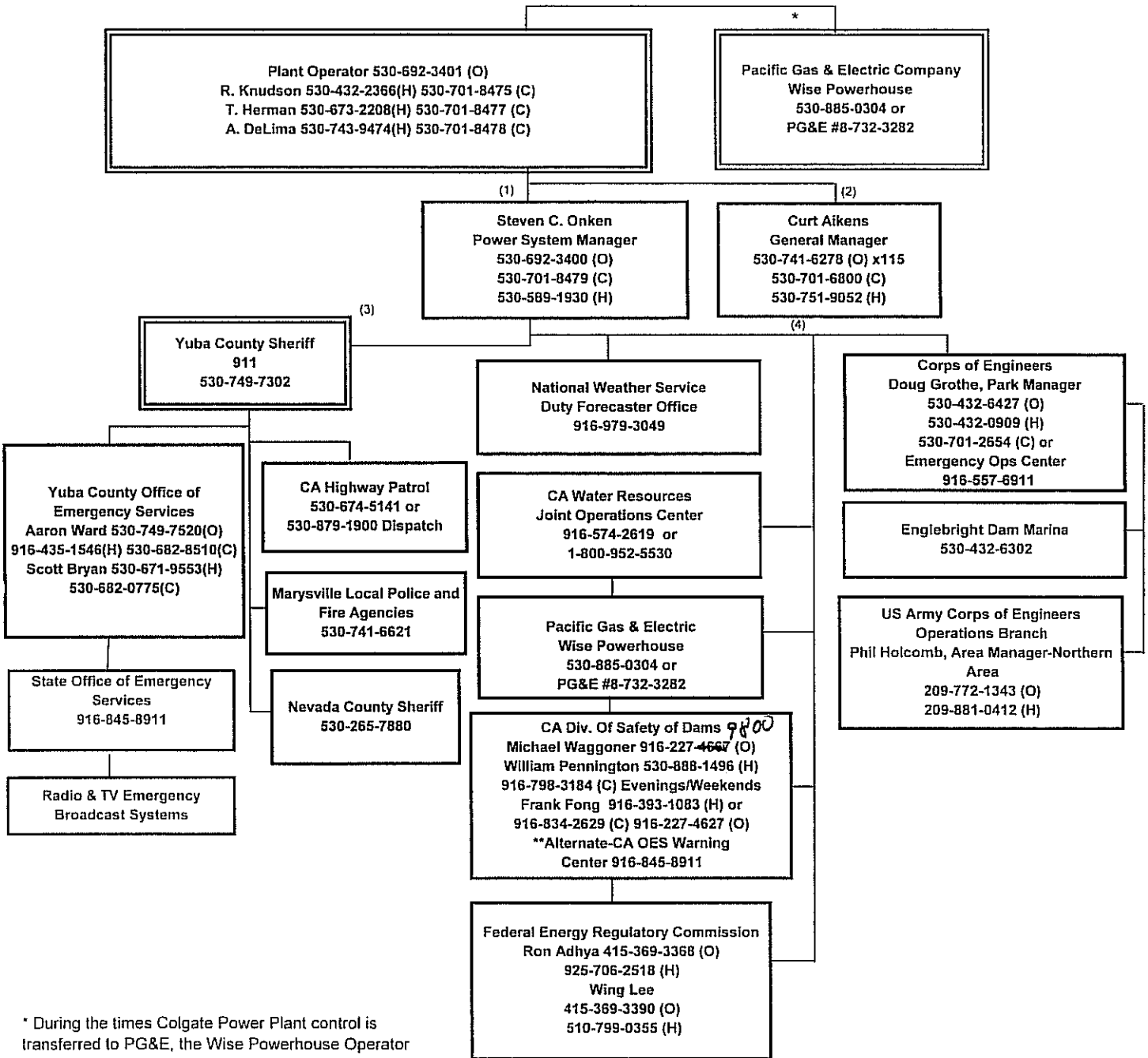
FERC #2246 OH#1034-002



Road Abbreviation Key
N = north
S = south
E = east
Numbers = miles
H49 = Highway 49

Revised 12/4/2008

YCWA Englebright Dam and Narrows 2 - EAP Notification Chart



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Revised 12/4/2008

Yuba County Water Agency
Standard Notification Alert Messages
for
F.E.R.C. Emergency Action Plan

INCREASE IN FLOWS:

This is _____ [*Name & Title*] from Yuba County Water Agency.

Flows from the
- ☐ Our House Dam
- ☐ Log Cabin Dam
- ☐ New Bullards Bar Dam
- ☐ Englebright Dam

are currently at _____ cubic feet per second and they will be increased to

_____ cubic feet per second at _____ (Time). The Agency will be keeping you apprized of the situation.

Yuba County Water Agency
Standard Notification Alert Messages
for
F.E.R.C. Emergency Action Plan

POTENTIAL PARTIAL DAM FAILURE

This is _____[*Name & Title*] from Yuba County Water Agency.

The
- ☐ Our House Dam
- ☐ Log Cabin Dam
- ☐ New Bullards Bar Dam
- ☐ Englebright Dam

has suffered structural damage.

The flows from the Dam are currently at _____ cubic feet per second and they will be increased to _____ cubic feet per second at _____ (Time). The Agency will be keeping you apprized of the situation.

☐ (On Bullards Bar Dam:) The flows at Marysville will be _____ cubic feet per second at _____ (Time).

☐ Evacuation of low areas should be started.

☐ Mass evacuation should start immediately

Yuba County Water Agency
Standard Notification Alert Messages
for
F.E.R.C. Emergency Action Plan

COMPLETE FAILURE

This is _____[*Name & Title*] from Yuba County Water Agency.

The
- ☐ Our House Dam
- ☐ Log Cabin Dam
- ☐ New Bullards Bar Dam
- ☐ Englebright Dam

has suffered complete failure. Evacuation of everyone downstream should start immediately.

☐ (On Bullards Bar Dam:) The flood will reach Marysville at _____ (Time).

II Statement of Purpose

The Emergency Action Plan (EAP) is intended to minimize the threat to public safety and to minimize the response time to an impending or actual sudden release of water from project dams. The Plan may also be used to provide notification when flood releases will create major flooding.

Agency personnel who work on or near the project facilities or who have responsibilities under this plan shall be familiar with the notification procedures outlined in this plan.

III. Project Description

A. New Bullards Bar Project is located in Yuba, Nevada and Sierra Counties, California and consists of New Bullards Bar Dam, Our House Diversion Dam and Log Cabin Diversion Dam. Tunnels supply water from the latter two dams to the former for power generation.

New Bullards Bar Dam is located on the North Yuba River at a base elevation of about 1,350 feet, USGS datum, about 28 miles northeast of Marysville, California. It is a double curvature, variable radius, concrete arch dam, 635 feet high by 2,220 feet long with a separate, gated spillway on the left abutment. The spillway has three 30-foot-wide by 53-foot-high tainter gates. Flows enter a 106-foot-wide concrete chute which ends at a flip bucket about 400 feet above the river. A level indicator has been installed at the pool at the base of the dam near the lower outlet works which will give an alarm at Colgate Power Plant and Wise Power Plant when there is a sudden or rapid change in the elevation of the pool.

