

Incident Status Summary (ICS-209)

Incident: **Spillway - DWR Assist**

1. Incident Name: Spillway - DWR Assist		2. Incident Number: CA-CDF-000114	
3. Report Version (check one box): Initial <input checked="" type="checkbox"/> Update Final	4. Incident Commander(s) & Agency or Organization: Lawson/Whitlock/Honea	5. Incident Management Organization: Type 1 Team <input checked="" type="checkbox"/> Unified Command	6. Incident Start Date/Time: Date: 02/07/2017 Time: 1400 PST
7. Current Incident Size or Area Involved (use unit label – e.g., "Acres", "Square Miles"): 4002 Acres	8a. Percent (%) Contained or Completed: 0 %	9. Incident Type: Other B. Incident Description: Oroville Dam compromised spillway C. Cause: Unknown D. Fire Suppression Strategy:	10. Incident Complexity Level: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Complex CALFIRE Incident Management Team 3 assigned in Unified Command with Department of Water Resources and Butte County Sheriff's Office.
	8b. Total Percentage (%) of Perimeter that will be Contained or Completed: 0 %		
12. Prepared By: Print Name: Todd Tuggle - SITL (T) Date/Time Prepared: 02/19/2017 1745 PST		13. Approved By: Print Name: Barry Biermann - IC Signature:	
14. Date/Time Submitted: 02/19/2017 1752 PST		15. Primary Location, Organization, or Agency Sent To: California Department of Forestry/CALFIRE	
16. State: CA	17. County / Parish / Borough: Butte	18. City: Oroville	
19. Unit or Other: Oroville Field Division	20. Incident Jurisdiction: DWR	21. Incident Location Ownership (if different than jurisdiction):	
22. Latitude/Longitude: Latitude: 39° 32' 22" Longitude: 121° 29' 49"	23. US National Grid Reference: Grid Zone: x-Coordinate: y-Coordinate:	24. Legal Description: Principal Meridian: Mt. Diablo Township: 19N Range: 4E Section: 2 1/4 Sec: of 1/4 Sec: NW	
25. Short Location or Area Description (list all affected areas or a reference point): Oroville Dam Spillway, Feather River and Thermalito diversion pool.		26. UTM Coordinates: Zone: 10 Easting: 629160 Northing: 4377732	
27. Note any geospatial data available (indicate data format, content, and collection time information and labels):			

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28. Observed Fire Behavior or Significant Events for the Time Period Reported (describe fire behavior using accepted terminology. For non-fire incidents, describe significant events related to the materials or other causal agents):

Narrative:

Spillway outlet flows of 55,000 cfs were increased to 60,000 cfs at 1400 hrs today because of the projected inflow increases over the next couple of days. At the Hyatt Power Plant, tailrace elevation rose due to the increased outflows, tailrace elevation (WSE) was 252.77 ft at 1600 hrs. At 1600 hrs lake level was at 851.57 ft, with freeboard below the emergency spillway crest at approximately 49.43 ft.

29. Primary Fuel Model, Materials, or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc):

Narrative:

Water, concrete, soil/dirt, trees, and debris are the main hazards to the spillways and downstream infrastructure.

30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc):

The power plant, if severely damaged, has the potential to create significant human, cultural, environmental, and economic impacts. Work is being done to reinforce the emergency spillway from erosion damage. Cracks were reported on the upper access road above the plunge pool, indicating continued erosion to the left side of the spillway. Large rock and debris is still lodged in the dentates. The Feather River Fish Hatchery moved most aquatic assets to safe areas.

