STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS

INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

Name of Dam Peters Dam No. 33-7 County Marin
Type of Dam ERTH Type of Spillway Concrete weir and chute
Water is 2.9 feet above the spillway crest and 11.9 feet below the dam crest.

Weather Conditions Overcast with light rain
Contacts Made Lucy Croy, Trinity Leonard, Carl Sanders, and Ronnie Chasteen during the inspection
Reason for Inspection Periodic Evaluation

Important Observations, Recommendations or Actions Taken

Overall care and maintenance of the dam and appurtenances is excellent.

A large redwood log that has drifted into and was caught on the right side of the concrete spillway control weir requires removal.

Conclusions

From the known information and visual inspection, the dam, reservoir, and the appurtenances are judged safe for continued use.

Observations and Comments

Dam

The visible portion of the upstream face, crest, downstream face, and abutments are in satisfactory condition with no indication of surficial distress or instability. The large boulder rock riprap upstream face protection remains in good condition.

Vegetation control is excellent, and the crest, groins, and downstream face of the embankment are covered with ankle tall grass and other low ground cover that protect against erosion without hindering inspection and monitoring for seepage and other defects. Similar to recent past inspections, rodent control remains satisfactory and few to no indications of rodent activity were observed.

The roadway cut and hillside above the outlet tower shows no obvious signs of renewed movement. Past sliding at this location during a winter storm has reportedly caused damage to the outlet valve controls.

Spillway

There was approximately 2.9 feet of flow over the spillway control weir. The approach and exit channel were clear and unobstructed; a large redwood log that has drifted into and was caught on the right side of the concrete spillway control weir requires removal. The concrete walls and invert could not be inspected due to flow within the spillway, but they were inspected during the previous inspection on 5 April 2016 and were found to be in good condition at that time.

The original spillway, now used as a discharge chute for the 60" diameter upper level outlet, remains in satisfactory condition.

The current design storm, prepared in 1981, is for a 170,000 year return period producing 19,900 cfs (~947 cfs / sq mi) from the 22.1 square mile drainage area. The spillway capacity is ~20,900 cfs which is slightly greater than the peak inflow. Total freeboard is 15 feet and the residual freeboard for the design storm is 2.5 feet. Freeboard is satisfactory.

Photos taken? Yes X No
cc for Owner/Book

Inspected by J. Lowe 13 Feb 2017
Date of Inspection 7 February 2017
Date of Report 13 February 2017 2/21/17
RCB 2/21/17

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Observations and Comments

Outlet

Upstream control for the fully encased normally pressurized outlet is provided by six 30-inch gate valves arrayed along a 48-inch diameter inclined inlet tower at elevations of 345.0', 333.5', 320.0', 295.0', 260.0', and 215.0', and by a 36-inch butterfly valve at elevation 379.5'. Downstream control for the inclined tower is provided by a 36-inch diameter butterfly valve near the left downstream toe of the embankment. A separate high-level outlet controlled on both the upstream and downstream sides by two 60-inch diameter butterfly valves provides additional outlet control.

None of the outlet controls were cycled during this inspection, but all outlet controls were partially cycled during the 5 April 2016 inspection and were found to be in good operating condition at that time. All outlet controls were fully cycled and found to be in satisfactory operating condition during the February 25, 2015 periodic inspection. Mr. Anaya of the MMWD also performed a full head test of the outlet system on January 26, 2016; this is the first time the outlet has been tested under full reservoir head in over fifteen years.

Seepage

Rainfall prevented evaluation for minor seepage. No evidence of significant seepage was observed along the downstream face, abutments, or groins. Seepage from the single toe drain was estimated to be approximately 60 gpm at the 90-degree V-notch weir.

Seepage over both the V-notch weir and the right and left collar drains was clear and within historic volumes.

Instr.

Instrumentation consists of:

- Sixteen (16) survey monuments distributed along the crest and along a row near the mid elevation of the downstream embankment, are designed to measure movement following significant seismic events.
- Seventeen (17) piezometers distributed along the crest, along a row near the mid elevation of the downstream embankment, and on the embankment above and along the downstream toe. Piezometers are designed to measure pore pressures within the embankment and along the abutments.
- One (1) seepage measurement weir located near the valve house adjacent to the outfall of the fish-water release weir.

Design elevations for the piezometers are:

Piezometer Number	Depth to Bottom of Piezometer	Design Tip Elevation	Comments
P-1	35.5	376.3	Clogged circa March 1999, reopened Oct. 2001
P-1A	45.0	370.7	
P-2	63.3	344.8	
P-3	68.1	340.5	
~~P-4~~	~~93.0~~	~~315.9~~	Replaced by P-4A in 1986.
P-4A	?	?	Piezometer P-4 was replaced by P-4A in 1986.
P-5	88.2	322.1	
P-6	34.1	382.4	
P-6A	?	?	Critical elevation = 280'
P-7	57.6	266.1	

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~~P-8~~	~~116.6~~	~~216.6~~	Abandoned and replaced by P-8A in 1986
P-8A	?	?	Critical elevation = 236'
P-9	50.0	268.3	
P-10	74.2	186.6	Critical elevation = 229, monitors pressure at toe
P-10A	91.0	183.4	Critical elevation = 230, monitors pressure at toe
P-10B	70.0	179.8	Critical elevation = 228, monitors pressure at toe
P-11	56.5	177.3	Critical elevation = 220
P-11A	66.4	177.8	Critical elevation = 225
P-11B	39.0	172.2	Critical elevation = 205

The latest instrumentation data was received from the owner on December 16, 2015, and no new data has been received since that time. The last instrumentation review is presented in the 5 April 2016 inspection report, and is not repeated here; I direct the reader to the earlier report for a detailed explanation of the instrumentation monitoring the dam, and the performance of the dam as reflected in the 16 December 2015 submittal. The conclusion of the April 2016 review was that, "Based on the data submitted the dam appears to be performing satisfactorily, and no additional instrumentation is believed necessary at this time".

The upstream face as viewed from the left abutment. The large boulder rock riprap upstream face protection remains in good condition.

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Looking across the downstream face of the embankment towards the left groin, above, and another look at the left groin and downstream toe, below. As evident by the photographs, vegetation control is excellent.

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A large redwood log that has drifted into and was caught on the right side of the concrete spillway control weir requires removal, above. The photograph below shows flow within the concrete spillway channel entering the unlined spillway exit channel.