Supplementary water is supplied to New Bullards Bar Reservoir by diversions from the Middle Fork of the Yuba River at Our House Dam, and from Oregon Creek at Log Cabin Dam. Log Cabin Dam is about 5 miles northeast of New Bullards Bar Dam. Our House Dam is about 8 miles east of New Bullards Bar Dam. Both of the diversion dams are double curvature, variable radius, concrete arches, with central, over flow section spillways. Our House Dam is 68 feet high and 368 feet long, and Log Cabin Dam is 49 feet high and 300 feet long.

New Bullards Bar Reservoir has a normal gross storage capacity of 966,103 acre-feet at reservoir elevation 1956. The North Yuba area tributary to the reservoir totals 489 square miles, extending up to elevations as high as 8,000 feet. The diversions from Oregon Creek and the Middle Yuba add 30 and 145 square miles, respectively, to the tributary drainage area.

Water from New Bullards Bar Dam flows in a southerly direction in the North Yuba River for about 2.3 miles to the junction with the Middle Yuba. Approximately 4.5 miles below this junction is the Colgate Powerhouse where power is generated from water stored behind New Bullards Bar Dam and from water diverted from Our House and Log Cabin reservoirs. Approximately 4.0 miles downstream from Colgate is the Yuba River junction with the South Yuba River. Englebright Dam is the next structure on the Yuba River. It is a reinforced concrete debris dam and is located about 6.6 miles below the junction of the South Yuba River. There are no other known structures close enough to the Yuba River to be affected by a dam failure.

B. Water from Our House Dam flows in a westerly direction in the Middle Yuba River for almost eight miles until it reaches the confluence with Oregon Creek at Highway 49. In this upper reach, the Middle Yuba River is very rocky and rugged with steep canyon walls. There are occasional sand bars at the mouths of small tributaries. There are no known structures or human habitation in this area. Just upstream of Highway 49, the canyon widens and becomes less steep. Oregon Creek Campground is located at the mouth of Oregon Creek.

C. Water from Log Cabin Dam flows in a southerly direction in Oregon Creek which is wooded, winding, rocky, and steep until it enters Celestial Valley approximately one mile south of the dam. Here the creek has been confined to a channel approximately 30 feet wide and 10 feet deep. Downstream from Celestial Valley, Oregon Creek steepens and narrows again and is again wooded, winding, and rocky until it joins the Middle Yuba River at the crossing of Highway 49.

Water from Our House Dam and Log Cabin Dam joins at the confluence of Oregon Creek and the Middle Yuba River which is just upstream (north) of the Highway 49 bridge. Immediately south of Highway 49 and parallel to Moonshine Road, the Middle Yuba River is relatively wide, flat, and straight. There are a number of permanent residential structures on both sides of the river, some of which are fairly close to the river. Beyond the point where Moonshine Road is parallel to the river, the river becomes narrow, steep, and winding and there are no known structures. Water from both Our House and Log Cabin Dams flows in the Middle Yuba River for about 4.6 miles from the junction with Oregon Creek to the junction of the Middle and North Yuba Rivers.

D. The Narrows 2 Powerhouse, constructed as a feature of the Yuba River Development Project, is located about five miles below the confluence of the South Yuba River and the Yuba River in Yuba County, approximately 400 feet downstream of Englebright Dam on the right (north) bank. Water is delivered to the Narrows 2 Powerhouse through a 737 foot long power tunnel from the 120 foot high reinforced concrete intake structure located about 200 feet upstream of Englebright Dam. The 369 feet of tunnel extending from the intake to the dam axis is concrete lined and has an inner diameter of 14'-0" and an outer diameter of 18'-4".

E. The following communities would be affected if the Bullards Bar Dam failed: Browns Valley, Marysville, Yuba City, Linda, Olivehurst, Wheatland, Rio Oso, Pleasant Grove, Natomas and Sacramento.

F. If the Our House Dam failed, the residences immediately downstream of

the Dam would be affected.

G. If the Log Cabin Dam failed, the residences immediately downstream of the Dam would be affected.

IV Emergency Detection, Evaluation, and Classification

A. GENERAL PROVISIONS FOR SURVEILLANCE AND EVALUATION

1. Bullards Bar Dam, Log Cabin Dam, Our House Dam & Narrows 2

a. All facilities are inspected visually three times per week by one of the three operators, all of whom are trained to note any changed conditions such as increased leakage, cracking, or settlement. Downstream stream flows are monitored continuously by the Yuba County Water Agency Colgate Power Plant when the Agency operators are manning the plant. In their absence, monitoring of stream flows is done by PG&E personnel at their Wise Power Plant. There is no change in surveillance with the seasons. Below New Bullards Bar Dam, early warning system are in place which would notify the Colgate Powerhouse operators or Wise Power Plant of any sudden increase in river flows.

b. Steven Onken, Power System Manager, is responsible for assessing the severity of the situation. If failure is in progress or is imminent, the operators have the authority to implement the plan.

c. If the problem is a potential failure, then Steven Onken is authorized to implement the plan. In Steven Onken's absence, Curt Aikens, General Manager, is authorized to implement the plan.

B. CLASSIFICATIONS

1. Failure is Imminent or has Occurred

a. If one of the project dams fails or if a failure is imminent, notify Steven Onken, Power System Manager. If Steven Onken cannot be reached, notify Curt Aikens, General Manager. Give the specific dam by name, an estimate of flow or size of break, and if the condition is advancing or has stabilized. If neither Curt Aikens nor Steven Onken are reached, operators shall immediately make the notifications on the appropriate Notification Flow Chart(s).

b. If Englebright Dam or Narrows 2 water passage fails or if a failure is imminent, notify Steven Onken, Power System Manager. If Steven Onken cannot be reached, notify Curt

Aikens, General Manager. Give the specific name of the dam or project, an estimate of flow or size of break, and if the condition is advancing or has stabilized. If neither Curt Aikens nor Steven Onken are reached, operators shall immediately make the notifications on the appropriate Notification Flow Chart(s). Yuba County Water Agency will not activate YCWA's EAP for an Englebright event not associated with Narrows 2. The Corps will make a decision on activating their own EAP Plan.

(1) Also notify the US Army Corps of Engineers:

(a) Doug Grothe, 530-432-6427 (O); 530-432-0909 (H)

Doug Grothe will notify:

(a) Chief Hydrology Section, 916-557-7101 (O)

(b) Phil Holcomb, Operations 209-772-1343 (O); 209-881-0412 (H)

2. Potentially Hazardous Situation is Developing (i.e. Flood Event)

a. Notify the same personnel just as if failure is imminent or has occurred. Identify the dam by name, the nature of the problem, and the discharge rate. Steven Onken, or in his absence Curt Aikens, will notify the agencies and personnel listed above. If neither Steven Onken nor Curt Aikens can be reached then the operators shall immediately make the notifications on the appropriate Notification Flow Chart(s).

3. Increase in Flows

An increase in flows is defined as a sudden or uncontrolled release (i.e. equipment failure or flood runoff) in the river channel downstream of the Our House, Log Cabin or New Bullards Bar Dam.

a. Notify the same personnel just as if failure is imminent or has occurred. Identify the dam by name, the nature of the problem, and the discharge rate. Steven Onken, or in his absence Curt Aikens, will notify the agencies and personnel listed above. If neither Steven Onken nor Curt Aikens can

be reached, then the operators shall immediately make the notifications on the appropriate Notification Flow Chart(s).