A. Structural Summary	B. # Threatened (up to 72 hrs)	C. # Damaged	D. # Destroyed
E. Single Residences	0	0	0
F. Multiple Residences	0	0	0
G. Mixed Commercial / Residential	0	0	0
H. Nonresidential Commercial Property	0	0	0
I. Other Minor Structures	0	0	0

31. Public Status Summary:

C. Indicate the Number of Civilians (Public) Below:

	Previous Report Total	A. # this Reporting Period	B. Total # to-date
D. Fatalities	0		0
E. With Injuries/Illness	0		0
F. Trapped/In Need of Rescue	0		0
G. Missing	0		0
H. Evacuated	0		0
I. Sheltering in Place	0		0
J. In Temporary Shelters	0		0
K. Have Received Mass Immunizations	0		0
L. Require Immunizations	0		0
M. In Quarantine	0		0

32. Responder Status Summary:

C. Indicate the Number of Responders Below:

	Previous Report Total	A. # this Reporting Period	B. Total # to-date
D. Fatalities	0		0
E. With Injuries/Illness	0		0
F. Trapped/In Need of Rescue	0		0
G. Missing	0		0
H. Evacuated	0		0
I. Sheltering in Place	0		0
J. In Temporary Shelters	0		0
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	Previous Report Total	A. # this Reporting Period	B. Total # to-date		Previous Report Total	A. # this Reporting Period	B. Total # to-date
N. Total # Civilians (Public) Affected:	0		0	N. Total # Responders Affected:	0		0

<p>33. Life, Safety, and Health Status/Threat Remarks: Stabilization work on the area below the emergency spillway continues on the area affected by the uncontrolled release. DWR staff continues to discharge water through the main spillway, causing erosion to the hillside as expected. Maximum recorded lake elevation was 851.57 ft at 1600 hours. Potential future threat continues for the Hyatt Power Plant as spillway flows increased to 60,000 cfs at 1600 hrs on 02/19/2017. Disruption of the Hyatt Power Plant could have significant implications to human, cultural, legal, and economic factors. Among the many impacts, the loss of drinking water is the most pertinent. Contingency planning is under way with OES and DWR Flood Center for potential water level increases below the Thermalito Diversion Dam. California State Parks closed all units and trails of the Lake Oroville SRA except for the Visitor Center, North Forebay and South Forebay. The park was closed for safety due to the condition of the emergency spillway, spillway chute, and construction in the area.</p> <p>35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern): A Flood Warning is in effect for the general area through Wednesday.</p> <p>Sunday A cloudy sky with rain beginning in afternoon with breezier winds from SE 12-16 mph gusting 20-25 mph with gusts into the mid 30s after midnight. Snow levels of 4000-4500 feet creep upward tonight. Precipitation totals of 0.25 at Dam and around 0.75 inches over the Basin.</p> <p>Sunday Night Cloudy with increasing rain and winds. SSE winds 20-30 mph gusting to 30-40 mph. Additional precipitation totals of 0.75 at Dam and around 0.75 and 1.50 inches over the Basin.</p> <p>Monday Widespread moderate to heavy rain and snow with snow levels increasing toward 6000 ft in the afternoon and evening, then lowering toward Tuesday. Strong SSE surface winds 20-30 mph gusting to 30-40 mph with late afternoon evening gusts to 55 mph. Precipitation totals of 2-3 inches at the Dam and 5-7 inches across the River Basin.</p>	<p>34. Life, Safety, and Health Threat Management:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 90%;"></th> <th style="width: 10%;">Active?</th> </tr> </thead> <tbody> <tr><td>A. No Likely Threat</td><td></td></tr> <tr><td>B. Potential Future Threat</td><td style="text-align: center;">X</td></tr> <tr><td>C. Mass Notifications in Progress</td><td></td></tr> <tr><td>D. Mass Notifications Completed</td><td></td></tr> <tr><td>E. No Evacuation(s) Imminent</td><td></td></tr> <tr><td>F. Planning for Evacuation</td><td></td></tr> <tr><td>G. Planning for Shelter-in-Place</td><td></td></tr> <tr><td>H. Evacuation(s) in Progress</td><td></td></tr> <tr><td>I. Shelter-in-Place in Progress</td><td></td></tr> <tr><td>J. Repopulation in Progress</td><td></td></tr> <tr><td>K. Mass Immunization in Progress</td><td></td></tr> <tr><td>L. Mass Immunization Complete</td><td></td></tr> <tr><td>M. Quarantine in Progress</td><td></td></tr> <tr><td>N. Area Restriction in Effect</td><td></td></tr> <tr><td>O. Road Closure</td><td style="text-align: center;">X</td></tr> <tr><td>P. Trail Closure</td><td style="text-align: center;">X</td></tr> <tr><td>Q. Area Closure</td><td style="text-align: center;">X</td></tr> </tbody> </table>		Active?	A. No Likely Threat		B. Potential Future Threat	X	C. Mass Notifications in Progress		D. Mass Notifications Completed		E. No Evacuation(s) Imminent		F. Planning for Evacuation		G. Planning for Shelter-in-Place		H. Evacuation(s) in Progress		I. Shelter-in-Place in Progress		J. Repopulation in Progress		K. Mass Immunization in Progress		L. Mass Immunization Complete		M. Quarantine in Progress		N. Area Restriction in Effect		O. Road Closure	X	P. Trail Closure	X	Q. Area Closure	X
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36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour time frames:

