

## Incident Status Summary (ICS-209)

Incident: **Spillway - DWR Assist**

1. Incident Name: <b>Spillway - DWR Assist</b>		2. Incident Number: <b>CA-CDF-000114</b>									
3. Report Version (check one box): Initial <input checked="" type="checkbox"/> Update Final	4. Incident Commander(s) & Agency or Organization: <b>Lawson/Whitlock/Honea</b>	5. Incident Management Organization: <b>Type 1 Team</b>  <input checked="" type="checkbox"/> Unified Command	6. Incident Start Date/Time: Date: <b>02/07/2017</b> Time: <b>1400 PST</b>								
7. Current Incident Size or Area Involved (use unit label – e.g., “Acres”, “Square Miles”): <b>4002 Acres</b>	8a. Percent (%) Contained or Completed: <b>0 %</b>	9. Incident Type: <b>Other</b> B. Incident Description: <b>Oroville Dam compromised spillway</b> C. Cause: <b>Unknown</b> D. Fire Suppression Strategy:	10. Incident Complexity Level: <input checked="" type="checkbox"/> Single Complex	11. Report Time Period: From Date/Time: <b>02/18/2017 0600 PST</b> To Date/Time: <b>02/18/2017 1800 PST</b>							
	8b. Total Percentage (%) of Perimeter that will be Contained or Completed: <b>0 %</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Strategy</th> <th style="width: 50%;">Percent (%)</th> </tr> </thead> <tbody> <tr> <td>Monitor</td> <td></td> </tr> <tr> <td>Confine</td> <td></td> </tr> <tr> <td>Point Zone Protection</td> <td></td> </tr> <tr> <td>Full Suppression</td> <td></td> </tr> </tbody> </table>	Strategy	Percent (%)	Monitor		Confine	
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12. Prepared By: Print Name: <b>Todd Tuggle - SITL (T)</b> Date/Time Prepared: <b>02/18/2017 1730 PST</b>		13. Approved By: Print Name: <b>Barry Biermann - IC</b> Signature: _____									
14. Date/Time Submitted: <b>02/18/2017 1740 PST</b>		15. Primary Location, Organization, or Agency Sent To: <b>California Department of Forestry/ CALFIRE</b>									
16. State: <b>CA</b>	17. County / Parish / Borough: <b>Butte</b>		18. City: <b>Oroville</b>								
19. Unit or Other: <b>Oroville Field Division</b>	20. Incident Jurisdiction: <b>DWR</b>	21. Incident Location Ownership (if different than jurisdiction):									
22. Latitude/Longitude: Latitude: <b>39° 32' 22"</b> Longitude: <b>121° 29' 49"</b>	23. US National Grid Reference: Grid Zone: x-Coordinate: y-Coordinate:		24. Legal Description: Principal Meridian: <b>Mt. Diablo</b> Township: <b>19N</b> Range: <b>4E</b> Section: <b>2</b> 1/4 Sec: of 1/4 Sec: <b>NW</b>								
25. Short Location or Area Description (list all affected areas or a reference point): <b>Oroville Dam Spillway, Feather River, and Thermalito diversion pool.</b>			26. UTM Coordinates: Zone: <b>10</b> Easting: <b>629160</b>								

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	Northing: <b>4377732</b>
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27. Note any geospatial data available (indicate data format, content, and collection time information and labels):

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 flows were reduced from 70,000 cfs to 55,000 cfs causing tailrace elevations to drop throughout the afternoon to 251.45' as of 1600. Inflows rose due to precipitation in the area. Hyatt Power Plant water removal tactics continue to work effectively. Debris removal at the spillway base and Thermalito Diversion Dam continue. Reduced flows allowed assessment team to view debris buildup behind dentates at the of spillway.**

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

Narrative:

**Water, concrete, soil/dirt, trees, 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 main spillway debris continues to impede uniform downstream flow creating elevated tailrace levels of 251.45' at Hyatt Power Plant. The power plant, if severely damaged, has the potential to create severe human, cultural, environmental and economic impacts. Work is being done to reinforce the emergency spillway from erosion damage. The Feather River Fish Hatchery moved most aquatic assets to safe areas. California State Parks closed trails around the spillways and portions of the lake where necessary.**