V. General Responsibilities Under this Emergency Action Plan

A. LICENSEE RESPONSIBILITIES

1. Steven Onken, Power System Manager, is assigned the primary responsibility for coordination, effective execution, annual review, update training, and testing of the plan. He is also the designated FERC contact person.

2. Steven Onken, Power System Manager, is responsible for assessing the severity of the situation. If failure is in progress or is imminent, the operators have the authority to implement the plan.

3. If the problem is a potential failure, then Steven Onken is authorized to implement the plan. In Steven Onken's absence, Curt Aikens, General Manager, is authorized to implement the plan.

4. Once the Plan is implemented the Operator on duty will commence making the required telephone calls.

B. RESPONSIBILITY FOR NOTIFICATION

1. The **Yuba County Water Agency Operators/Power Systems Manager and/or Pacific Gas & Electric Wise Operators** will notify:

   a. Yuba County Sheriff
   b. Pacific Gas & Electric Company Wise Powerhouse
   c. Englebright US Army Corps of Engineers
   d. National Weather Service
   e. California Department of Water Resources, Joint Operations Center, Sacramento
   f. California Division of Safety of Dams
   g. Federal Energy Regulatory Commission

2. The **Yuba County Sheriff** will notify:

   a. Yuba County Office of Emergency Services
   b. Sutter County Sheriff
   c. California Highway Patrol
   d. Nevada County Sheriff
   e. Placer County Sheriff
   f. Sacramento County Sheriff
   g. Local Police and Fire Agencies
   h. Local residents through a dial down phone service and/or in

person - See Appendix VIII-C for street addresses

3. The **Yuba County Office of Emergency Services** will notify:

   a. State office of Emergency Services
   b. Radio & TV Emergency Broadcast Systems

4. The Englebright US Army Corps of Engineers will notify:

   a. Englebright Marina
   b. US Army Corps of Engineers-Stockton
   c. US Army Corps of Engineers Chief Hydrology Section-Sacramento

C. RESPONSIBILITY FOR EVACUATION

1. The Yuba County Sheriff in cooperation with the Yuba County Office of Emergency Services will have the responsibility for any evacuations.

D. RESPONSIBILITY FOR TERMINATION AND FOLLOW-UP

1. Steven Onken, Power System Manager, if not available then Curt Aikens the General Manager, will have the responsibility to maintain surveillance of the emergency condition that caused the declaration of the Emergency Action Plan. In coordination with the Division of Safety of Dams, the Federal Energy Regulatory Commission, the California Department of Water Resources Joint Operations Center, the Yuba County Sheriff and the Office of Emergency Services, YCWA will decide when the situation is no longer an emergency and the Emergency Action Plan will be terminated by Steve Onken or Curt Aikens, by notifying each party on the EAP Notification Chart.

E. EAP COORDINATOR RESPONSIBILITY

1. Steven Onken, Power System Manager, will be responsible for coordination of EAP-related activities such as revisions to the Plan, training of personnel, EAP exercises etc.

VI PREPAREDNESS

A. SURVEILLANCE

BULLARDS BAR DAM, LOG CABIN DAM, OUR HOUSE DAM

All facilities are inspected visually three times per week by one of the three operators, all of whom are trained to note any changed conditions such as increased leakage, cracking, or settlement. Downstream stream flows are monitored continuously. There is no change in surveillance with the seasons.

B. RESPONSE DURING PERIODS OF DARKNESS

1. Bullards Bar Dam

   Operators have flashlights and portable spot lights. Power generated by the fish flow hydroelectric plant will switch over automatically if commercial power fails. A portable generator is also available.

2. Log Cabin Dam & Our House Dam

   Operators have flashlights and portable spot lights. There is no provision for alternative power.

3. Englebright Dam and Narrows 2

   Operators have flashlights and portable spot lights, should project or commercial (PG&E) power not be available. An emergency propane generator is available for lighting the intake and power plant.

C. ACCESS TO SITE

1. Bullards Bar Dam

   a. Primary access to the dam is via Marysville Road from Dobbins, California.

   b. Secondary access to the dam is via Marysville Road from Highway 49/Camptonville.

2. Log Cabin Dam & Our House Dam

a. Access to Log Cabin Dam is via a private road off Highway 49, 1/8 mile east of the intersection of Marysville Road and Highway 49.

b . Access to Our House Dam is by a paved road off of Alleghany Road.

3. Englebright Dam and Narrows 2

a. Access to Narrows 2 is via a private road off of Scott Forbes Road off of Peoria Road from Highway 20. (First private road past the University of California Sierra Foothill Research Center)

b. Access to Englebright Dam is via Mooney Flat Road from Highway 20.

D. RESPONSE DURING WEEKENDS AND HOLIDAYS

1. Yuba County Water Agency Operators regular working hours are 7:00 a.m. to 3:30 p.m., seven days a week. The Agency's Operators are also on call 24 hours a day.

2. At all other times the Pacific Gas & Electric Company Wise Powerhouse Operators monitor the Agency's system through microwave telemetry equipment.

E. RESPONSE DURING PERIODS OF ADVERSE WEATHER

Adverse weather will have only a minimal effect on responses. During the limited times when snow is present, four-wheel-drive vehicles with chains are available.

F. ALTERNATE SYSTEMS OF COMMUNICATION

If the normal SBC telephone service is lost, the PG&E microwave telephone link to the Wise Powerhouse can be used. The Agency has hand-held and vehicle radios and there is a two-way radio system between the Agency and PG&E. There are eleven (11) cellular phones available which will be used in an emergency. They have been assigned to key individuals, particularly the Operators and the Power System Manager. The Yuba County Emergency Dial-Down System will provide early notification to residents in case of any emergency.

G. EMERGENCY SUPPLIES AND RESOURCES

1. Materials and Equipment

Since the three dams are concrete arch dams with rock foundations, stores of materials and equipment would not be effective; and therefore, none are available at those sites. Bulkhead gates are available at Narrows 2 intake should the intake gates fail to close in an emergency.

2. Coordination of Information

The Agency's Marysville Office staff update field personnel as well as Yuba County Office of Emergency Services with current storm information. Current storm information is accessed from the Internet via many Internet sites. When "heavy use" grid locks the Internet, information is obtained via an Intranet with the California Data Exchange Center where access is allowed for emergency only.

3. Coordination of Flows

a. Bullards Bar Dam - Failure is imminent or has occurred

(1) Increase releases from Bullards Bar Reservoir to reduce storage.

(2) Increase releases from Englebright Reservoir to move water downstream.

(3) Dispatch personnel to Log Cabin Dam to install tunnel gate to minimize flows into Bullards Bar Reservoir.

(4) Request Nevada Irrigation District and PG&E to minimize releases down the Middle and South Yuba Rivers.