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12 hours:	Spillway outlet flows increased to 60,000 cfs at 1400 hrs because of the projected inflow increases within the next couple of days. Lake levels are at 851.57 ft at 1600 hrs, with flows through the main spillway increasing. Crews will continue repairs to emergency spillway, mitigating impacts from erosion. Hyatt Power Plant personnel will continue ongoing efforts to remove water from the base of the plant. Work on the emergency spillway and Hyatt Power Plant will run 24 hours a day.
24 hours:	With lake levels projected to increase in the next couple of days, flows through the main spillway has increased to 60,000 cfs. Crews will continue repairs to emergency spillway, mitigating impacts from erosion. Hyatt Power Plant personnel will continue ongoing efforts to remove water from the base of the plant. Work on the emergency spillway and Hyatt Power Plant will run 24 hours a day. PG&E and DWR crews will be installing high voltage power lines in the area adjacent to the spillway.
48 hours:	With lake levels projected to increase in the next couple of days, flows through the main spillway has increased to 60,000 cfs. Crews will continue repairs to emergency spillway, mitigating impacts from erosion. Hyatt Power Plant personnel will continue ongoing efforts to remove water from the base of the plant. Work on the emergency spillway and Hyatt Power Plant will run 24 hours a day. PG&E and DWR crews will continue installing high voltage power lines in the area adjacent to the spillway.
72 hours:	With lake levels projected to increase in the next couple of days, flows through the main spillway has increased to 60,000 cfs. Crews will continue repairs to emergency spillway, mitigating impacts from erosion. Hyatt Power Plant personnel will continue ongoing efforts to remove water from the base of the plant. Work on the emergency spillway and Hyatt Power Plant will run 24 hours a day. PG&E and DWR crews will continue installing high voltage power lines in the area adjacent to the spillway.
Anticipated after 72 hours: TBD	

37. Strategic Objectives (define planned end-state for incident):

Work continues on the area below the emergency spillway, the monoliths, access roads and the various gullies created during the emergency spillway runoff. Crews are rapidly completing work in preparation for a potential overtop of the emergency spillway. Multiple crews are dredging both upstream and downstream from the base of the main spillway to reduce backflow in Hyatt Power Plant. Hyatt power plant crews remain active 24 hours a day in preventing the impacts of high water in the tailrace and are employing mitigation measures of water in the power plant. O&M crews continue to remove debris from Thermalito diversion dam and power canal.

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts:

12 hours: **Lake levels fell to 851.57 ft approximately 49.43 ft below the spillway height at 901 ft. DWR drone flights were cancelled today. Data from Engineering and imagery ensure proper implementation of the Emergency Spillway Erosion Plan. The Plan depicts predetermined repair priorities identified by need. Every effort is being made to have repairs completed if the emergency spillway were to overtop again. The top of the main spillway is at 817 ft. The flow was increased to 60,000 cfs today. The two downhill roads from the emergency spillway have been significantly eroded with one being washed out. Due to the continued erosion to the main spillway, monitoring continues by DWR geology/engineering departments. The tailrace elevation has increased slightly to 252.77 ft by 1600 hours, just above the desired 252 ft at the Hyatt Power Plant. Barges and cranes are being mobilized to remove debris in the tailrace. Power plant flooding is being mitigated by sandbagging and pumps placed around stoplog slots. Pumping operations continue to be successful within the power plant. Uprooted trees remain lodged in the Thermalito Diversion Dam. Contractors are assessing how to remove**

