

Oroville Dam Safety Comprehensive Needs Assessment

1/10/2019

Log of Comments and Recommendations from the Independent Review Board (IRB)

- Comment logs provided to the Ad Hoc Group are snap-shots of the log on a specific date.
- The comment log is updated as work progresses.
- The log lists the comments and recommendations that have been issued by the IRB at that point in time.
- The log captures DWR's responses to each IRB comment, and whether DWR "*Concurs*" or "*Does not Concur*" with a specific comment or recommendation, or whether the response to that item is "*Under Review*." Additional information related to the comment and response may also be provided.
- The status of each recommendation is indicated as follows:
 - **Under Consideration** – The Project Team is considering the IRB recommendation.
 - **Planned** – The IRB has accepted the Project Team's response to the recommendation and an action to address the recommendation is planned by the Project Team.
 - **In Progress** – The Project Team's planned action is in progress.
 - **Closed** – The IRB has reviewed and confirmed that the Project Team's planned action has been completed and the recommendation has been adequately addressed.
 - **Not Adopted** – The Project Team did not adopt the IRB recommendation. An explanation for not adopting the recommendation has been or will be provided.
 - **Superseded** – The recommendation was superseded by the IRB and therefore not adopted by the Project Team. An explanation for any recommendations that are superseded will be provided and referenced to the revised recommendation.
- As work progresses, the actions being taken to address an item, or DWR's position (*Concur/Do Not Concur*) might change.

(Last Update: 01/03/2019)

Comment No.	IRB Comments/Recommendations	CNA Project-Level Action to Address the Recommendation	IRB Status Assessment	Date Closed	Comments
M01-01	The IRB recommends that the CNA Project Team develop a plan for execution of project integration, perhaps under a Task 7. As part of this new task, interdependencies between the tasks and between Tasks 1-6 and Task 7 (or project integration) should be mapped out and reflected in the project schedules for all tasks.	Concur. To date, we have: <ul style="list-style-type: none"> • Formed Integration team. • Developed Integration Project Management Plan (PMP) (in process). • Developed CNA workplan showing interdependencies (in process). 	Closed	12/14/2018	
M01-02	The IRB recommends the CNA Project Team broadly identify potential dam safety issues and concerns, including issues not specifically addressed in the six CNA Tasks, and conduct a screening level risk assessment to better understand the magnitude of risk associated with each issue or concern. If any of the issues or concerns indicate a need for expedited action, proceed to identify and implement actions necessary to reduce the risk either permanently or temporarily while the planning study proceeds.	Concur. <ul style="list-style-type: none"> • Will occur in the context of the Part 12D PFMA/FERC Level 2 Risk Analysis workshops, within Task work, and in Project-level work. • Will recommend expedited actions as they are identified. 	In Progress		
M01-03	The IRB recommends the CNA Project Team establish evaluation criteria for alternative selection prior to formulating alternatives.	Concur. First draft of evaluation criteria presented at IRB Meeting No. 2.	In Progress		
M01-04	The IRB recommends that in the initial phase of each task, the CNA Project Team explicitly state an objective of identifying what is working well to ensure that proposed alternatives do not harm operations that are working well.	Concur. Compiling this information.	Planned		
M01-05	The IRB recommends that the CNA Project Team include gain or loss of project benefits amongst the consequence categories to be considered in evaluating risk reduction.	Concur. <ul style="list-style-type: none"> • This will be included in the risk assessment consequences. • Will document Project benefits in developing and evaluating alternative plans. 	Planned		
M01-06	The IRB recommends that the CNA Project Team evaluate and document existing components and alternatives with respect to their robustness, redundancy, reliability, and resiliency.	Concur. Will be included in evaluation criteria.	Planned		
M01-07	The IRB recommends that the CNA Project Team consider adopting a "value planning" approach to the development of alternatives.	Concur. Risk, benefits, and cost efficiencies will be considered throughout conceptualization and selection of measures and alternatives.	Planned		
M01-08	The IRB recommends that the CNA Project Team adopt the principle of "begin with the end in mind" which can be implemented by outlining the final reports as soon as possible.	Concur. We developed and distributed a report outline for review. Currently, we are continually updating the Final Report Draft outline and will present at IRB meetings.	In Progress		
M01-09	The IRB recommends that an effort be undertaken to define a common understanding of the terminology to be used across all tasks.	Concur. We are: <ul style="list-style-type: none"> • Developing (Draft #1 of the) CNA glossary. • Developing (Draft #1 of) a memo defining the baseline and future without-project condition. 	In Progress		
M01-10	The IRB recommends that quality management be viewed more holistically than just quality control and quality assurance.	Concur. We are: <ul style="list-style-type: none"> • Working closely with Task team leads to maintain consistent quality across Tasks. • Including Task team leads in quality management of Project-level documents. • Reviewing Task progress at bi-weekly meetings. 	Closed	12/14/2018	
M01-11	The IRB recommends that the CNA Project Team consider a holistic approach to the evaluation of all mechanical, electrical, and control systems required for the safe operation of Oroville Dam, including those associated with operation of the Hyatt Powerplant.	Concur. The Project will review all mechanical, electrical, and control systems for the following facilities: <ul style="list-style-type: none"> • HPP and intake • RVOS outlet • Palermo outlet • FCO headworks 	In Progress		
M01-12	The IRB recommends that the CNA Project Team consider evaluating plans for providing redundancy in external systems that deliver power to the grid, as part of its evaluation of the low-level outlet facilities.	Concur. DWR internal discussions are ongoing.	Planned		
M01-13	The IRB recommends that any risk assessment, whether at the task or project level, include an explicit statement of assumptions that form the contextual basis of that assessment.	Concur. We will: <ul style="list-style-type: none"> • Define baseline condition, and state assumptions therein. • State assumptions clearly for all alternative plans and with-project conditions. 	Planned		
M01-14	The IRB recommends that the title of Task 1 be revised to: "Alternatives Evaluation to Ensure Spillway Integrity to Safely Pass the PMF".	Will review and present all Task titles at IRB Meeting No. 3.	Superseded		See recommendation M3-7