(5) Request South Feather Water and Power maximize diversion from Slate Creek.

b. Log Cabin Dam - Failure is Imminent

(1) Dispatch personnel to Our House Dam to install the

tunnel gate to minimize flow to Log Cabin Dam.

c. Our House Dam - Failure is Imminent

(1) Request Nevada Irrigation District to minimize releases down the Middle Yuba River. During office hours call (530) 273-8571(Yuba-Bear Project Office). After hours call Bill Morrow at (530) 389-8744 or Wise Powerhouse at (530) 885-0304.

d. Englebright Dam and Narrows 2 Project

(1) Dam Failure is Imminent or Has Occurred

(a) If YCWA identifies a hazardous situation at Englebright Dam, YCWA will immediately notify the Corps. YCWA will offer the following action items to the Corps.

i) Maximize flows through Narrows 2 Powerhouse, if practical.

ii) Maximize flows through the 36-inch diameter Howell Bunger valve at Narrows 2 Powerhouse, if practical.

iii) Minimize any releases from Bullards Bar Dam to the North Yuba River.

(2) Strong Earthquake in the Area

(a) If a strong earthquake is felt in the area, Yuba County Water Agency operator shall:

i) Contact US Army C.O.E. to inspect dam.

ii) Immediately send an investigator to make a visual inspection of intake gate and penstock and monitor instruments closely.

iii) If Englebright Dam appears safe and water levels are constant, log occurrence and continue normal

monitoring; follow steps outlined in Emergency Condition G.3.d.(5)(a), if necessary.

iv) If Englebright Dam failure is imminent or has occurred, follow steps outlined in Emergency Condition G.3.d.(1)(a)

(3) Falling Water Surface

If abnormal lowering of the reservoir not associated with power operations is observed, Yuba County Water Agency operators shall:

(a) Immediately send an investigator to make a visual inspection of the dam.

(b) If the dam appears safe, check water level instruments; and, if necessary, follow steps outlined in Emergency Condition G.3.d.(5)(a).

(c) If dam failure is imminent or has occurred, follow steps outlined in Emergency Condition G.3.d.(1)(a).

(d) If the Narrows 2 Penstock fails or is in danger, immediately close the tunnel gate at the intake.

(4) Rising Water Surface Elevation

(a) If abnormally high flows due to storm or load rejection occurs, Yuba County Water Agency operator shall immediately notify Englebright Dam Park Manager.

(5) Other Changes at Englebright Dam

(a) If new seepage or cloudy leakage, boils, landslides, slumping, cracks etc. occurs, the individual observer shall:

i) Immediately contact Englebright Dam Park Manager and Wise Switching Center.

ii) Immediately contact Supervisor.

iii) Supervisor shall immediately notify operations for further inspection and action as necessary.

H. ALTERNATIVE SOURCES OF POWER

1. Bullards Bar Dam - There are four sources of power that can be used to operate spillway gates:

   a. Commercial PG&E power, hydro power from fish flow generator, portable trailer-mounted generator, and an industrial gasoline engine set up to mechanically drive one (1) spillway gate. The fish water release generator located at the base of the Dam can run all three gates.

2. Log Cabin & Our House Dams - No auxiliary power is needed because there are no controlled spillway gates at these dams. The sluice valves can be manually operated.

3. Englebright Dam - No auxiliary power is needed because there are no controlled spillway gates at this dam.

4. Narrows 2 - Auxiliary power is required to raise and lower the intake gate which can be remotely tripped from the power house and mechanically tripped from the intake. The two external PG&E power sources to the plant are the 21 KV emergency power and the 60 KV line. Should that fail, a propane generator has been installed for a backup power source.

I. PERSONNEL RESOURCES

1. Yuba County Water Agency personnel will respond to Bullards Bar Dam and operate the spill gates.

2. A Deputy Sheriff's residence is also located at Bullards Bar on east side.

3. DWR "Flood Fight" staff.

4. PG&E at numerous sites.

J. TRANSPORTATION RESOURCES

1. Boats are available at Colgate Powerhouse as well as at the marina and Yuba County Water Agency docks on Bullards Bar Reservoir near the dam right abutment upstream.

2. Helicopter availability:

   a. OES/National Guard -(916)854-3440

   b. Pacific Gas & Electric - (530)889-3304 (PG&E Partnership Coordinator) (sites at Auburn, Rogers Flat and Sacramento). If unavailable, call Wise Powerhouse at 530-885-0304.

   c. CDF - Auburn (530) 477-5761

   d. Butte County (3) (530)538-7373

K. COMMUNICATIONS RESOURCES

1. State OES OASIS (Organization for the Advancement of Structured Information Standards) command center towed from Sacramento, UHF/VHF

2. Local OASIS may not be available depending on flood conditions

3. Yuba County Sheriff - Mobile command, cellular, generator, extra phone lines, synthesized radios

4. CHP Glenn/Tehama

5. Sheriff in Redding serves as Regional Command Post

6. PG&E - Wise PH

7. OES - bank of cell phones

8. Cellular phones also available from cellular companies if requested by OES/Sheriff

9. Yuba County Water Agency has 11 cellular phones available.

10. Yuba County's Dial Down Telephone System

L. MEDICAL RESOURCES

1. May be limited because of impacts by other emergencies.

2. Flood may necessitate evacuating Marysville and Yuba City hospitals.

M. ENGINEERING RESOURCES FAMILIAR WITH PROJECT

1. Wayne Edwards (Part 12 Consultant) 415-883-1663
2. John Christensen (Engineer/Consultant) 415-485-1440 (O)
3. Harry Jackson (Engineer/Consultant) 707-431-8177 (H)
4. Kevin Goishi (PG&E Partnership Coordinator) 530-889-3304 (O) 916-786-7836 (H)
5. Bill Pennington (Division of Safety of Dams) 916-227-4630 (O) 530-888-1496 (H)
6. Donn Wilson (Retired Engineer Administrator) 360-299-2713 (H)
7. Gummie Sarkaria (Retired Part 12 Consultant) 707-527-6191 (H)

VII Inundation Maps

A. BULLARDS BAR DAM

B. OUR HOUSE DAM

C. LOG CABIN DAM

Flood Conditions at Critical Locations

Table A-3 shows the flood conditions at critical locations for the PMF condition. We had an option of providing flood conditions at critical locations for the New Bullards Bar Dam failure under normal flow conditions, but chose to only show the PMF condition because the differences in this data are small and the PMF shows the more conservation data for public safety purposes.

Table A-3 summarizes the results of the HEC-RAS model analysis for the PMF condition. In general, the "time to flood wave arrival" is defined as the time for the river levels to rise 1 foot as a result of the PMF New Bullards Bar Dam failure.