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blockage, which has been difficult due to weight limitations of Thermalito Dam crossing. The Feather River Hatchery staff reports show that turbidity levels are down considering the sediment flow and fish are healthy and feeding. The Hatchery has lost power but running on a standalone generator. The intake and supply lines to the hatchery are not working to capacity, possibly due to sediment. 1 million Endangered Steelhead trout eggs, still in hatchery pools, are being supplemented with de-chlorinated hydrant water in a closed loop system since they can't be moved safely. 2 million endangered spring run Chinook Salmon and 3 million fall run Chinook salmon were moved to the Thermalito Annex facility away from the river. Fish will be tagged at the Annex facility. 3 million out of 6 million fall run Chinook salmon remain at the hatchery due to the annex being at capacity. If conditions worsen or turbidity levels rise, a decision will be made to release the 3 million remaining Chinook salmon into the river to increase chances for survival. Hatchery staff, pathologists and veterinarians continue to remain on site to monitor fish health. California State Parks is working with local cultural groups that potentially were affected by the use of the emergency spillway and update them on current conditions. There were several cultural impacts identified that could be affected, consultation is being done and plans designed to minimize impacts and potential damage are in place. The trail system directly affected by the damaged spillway include the Brad Freeman and Dan Beebe Trails and have been closed, along with a portion of Oroville Lake directly above the spillways. Ranger staff are providing roving patrols due to a large number of contacts in the closed area. Impacts to the park include soil erosion, water turbidity downstream, and tree and vegetation removal.

24 hours: **Same as above.**

48 hours: **Same as above.**

72 hours: **Same as above.**

Anticipated after 72 hours: **Same as above.**

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours: **N/A**

24 hours: **N/A**

48 hours: **N/A**

72 hours: **N/A**

Anticipated after 72 hours: **N/A**

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

- 1) critical resource needs identified above,
- 2) the Incident Action Plan and management objectives and targets,
- 3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

DWR construction crews will continue work to remediate the emergency spillway erosion. Crews continue to prevent major flooding of the Hyatt Power Plant through sandbagging and water removal. Maintaining operational integrity of the Hyatt Power Plant, which serves drinking water to a significant population in California, farmers throughout the valley, and sustains ecological resources, remains a key priority of DWR crews. Despite increased flows to 60,000 cfs, mitigation efforts continue on the debris pile at the base of the spillway.

41. Planned Actions for Next Operational Period:

Spillway operations to continue at 60,000 cfs depending on amount of erosion observed and lake levels. Maintain Hyatt Power Plant integrity. Clear debris at Thermalito Diversion Dam. Continue to push access roads downstream on the left side of diversion pool and dredge the debris pile at the base of the spillway.

42. Projected Final Incident Size/Area (use unit label – e.g., "Acres", "Square Miles"):

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43. Anticipated Incident Containment or Completion Date: 02/28/2017
44. Projected Significant Resource Demobilization Start Date: 02/22/2017
45. Estimated Incident Costs to Date: \$22,800,000.00
46. Projected Final Incident Cost Estimate:
47. Remarks (or continuation of any blocks above – list block number in notation): Personnel counts increased due to improved accountability of DWR peronnel.
49. Resources (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box):

48. Agency or Org		CRC	MCC	GISU	50. Ovhd	51. Tot Pers
C&L	Rsrc	0	0	0		
	Pers	0	0	0	14	14
CA	Rsrc	3	0	0		
	Pers	41	0	0	352	393
CA-CDF	Rsrc	0	0	0		
	Pers	0	0	0	57	57
PRI	Rsrc	0	0	1		
	Pers	0	0	1	0	1
52. Total Resources		3	0	1		465

53. Additional Cooperating and Assisting Organizations Not Listed Above:
Butte County OES, Caltrans, PG&E, CHP, California State Parks, Oroville Police Department, Oroville Fire Department, California Fish & Wildlife, Army Corps of Engineers, Federal Energy Regulatory Commission, Oroville Hospital, Red Cross, California Conservation Corps, California National Guard, Bureau of Indian Affairs, CAL OES.