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

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
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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
J. In Temporary Shelters	0		0	J. In Temporary Shelters	0		0
K. Have Received Mass Immunizations	0		0	K. Have Received Mass Immunizations	0		0
L. Require Immunizations	0		0	L. Require Immunizations	0		0
M. In Quarantine	0		0	M. In Quarantine	0		0
<b>N. Total # Civilians (Public) Affected:</b>	<b>0</b>		<b>0</b>	<b>N. Total # Responders Affected:</b>	<b>0</b>		<b>0</b>

<p>33. Life, Safety, and Health Status/Threat Remarks:  <b>Work on the emergency spillway continues due to Oroville Lake receding from the emergency spillover height. DWR staff continues to discharge water through the main spillway, causing erosion to the hillside as expected. Lake elevation levels continue trending downward from maximum recorded height to 854.1' at 1600 hours. Potential future threat continues for the Hyatt power plant. 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.</b></p>	<p>34. Life, Safety, and Health Threat Management:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 85%;"></th> <th style="width: 15%;">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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<p>35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern):  <b>Saturday</b>                  Cloudy with rain most of the day totaling around 0.50 inches at the Dam and 1-2 inches across the Feather River Basin. Snow levels hovered around 5500-6000 feet. Fairly light SSE winds with only gusts into the low teens. Area wide flood warning through Wednesday.</p> <p><b>Saturday Night</b>                  Mostly cloudy becoming cloudy with light showery activity, especially over the Basin with less than 0.25 inches of precipitation. Snow levels lower to 4500 feet by morning. SSE winds gradually increased with gusts to 15-20 mph after midnight. Area wide flood warning through Wednesday.</p> <p><b>Sunday</b>                  A mostly cloudy sky with isolated to scattered light showers and breezier winds from SE 8-15 mph gusting 15-25 mph. Snow levels briefly lower to around 4500-5000 feet before creeping upward tonight. Precipitation totals of 0.25 inches at the Dam and around 0.75 inches over the watershed. Area wide flood warning through Wednesday.</p>																																					

<p>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:</p>
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12 hours:	With lake levels dropping to 854.10' at 1600 below the spillway, flow through the main spillway was dropped to 55,000 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.
24 hours:	With lake levels dropping to 854.10' at 1600 Feb 18th below the spillway, flow through the main spillway was dropped to 55,000 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 are removing and moving power lines in the area adjacent to the spillway.
48 hours:	With lake levels dropping to 854.10' at 1600 below the spillway, flow through the main spillway was dropped to 55,000 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 are removing and moving power lines in the area adjacent to the spillway.
72 hours:	With lake levels dropping to 854.10' at 1600 hrs., flow through the main spillway was dropped to 55,000 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 are removing and moving power lines in the area adjacent to the spillway. Crews will be assessing lake levels due to significant projected inflows.
Anticipated after 72 hours: <b>TBD</b>	

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 working 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 854.10', 46.9' below the spillway height at 901'. DWR drone was 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'. The flow was dropped to 55,000 cfs today. The 2 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 dropped to 251.45' by 1600 hours, just below the desired 252' 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 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

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<p>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 effected 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.</p>
24 hours: <b>Same as above.</b>
48 hours: <b>Same as above.</b>
72 hours: <b>Same as above.</b>
Anticipated after 72 hours: <b>Same as above.</b>
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: <b>N/A</b>
24 hours: <b>N/A</b>
48 hours: <b>N/A</b>
72 hours: <b>N/A</b>
Anticipated after 72 hours: <b>N/A</b>
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. <b>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. Reduced flows of 55,000 cfs are allowing mitigation efforts of the debris pile at the base of the spillway to proceed and assessment of the damaged spillway to commence.</b>
41. Planned Actions for Next Operational Period: <b>Spillway operations to continue at 55,000 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.</b>
42. Projected Final Incident Size/Area (use unit label – e.g., “Acres”, “Square Miles”):
43. Anticipated Incident Containment or Completion Date: <b>02/28/2017</b>
44. Projected Significant Resource Demobilization Start Date: <b>02/22/2017</b>

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45. Estimated Incident Costs to Date: **\$20,000,000.00**

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation):  
**IC's anticipating significant demobilization beginning Tuesday.**

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	13	13
CA	Rsrc	3	0	0		
	Pers	41	0	0	218	259
CA-CDF	Rsrc	0	1	0		
	Pers	0	0	0	55	55
PRI	Rsrc	0	0	1		
	Pers	0	0	1	0	1
<b>52. Total Resources</b>		<b>3</b>	<b>1</b>	<b>1</b>		<b>328</b>

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.**