Table A-3
Flood Condition at Critical Locations
PMF Failure (Peak Outflow after Breach = 14,500,000 cfs)

River Reach	River Miles Below Dam	River Level After Failure (feet NGVD)	Peak River Level Before Failure (feet NGVD)	Time from Failure to Flood Wave Arrival	Time from Failure to Peak Flood Stage
North Yuba River	0.05 (RS218521) (New Bullards Bar TW)	1864	1445	0 minutes	18 minutes
Yuba River	7.49 (RS179212) (New Colgate Powerhouse)	1034	595	7 minutes	29 minutes
Yuba River	17.92 (RS124166) (Englebright Dam TW)	499	321	22 minutes	1 hour 1 minute
Yuba River	23.42 (RS95076) (Highway 20 Bridge)	325	223	37 minutes	58 minutes
Yuba River	29.2 (RS62688) (Upstream of Daguerre Point Dam)	163	135	51 minutes	1 hour 37 minutes
Yuba River	39.29 (RS9402) (Simpson Lane Bridge, Marysville)	78	64	1 hour 40 minutes	4 hours 53 minutes
Feather River	41.07 (RS2000) (Below Feather and Yuba confluence)	64	53	2 hours 54 minutes	6 hours 21 minutes
Feather River	58.72 (RS49692) (Highway 99 Bridge)	56	49	5 hours 45 minutes	15 hours 47 minutes
Feather River	67.64 (RS2601) (Above Feather/Sacramento junction)	42	41	10 hours 35 minutes	24 hours 31 minutes

VIII Appendices

A. SUMMARY OF INUNDATION STUDY

New Bullards Bar Dam

1. Dam Breach Model Development

a. Method

The latest version of HEC-RAS (version 3.1.3), developed by the U.S. Army Corps of Engineers (USACE), Hydrologic Engineering Center (HEC), was used for this inundation study. The HEC-GeoRAS 4.1.1 extension was integrated into the ESRI ArcGIS 9.1 to develop the geometric data for the HEC-RAS model using geospacial data, and prepare the inundation maps based on the HEC-RAS model run results.

b. Development of Geometric Data

The study reach started from the upstream end of the New Bullards Bar Reservoir, and ended at about 2 miles downstream of the Sacramento Bypass on the Sacramento River, resulting in a total reach length of approximately 87 river miles. There are eight major rivers, tributaries, and conveyance features in the study reach: the North Yuba River, Middle Yuba River, South Yuba River, Yuba River, Feather River, Bear River, Sutter Bypass and the Sacramento River. The range of the study reach was determined based on the estimate of downstream impacts resulting from the dam failure under both normal flow and Probable Maximum Flood (PMF) conditions.

The original geospacial data for the study area was obtained from the U.S. Geological Survey (USGS) National Elevation Dataset (NED). It is the best available Digital Elevation Model (DEM) data provided by the USGS Seamless Data Distribution System (SDDS). The DEM data was later converted into the Triangulated Irregular Network (TIN) format for HEC-GeoRAS processing. The river network, cross sections, levees, lateral weirs, and storage area data were then developed from the New Bullards Bar reservoir to the city of Sacramento using HEC-GeoRAS utilities. The range of the cross sections was determined based on the estimate of downstream impacts resulting from dam failure under normal flow conditions. Elevations of levees and lateral weirs were obtained

from 7.5-minute USGS topographic maps and *Lower Feather River Floodplain Mapping Study* (USACE Sacramento District, February 2005).

The geometry data was extracted and converted into a RAS GIS Import File using HEC-GeoRAS utilities. Cross-section data was verified and completed based on the USGS topographic maps. Geometry of the New Bullards Bar and Englebright Dams were obtained from project drawings provided by the Yuba County Water Agency (YCWA) and field measurements. Manning's "n" values were determined based on field observations and satellite images of the study reach. The downstream boundary condition was assumed to be normal water level.

c. Model Simplifications

In order to provide conservative simulation results, as well as to minimize numerical instability with the model, some simplifications were made to the HEC-RAS model.

(1) Since the slope of the river is very steep between the New Bullards Bar Dam and the Englebright Reservoir, the flow velocity in this reach was extremely high as a result of the New Bullards Bar Dam failure, resulting in induced numerical instabilities to the HEC-RAS model. Therefore, existing flows in the Middle Yuba and South Yuba Rivers were not considered in the model to reduce the complexity of the model and minimize numerical instabilities. This flow was considered acceptable as their contribution to either lateral inflow or backwater storage are negligible.

(2) The HEC-RAS model experienced instability at the junction of the Feather and Yuba Rivers due to the complexity and sudden changes with the geometric data in this area. Therefore, the upper reach of the Feather River above the junction was not considered in the model, and the lower portion of the Feather River below the junction and Yuba River were treated as one continuous river reach. The water level in the Feather River above the junction was estimated separately in the HEC-RAS model using the stage hydrograph at the junction as the downstream boundary condition. This simplification ignored the backwater storage provided by the Feather River above the junction, and hence, gave slightly more conservative results.

(3) The peak flows resulting from the dam failure were estimated to be larger than the 500-year flood between the New Bullards Bar Dam on the North Yuba River and the junction of the Feather and Bear Rivers, while most levees were constructed to handle only the 100-year flood. Therefore, levees on the Yuba and Feather Rivers from Yuba City to the confluence of the Feather and Bear Rivers were considered failed in the HEC-RAS model for the dam failure case. They were also considered failed for the PMF case model runs due to the magnitude of the flood.

(4) The Yolo Bypass channel was not modeled as flows in the Yolo Bypass do not return to the Sacramento River in the range of the study reach. However, the Fremont Weir that directs excess flow from the Sacramento River into the Yolo Bypass was incorporated into the HEC-RAS model as a lateral outflow structure. Flow going over the Fremont Weir into the Yolo Bypass was treated as lost flow in the model. The water level in the Yolo Bypass was estimated separately using the flow leaving the Fremont Weir as the inflow to the Yolo Bypass.

d. Inflow Conditions Evaluated

Two inflow conditions were simulated using the HEC-RAS model - the normal flow condition and the PMF condition. The two conditions are discussed below.

(1) Normal Flow

For the normal condition failure simulation, an unsteady inflow was assumed based on USGS gage records on the North Yuba River upstream of the New Bullards Bar Dam. The inflow hydrograph started at 66,990 cubic feet per second (cfs), but quickly dropped down to 3,000 cfs within 2 hours, and then down to 400 cfs in another 2 hours. A higher starting flow was used primarily to stabilize the HEC-RAS model as it was unable to model the abrupt change from 400 cfs to the full dam failure hydrograph due to the extremely large change in discharge. The reservoir was assumed to be at its normal operating level of 1956 feet, and the spillway gates were assumed partially open to only pass through the inflow.

Inflow conditions on the other rivers were also estimated based on USGS gage records on these rivers. Steady inflows of 100 cfs were assumed for Bear River and Sutter Bypass. An unsteady inflow with a peak flow of 6,000 cfs was assumed for the Sacramento River. The inflow from the Feather River above the confluence of the Feather and the Yuba Rivers would have negligible impact to downstream flood levels under normal conditions, and hence, it was ignored for simulating downstream impacts due to dam failure. When estimating the water level in the upper reach on the Feather River, an unsteady flow with a peak flow of 4,000 cfs was assumed.

(2) Probable Maximum Flood

A PMF hydrograph was developed for the New Bullards Bar Dam by Mead & Hunt, Inc. in 2006. This hydrograph was used as the inflow condition for the dam failure under the PMF.

