Incident Status Summary (ICS-209)

Incident: **Spillway - DWR Assist**

1. Incident Name:	2. Incident Number:
Spillway - DWR Assist	**CA-CDF-000114**

3. Report Version (check one box):	4. Incident Commander(s) & Agency or Organization:	5. Incident Management Organization:	6. Incident Start Date/Time:
Initial **X** Update Final	**Lawson/Whitlock/Honea**	**Type 1 Team** **X** Unified Command	Date: **02/07/2017** Time: **1400 PST**

7. Current Incident Size or Area Involved (use unit label – e.g., "Acres", "Square Miles"):	8a. Percent (%) Contained or Completed:	9. Incident Type:	10. Incident Complexity Level:	11. Report Time Period:
4002 Acres	**0 %** b. Total Percentage (%) of Perimeter that will be Contained or Completed: **0 %**	**Other** B. Incident Description: **Oroville Dam compromised spillway** C. Cause: **Unknown** D. Fire Suppression Strategy:	**X** Single Complex **CALFIRE Incident Management Team 3 assigned in Unified Command with Department of Water Resources and Butte County Sheriffs Office.**	From Date/Time: **02/17/2017 0600 PST** To Date/Time: **02/17/2017 1800 PST**

Strategy	Percent (%)
Monitor	
Confine	
Point Zone Protection	
Full Suppression	

12. Prepared By:	13. Approved By:
Print Name: **Todd Tuggle - SITL (T)** Date/Time Prepared: **02/17/2017 1730 PST**	Print Name: **Barry Biermann - IC** Signature:

14. Date/Time Submitted:	15. Primary Location, Organization, or Agency Sent To:
02/17/2017 1745 PST	**California Department of Forestry/ CALFIRE**

16. State:	17. County / Parish / Borough:	18. City:
CA	**Butte**	**Oroville**

19. Unit or Other:	20. Incident Jurisdiction:	21. Incident Location Ownership (if different than jurisdiction):
Oroville Field Division	**DWR**	

22. Latitude/Longitude:	23. US National Grid Reference:	24. Legal Description:
Latitude: **39º 32' 22"** Longitude: **121º 29' 49"**	Grid Zone: x-Coordinate: y-Coordinate:	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):	26. UTM Coordinates:
Oroville Dam Spillway, Feather River, and Thermalito diversion pool.	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:
Lake levels have dropped to approximately 40' below peak lake height of 901' allowing for spillway flow reduction to 70,000 cfs as of 1530 hours. 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.

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 252.07' at Hyatt power plant. The power plant, if severely damaged, could have significant implications to human, cultural, environmental and economic impacts. Work is being done to reinforce the emergency spillway to mitigate a potential breach if water were to overtop in the future. The Feather River Fish Hatchery moved most aquatic assets to safe areas with decision points established to move the balance. 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**
J. In Temporary Shelters	**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
K. Have Received Mass Immunizations	**0**		**0**
L. Require Immunizations	**0**		**0**
M. In Quarantine	**0**		**0**
N. Total # Civilians (Public) Affected:	**0**		**0**

	Previous Report Total	A. # this Reporting Period	B. Total # to-date
K. Have Received Mass Immunizations	**0**		**0**
L. Require Immunizations	**0**		**0**
M. In Quarantine	**0**		**0**
N. Total # Responders Affected:	**0**		**0**

33. Life, Safety, and Health Status/Threat Remarks:

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 858.29' at 1700 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.

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern):

Friday

Cloudy and steady rains totaling 0.75 to 1.15 inches across the Feather river Basin since early morning. Snow levels are around 6000 to 6500 ft. Dam area 20 ft winds were ESE 8-13 mph gusting to 15-20 mph. The National Weather Service issued a Flood Watch for the area from Sunday evening through early Tuesday for heavy rain.

Friday night

Steady rain turned to showers and lightened overnight, accumulating less than 0.40 inches. Snow levels hovered around 6000 ft, adding limited snow accumulation. Winds at the Dam were NE-E 6-9 mph gusting to 10-15 mph.

Saturday

Mostly cloudy with scattered showers, accumulating only around 0.30 inches of rain. Snow levels lower to 4500-5000 ft, only adding minimal snow accumulation. Winds at the Dam were SE 6-9 mph gusting to 10-15 mph.

34. Life, Safety, and Health Threat Management:

	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:

12 hours:	**Lake levels dropped to 858.29' at 1700 hours, over 40' below the spillway. Spillway flow was reduced to 70,000 cfs starting at 1530, with plans to continue that rate through the night. Crews will continue repairs to the emergency spillway, mitigating impacts from erosion. Hyatt power plant personnel will continue ongoing efforts to remove water from the base of the plant. Divers entered the plant today, preventatively opening the bulkhead door to relieve pressure in the river valve chamber. Work on the emergency spillway and Hyatt power plant will run 24 hours a day.**
24 hours:	**Lake levels dropped to 858.29' at 1700 hours, over 40' below the spillway. Spillway flow was reduced to 70,000 cfs starting at 1530, with plans to reassess Feb 18th. Crews will continue repairs to the emergency spillway, mitigating impacts from erosion. Hyatt power plant personnel will continue ongoing efforts to remove water from the base of the plant. Divers entered the plant today, preventatively opening the bulkhead door to relieve pressure in the river valve chamber. Work on the emergency spillway and Hyatt power plant will run 24 hours a day. PG&E and DWR crews are removing and moving lines in the area adjacent to the spillway.**
48 hours:	**Lake levels dropped to 858.29' at 1700 hours, over 40' below the spillway. Spillway flow was reduced to 70,000 cfs starting at 1530, with plans to reassess Feb 18th. Crews will continue repairs to the 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 lines in the area adjacent to the spillway.**
72 hours:	**Lake levels dropped to 858.29' at 1700 hours, over 40' below the spillway. Spillway flow was reduced to 70,000 cfs starting at 1530, with plans to reassess Feb 18th. Crews will continue repairs to the 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 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 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 858.29' at 1700 hours, over 40' below the spillway height at 901'. DWR drone flights continue to be active and vital to construction efforts. 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 70,000 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**

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departments. Continued erosion threatens DWR power lines. The tailrace elevation has dropped to 252.07' by 1600 hours, nearing the 252' spill height 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 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.

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. Debris removal operations continue at the controlled spillway radial gates. Divers entered the plant today, preventatively opening the bulkhead door to relieve pressure in the river valve chamber. Crews continue to prevent major flooding to the Hyatt power plant electrical components 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. Flow were reduced to 70,000 cfs today, supporting

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mitigation efforts of the debris pile.

41. Planned Actions for Next Operational Period:
Spillway operations to continue at 70,000 cfs depending on amount of erosion observed and observed lake levels. Maintain Hyatt power plant integrity. Clear debris at Thermalito Dam. Continue to push access roads downstream on the left side of diversion pool.

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

43. Anticipated Incident Containment or Completion Date: **02/28/2017**

44. Projected Significant Resource Demobilization Start Date:

45. Estimated Incident Costs to Date: **$17,100,000.00**

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation):
Estimated incident costs to date include an adjustment from DWR of $10,000,000 for services rendered February 9 through February 14, 2017.

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	MKU	GISU	50. Ovhd	51. Tot Pers
C&L	Rsrc	0	0	0	0		
	Pers	0	0	0	0	11	11
CA	Rsrc	3	0	0	0		
	Pers	41	0	0	0	139	180
CA-CDF	Rsrc	0	1	1	0		
	Pers	0	0	20	0	59	79
PRI	Rsrc	0	0	0	1		
	Pers	0	0	0	1	0	1
52. Total Resources		3	1	1	1		271

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.