Other rivers in the study reach were assumed to be experiencing 100-year floods. The 100-year flow hydrographs were taken from USACE's *Lower Feather River Floodplain Mapping Study*. Inflow from the upper reach of the Feather River was also introduced to the study reach as a lateral inflow since the 100-year flood on the Feather River was not negligible.

e. New Bullards Bar Dam Parameters and Spillway Rating Curve

Yuba County Water Agency (YCWA) performed a series of field measurements of the New Bullards Bar spillway crest and the radial gates in 2006. As a result, a new spillway rating curve was developed based on data obtained from field measurements. The physical parameters of the New Bullards Bar Dam in the HEC-RAS model were consistent with those in the new spillway rating curve computation, and the other hydraulic parameters such as discharge coefficients were determined so that the spillway capacity that the HEC-RAS model computed agreed with that in the new spillway rating curve computation at some critical water surface elevations.

f. Breach Assumptions

(1) New Bullards Bar Dam Breach

For the normal flow condition, the breach of the New Bullards Bar Dam was assumed to occur at the normal pool elevation of 1956 feet. The dam was assumed to breach down to its rock foundation of 1350 feet within 1 hour. The breach section was assumed to be 100 feet wide at the bottom with side slopes of 1.2 on the left, and 2 on the right, resulting in a top breach width of about 2080 feet. Although the top width of the breach was slightly shorter than that of the dam (2220 feet), the loss of capacity was compensated by assuming constant breach side slopes which cut through rocks at a lower portion of the dam section. The breach time was longer than recommended in the Federal Energy Regulatory Commission's (FERC) *Engineering Guidelines for the Evaluation of Hydropower Projects.* However, due to the uniqueness and complexity of the geometry of the river valley in the study reach, the breach development time used was the shortest that the HEC-RAS model could handle for the normal condition. Sensitivity analysis was not performed for this dam breach since a shorter breach time was impossible for the HEC-RAS model to handle.

For the PMF condition, the breach of the New Bullards Bar Dam was assumed to occur at approximately 0.1 foot below the peak pool elevation that would occur during the PMF. The dam was assumed to breach completely within 0.3 hours with side slopes of 1.2 on the left and 2 on the right, resulting in a top breach width of about 2080 feet. These assumptions followed FERC's criteria for arch dam breach and gave reasonably conservative results. The breach time was slightly longer than recommended in the FERC guidelines. However, it was the shortest that the HEC-RAS model could handle for the PMF condition.

The breach parameters for the New Bullards Bar Dam under the two flood conditions are compared in Table A-1.

Table A-1
Assumed Breach Parameters for New Bullards Bar Dam

	Normal Flow Failure	PMF Failure
Location of breach	Arch dam	Arch dam
Bottom elevation	1350 feet	1350 feet
Bottom width	100 feet	100 feet
Side slope (Horizontal component)	1.2 (left side) 2 (right side)	1.2 (left side) 2 (right side)
Time to develop maximum size	1 hour	0.3 hours
Reservoir elevation to initiate breaching	1956 feet (Normal pool elevation)	1974.5 feet (0.1 foot below peak stage)

(2) Domino Failure

The Englebright Dam was assumed to fail as a result of the New Bullards Bar Dam failure or high water stage in the Englebright reservoir as occurred under the PMF condition. For both the normal flow and PMF conditions, the Englebright Dam was assumed to fail down to elevation 300 feet with a side slope of 1.8 on either side of the dam. The breach was assumed to complete within 0.3 hours. The bottom of the breach section was approximately 30 feet above the rock foundation of the dam (270 feet) due to the 30-foot-deep sediment accumulated behind the dam. The top breach width was about 971 feet, which was slightly shorter than the top width of the dam (1142 feet). The loss of the capacity was compensated by assuming constant breach slopes that cut through rocks at a lower portion of the dam section. For the normal flow condition, the breach was assumed to occur at the leading edge of the New Bullards Bar Dam failure flood hydrograph. For the PMF condition, the breach was assumed to occur at elevation 544 feet, which was 2 feet above the crest of the dam. This assumption was made based on the historical high flood stage at the Englebright Reservoir.

The breach parameters for the Englebright Dam under the two flood conditions are compared in Table A-2.

Table A-2
Assumed Breach Parameters for Englebright Dam

	Normal Flow Failure	**PMF Failure**
Location of breach	Arch dam	Arch dam
Bottom elevation	300 feet	300 feet
Bottom width	100 feet	100 feet
Side slope (Horizontal component)	1.8 (both sides)	1.8 (both sides)
Time to develop maximum size	0.3 hours	0.3 hours
Reservoir elevation to initiate breaching	537.65 feet	544 feet

(3) Flood Conditions at Critical Locations

Table A-3 shows the flood conditions at critical locations for the PMF condition. We had an option of providing flood conditions at critical locations for the New Bullards Bar Dam failure under normal flow conditions, but chose to only show the PMF condition because the differences in this data are small and the PMF shows the more conservation data for public safety purposes.

Table A-3 summarizes the results of the HEC-RAS model analysis for the PMF condition. In general, the "time to flood wave arrival" is defined as the time for the river levels to rise 1 foot as a result of the PMF New Bullards Bar Dam failure.

Table A-3
Flood Condition at Critical Locations
PMF Failure (Peak Outflow after Breach = 14,500,000 cfs)

River Reach	River Miles Below Dam	River Level After Failure (feet NGVD)	Peak River Level Before Failure (feet NGVD)	Time from Failure to Flood Wave Arrival	Time from Failure to Peak Flood Stage
North Yuba River	0.05 (RS218521) (New Bullards Bar TW)	1864	1445	0 minutes	18 minutes
Yuba River	7.49 (RS179212) (New Colgate Powerhouse)	1034	595	7 minutes	29 minutes
Yuba River	17.92 (RS124166) (Englebright Dam TW)	499	321	22 minutes	1 hour 1 minute
Yuba River	23.42 (RS95076) (Highway 20 Bridge)	325	223	37 minutes	58 minutes
Yuba River	29.2 (RS62688) (Upstream of Daguerre Point Dam)	163	135	51 minutes	1 hour 37 minutes
Yuba River	39.29 (RS9402) (Simpson Lane Bridge, Marysville)	78	64	1 hour 40 minutes	4 hours 53 minutes
Feather River	41.07 (RS2000) (Below Feather and Yuba confluence)	64	53	2 hours 54 minutes	6 hours 21 minutes
Feather River	58.72 (RS49692) (Highway 99 Bridge)	56	49	5 hours 45 minutes	15 hours 47 minutes
Feather River	67.64 (RS2601) (Above Feather/Sacramento junction)	42	41	10 hours 35 minutes	24 hours 31 minutes

Our House Dam (Inundation Studies done in 1998)

a. Method

(1) Spillway routing calculations show that the spillway of Our House Dam can pass the Probable Maximum Flood (PMF) with adequate freeboard. Therefore, this dam is assumed not to fail during the PMF.

(2) Failure during fair weather was assumed to be "sudden", opening a breach roughly the size and shape of the canyon. The resulting hydrograph was generated by a computer program which utilizes, in general, the methods of the National Weather Service model "DAMBRK" and the US Army Corps of Engineers' "HEC-1".

(3) Routing of the dambreak hydrograph was performed by a computer model which utilizes the Muskingum Method of hydrologic routing, combined with tables of flow rate and flow area vs water surface elevation.

b. Assumptions

(1) Inflow to the reservoir was assumed to be the average annual flow of 343 cfs. The breach was assumed to be completely formed in 10 minutes.

(2) When it was completely formed, the trapezoidal breach had a base width of 67 feet and side slopes of 1.4286 (horizontal) to 1 (vertical).

c. Domino Effect

(1) No concurrent failure of Englebright Dam was assumed because it was determined that the peak dam break flow at that point would be less than the peak PMF flow.

d. Justification of Assumptions

(1) For concrete dams, it is usual to assume that the breach fully forms in a period of 10 minutes or so and that the breach essentially destroys the dam, i.e. the breach opening simulates the canyon.

e. Elevation View

(1) See Figure 2.

f. Special Considerations (N/A)

g. Other Information (N/A)

h. Results of Dam Break Analysis

(1) The dam break hydrograph was routed down the Middle Yuba River canyon to the mouth of Oregon Creek and then routed about four miles further, using a larger base flow. The peak discharge was 36,000 cfs and the velocity of the flood wave was 12 feet per second. Travel time for the flood wave to reach Highway 49 is 1 hr 5 min. At that point the maximum water elevation is 1,438 feet.

i. Termination of Flood Routing

(1) Routing was terminated about four miles downstream of the Mouth of Oregon Creek.

Log Cabin Dam (Inundation Studies done in 1998)

a. Method

(1) Spillway routing calculations show that the PMF results in overtopping of Log Cabin Dam with a water depth of about one foot. The overtopping would have a duration of several hours. Concrete arch dams have been known to withstand this type of overtopping without damage. Also, Log Cabin Dam would be resistant to damage during overtopping because it is constructed in sound rock and there is little or no erosion potential. Nevertheless, a failure analysis was made, assuming the dam to fail during the PMF.

(2) Failure during the PMF and during a fair weather earthquake were both assumed to occur relatively quickly with the breach generally conforming to the shape of the canyon.

(3) Hydrographs were generated by the same computer program used for Our House Dam. Downstream routing was also accomplished with the same computer model used for Our House Dam.

(4) At the junction of the Middle Yuba River and Oregon Creek, routing was stopped and restarted using a different base flow. Routing was continued to a point about four miles downstream of the junction of Oregon Creek at which point it

was determined that neither the flows from Log Cabin Dam nor the flow from Our House Dam were a significant threat. The two dams were not considered to fail simultaneously.

b. Assumptions

(1) Inflow to the reservoir was assumed to be 78 cfs (average annual flow) for the fair weather failure and 19,000 cfs for the PMF flood failure. In each case the breach was assumed to be fully formed in 10 minutes. The trapezoidal breach, when fully formed, had a base width of 80 feet and side slopes of 0.8974 (horizontal) to 1 (vertical).

c. Domino Effect

(1) No concurrent failure of Englebright Dam was assumed because it was determined that the peak dambreak flow at that point was not significantly greater than the peak PMF flow peak.

d. Justification of Assumptions

(1) For concrete dams, it is usual to assume that the breach fully forms in a period of 10 minutes or so and that the breach essentially destroys the dam, i.e. the breach opening simulates the canyon.

e. Elevation View - See Figure 3.

f. Special Considerations (N/A)

g. Other Information (N/A)

h. Results of Dam Break Analysis

(1) The dambreak hydrographs for both the fair weather and the PMF conditions were routed down Oregon Creek and then down the Middle Yuba River.

(2) Fair Weather: Peak discharge was 13,000 cfs and the velocity of the flood wave was 10 feet per second. Travel time to the sawmill was 22 minutes and the water elevation at that point was 1,779 feet. Travel time to Highway 49 was 50 minutes and the water elevation at that point was 1,434 feet.

(3) PMF: Peak discharge was 38,000 cfs and the velocity of the flood wave was 17 feet per second. Travel time to the

sawmill was 17 minutes and the water elevation at that point was 1,789 feet. Travel time to Highway 49 was 35 minutes and the water elevation at that point was 1,469 feet.

i. Termination of Flood Routing

(1) Routing was terminated about four miles downstream of the mouth of Oregon Creek.

2. Inundation Maps

a. The HEC-RAS model results were exported and converted into a GIS format, and then imported into ArcGIS 9.1 to delineate the approximate inundation areas on the EAP maps. Users of the maps should understand that the inundation lines and other information on the map reflect the specific assumptions made in developing and applying the HEC-RAS model. These assumptions are conservative and are intended to reflect a particularly severe breach condition. However, in an actual dam break emergency, contingencies such as tributary flooding, debris or other blockages to flow, or channel erosion could affect the depth and extent of flooding. Floodplain maps for both the normal flow and the PMF conditions are included in this Emergency Action Plan (EAP).

b. Maps for Our House Dam were made with base flows of 343 cfs down to Oregon creek and 421 cfs below Oregon Creek.

c. Maps for Log Cabin Dam were made with PMF based flows of 19,000 cfs in Oregon Creek and 133,000 cfs in the Middle Yuba River and with fair weather base flows of 78 cfs in Oregon Creek and 421 cfs in the Middle Yuba River.

d. Inundation boundaries were plotted at each cross section by knowing the relationship between flow rate and elevation at each station. Boundaries between stations were connected to simulate a uniform boundary with due regard to topography.

B. PLANS FOR TRAINING, EXERCISING, UPDATING & POSTING THE EAP

1. Annual Training

a. Annual training will be provided to all permanent power project employees by the Power System Manager during December each year. The program will include discussions of procedures to be followed, the chain of command when the plant is under YCWA and PG&E control, and will include the following elements:

(1) The procedural differences for "Failure is Imminent or Has Occurred" and "Potentially Hazardous Situation is Developing"
(2) Potential types of emergencies
(3) Authority to take action and chain of command
(4) Notification procedure and priority of notification
(5) Communication systems available
(6) Steps to be taken to reduce impact
(7) Complete review of EAP and location of EAPs
(8) Alternate sources of power to operate gates and valves
(9) Chain of command during YCWA and PG&E control

2. Exercising

a. Each year the notification phone numbers will be verified by Yuba County Water Agency Operators to ensure that all critical personnel and contact numbers are accurate.
b. All remote sensing equipment will be tested and local officials will be contacted.
c. The General Manager will determine whether or not the test is successful.

3. Updating

a. The Power System Manager, prior to December 31 each year, shall:

(1) Review the EAP and make changes as appropriate.
(2) Provide the FERC Regional Director a statement that the EAP has been thoroughly reviewed, and include any revisions and updates or a statement that none are needed.
(3) Hold an annual face-to-face meeting (as a group, in

subgroups or individually) with the emergency responders on our contact list to discuss the EAP and to provide the annual EAP updates. Personally update their EAP plans during the meeting and destroy all outdated information.

(4) By December 31 each year, submit a report to the Regional Director on the face-to-face meeting including, who , when, how the meeting was held, what was discussed, questions from the emergency responders and a statement verifying that the EAP plans have been updated and all outdated copies were destroyed.

(5) Additionally, provide the Regional Director with a statement indicating the date the EAP was last tested and the date of training sessions held with list of personnel involved and a summary of topics discussed.

4. Posting of the Notification Flow Chart

a. Posting the EAP - Page Hensley, Assistant Manager Administration is assigned the responsibility for preparation of revisions of the plan. Up-to-date copies of the flow chart and the notification list will be posted at:

(1) Colgate Powerhouse Control Room
(2) YCWA Colgate Office
(3) New Bullards Bar Dam Spillway Gate House
(4) Narrows 2 Powerhouse Control Room
(5) YCWA Marysville Office

b. Complete copies of the EAP will be available at:

(1) Colgate Powerhouse Control Room
(2) YCWA Colgate Office (Power Project Manager)
(3) New Bullards Bar Dam Spillway Gate House
(4) Narrows 2 Powerhouse Control Room
(5) YCWA Marysville Office (General Manager)
(6) PG&E Wise Powerhouse Control Room
(7) PG&E Auburn Hydro Office
(8) Yuba County Sheriff's Office
(9) Yuba County Office of Emergency Services
(10) YCWA Power Project Manager's home
(11) YCWA General Manager's home

C. SITE SPECIFIC CONCERNS

1. Failure of Log Cabin Dam - Downstream residents with physical addresses

   a. Sierra Mountain Mills, 530-288-3281, Celestial Valley Road, 1.0 mile north of intersection with Ridge Road, Camptonville, CA 95922

   b. Merle Butz, 530-288-3545, Celestial Valley Road, 1.0 mile north of intersection with Ridge Road, Camptonville, CA 95922

   c. Troy Hamlin, 530-288-3227, Celestial Valley Road, 0.6 mile north of intersection with Ridge Road, Camptonville, Ca 95922

   d. Lois Butz, 530-288-3564, Celestial Valley Road, 0.6 mile north of intersection with Ridge Road, Camptonville, Ca 95922

   e. John Swinney, 530-288-3566, 15532 Walker Mill Road, 0.3 mile north of intersection with Ridge Road, No. San Juan, CA 95960

   f. Dean Walker, 530-432-0457, Walker Mill Road, 0.3 mile north of intersection with Ridge Road, No. San Juan, CA 95960

   g. Mary McComber, 530-288-3578, Celestial Valley Road, 0.3 mile north of intersection with Ridge Road, Camptonville, CA 95922

   h. Douglas Bigley, 530-288-3226, Celestial Valley Road, 0.1 mile north of intersection with Ridge Road, Camptonville, Ca 95922

   i. Robert Clayton, 530-288-3318, 14855 Ridge Road, 0.2 mile east of intersection with Highway 49, No. San Juan, CA 95960

   j. Tenants, 14786 Ridge Road, 0.2 mile east of intersection with Highway 49, No. San Juan, CA 95960

   k. Daniel Worden, 530-288-3240, Ridge Road, 0.2 mile east of intersection with Highway 49 No. San Juan, CA 95960

l. E.G. Trimpey, 530-292-3650, 31610 Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, Ca 95959

m. Tenants, 36124 Highway 49, Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

n. Carol Chadima, 530-292-3697, 31564 Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

o. Norman L. & Dolores A. Storr, 530-292-3800, 31566 State Highway 49, Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, Ca 95959

p. Albert & Alice Good, 530-292-3318, 31533 Drunken Miners Road, 0.2 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

q. David Sandoval, 530-292-3624, 31515 Drunken Miners Road, 0.2 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

r. Victor LaPorte, 530-288-3541, 14110 Moonshine Road, 0.4 mile south of Highway 49, Camptonville, CA 95922

s. John Dobbins, 530-273-0464, Moonshine Road, 0.5 mile south of Highway 49, Camptonville, CA 95922

t. Leonard Jusinski, 530-288-3639, 14088 Moonshine Road, 0.6 mile south of Highway 49, Camptonville, Ca 95922

u. Siefgried W. & Cheri Knoll, 530-292-3685, 30998 State Highway 49, Drunken Miners Road, 0.7 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

v. Wilton Dyer, 530-288-3559, Moonshine Road, 1.3 miles south of Highway 49, Camptonville, CA 95922

w. Tenants, Moonshine Road, 1.6 miles south of Highway 49, Camptonville, Ca 95922

x. Roger Elam, 530-288-3441, Moonshine Road, 1.7 miles south of Highway 49, Camptonville, Ca 95922

2. Failure At Our House Dam - Downstream residents with physical addresses:

a. E. G. Trimpey, 530-292-3650, 31610 Drunken Miners Road, 0.1 mile south of intersection of Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, Ca 95959

b. Tenants, 36124 Highway 49, Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

c. Carol Chadima, 530-292-3697, 31564 Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge. Nevada City, CA 95959

d. Norman L. & Dolores A. Storr, 530-292-3800, 31566 State Highway 49, Drunken Miners Road, 0.1 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, Ca 95959

e. Albert & Alice Good, 530-292-3318, 31533 Drunken Miners Road, 0.2 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

f. David Sandoval, 530-292-3624, 31515 Drunken Miners Road, 0.2 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

g. Victor LaPorte, 530-288-3541, 14110 Moonshine Road, 0.4 mile south of Highway 49, Camptonville, CA 95922

h. John Dobbins, 530-273-0464, Moonshine Road, 0.5 mile south of Highway 49, Camptonville, CA 95922

i. Leonard Jusinski, 530-288-3639, 14088 Moonshine Road, 0.6 south of Highway 49, Camptonville, Ca 95922

j. Siefgried W. & Cheri Knoll, 530-292-3685, 30998 State Highway 49, Drunken Miners Road, 0.7 mile south of intersection with Highway 49, 0.4 mile south of Yuba River bridge, Nevada City, CA 95959

k. Wilton Dyer, 530-288-3559, Moonshine Road, 1.3 miles south of Highway 49, Camptonville, CA 95922

l. Tenants, Moonshine Road, 1.6 miles south of Highway 49,

Camptonville, Ca 95922

m. Roger Elam, 530-288-3441, Moonshine Road, 1.7 miles south of Highway 49, Camptonville, Ca 95922

3. Residences below Log Cabin and Our House will be called by the Sheriff's Office if a failure occurs. At the same time, Sheriff Deputies will notify residents in person.

4. The Yuba County Water Agency has funded an automatic dialing system and tape message system for the Yuba County Office of Emergency Services to expedite the phoning process in an emergency.

D. Documentation

1. Copies of correspondence with public agencies regarding the implementation of the EAP. The majority of the responses were telephone conversations that primarily verified persons to contact and their telephone numbers.

2. The key element for the effective implementation of the EAP is coordination with Yuba County Public Safety personnel. A meeting was held with Yuba County Sheriff'S Office and Yuba County Emergency Services personnel. A number of notification procedures and methods to strengthen communications were incorporated into the plan as a result of that meeting.

E. Purpose for Notarized Statement

The Emergency Action Plan, required by the Federal Energy Regulatory Commission, is to be reviewed and the contacts and phone numbers are to be updated annually. The Emergency Action Plan is to be reviewed by the General Manager every five years, and verified by a signature page notarized by a California Notary Public.

F. Approval of the EAP

1. Verification of Yuba County Water Agency

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.

Curt Aikens
General Manager Curt Aikens

Sworn to and subscribed before me this 20th day of December, 2004.

See Attached All-Purpose Acknowledgement

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Yuba } ss.

On 12-20-2004 (Date), before me, Brenda Lee Wright, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Curt Steven Aikens (Name(s) of Signer(s))

☐ personally known to me

☒ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

BRENDA LEE WRIGHT
Commission # 1318021
Notary Public - California
Yuba County
My Comm. Expires Aug 16, 2005

WITNESS my hand and official seal.

Brenda Lee Wright
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Emergency Action Plan

Document Date: 12/20/2004 Number of Pages: 42

Signer(s) Other Than Named Above: None

Capacity(ies) Claimed by Signer

Signer's Name: Curt Steven Aikens

☒ Individual

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Attorney in Fact

☐ Trustee

☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: Yuba County Water Agency

RIGHT THUMBPRINT OF SIGNER
Top of thumb here