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M01-15	The IRB recommends that the CNA Project Team question previous assumptions regarding downstream consequence thresholds and take advantage of the new incremental dam breach hydraulic analyses to develop accurate consequence information.	Concur. We will develop accurate consequence information using best-available information.	Planned		
M01-16	The IRB recommends the CNA Project Team either address how climate change has been accounted for in developing the operational plan for the facility, including potential changes in hydrograph shape, size, and seasonality, or explain why it is not a concern.	Concur. Currently we are developing a plan for addressing climate change in the CNA project.	Planned		
M01-17	If not already completed, the IRB recommends that the Task 3 be expanded to include the hydraulic performance of the FCO Spillway as it relates to the operation of the FCO gates.	Hydraulic analysis of FCO gate structure and chute have been completed by Spillways Recovery Design Team. Currently viewed as a constraint in Tasks 1, 2, 3, and 4.	Closed	12/14/2018	
M01-18	The IRB recommends that the information describing the reservoir evacuation deficiency be added to the scope of work for task 4 to provide context.	Concur. Will be listed as an issue and opportunity.	Closed	12/14/2018	
M01-19	The IRB recommends that the project summarize and document the analysis and/or assumptions relative to sedimentation in the reservoir at the dam.	Concur.	Planned		
M01-20	The IRB recommends that the project also include an assessment of the benefits that could be derived from making the reservoir volume between elevations 350 feet and 640 feet available for active management.	Concur. Will be evaluated in Task 4 and applied to other tasks as appropriate.	Planned		
M01-21	The IRB recommends that Task 5 include developing recommendations, as appropriate, for future collection of additional data on the embankment characteristics that would significantly reduce uncertainty for the evaluation of the dam embankment reliability.	Concur. These tasks are being completed by DWR in response to FERC 2014 Part 12D recommendations	In Progress		
M01-22	The IRB recommends that future presentations to the public and the final project report provide a description of the rationale for the tasks included in the project.	Concur. Presented at IRB Meeting No. 2 and Ad Hoc Committee Meeting No. 2	Planned		The IRB would like to see supporting documentation for the selection of the 6 Tasks
M02-01	The IRB recommends that plan options be evaluated using a structured Multi-Criteria Decision-Making approach such as "choosing by advantages."	Noted. Will respond with updated evaluation criteria and approach at IRB Meeting No. 3.	Planned		
M02-02	The IRB recommends that "permissibility" or "minimizing permitting challenges" be added to the list of evaluation criteria.	Concur.	Closed	12/14/2018	
M02-03	The IRB recommends that all evaluation criteria be framed as the measurement of positive outcomes.	Concur. Second draft of evaluation criteria will be presented at IRB Meeting No. 3.	Planned		Looking for evidence of a focus on positive outcomes
M02-04	The IRB recommends that among the approaches to plan formulation considered, the CNA Study Team include the development of plans focused on addressing different "themes," or collections of attributes captured by the evaluation criteria.	Concur. Under development.	Planned		
M02-05	The IRB recommends that the basis for the 150,000 cfs flow constraint be substantiated in the documentation for the CNA studies, and encourages the use of risk-based information in the analysis by performing sensitivity analyses to assess the relative risk for various flow levels. The IRB recommends that the sensitivity analysis be performed for releases from the dam ranging from 100,000 cfs to 200,000 cfs in increments of 10,000 cfs for use in operational decision-making, both for interim operations and possibly for long-term revisions to the WCM. This analysis should include an estimate of the return period or recurrence interval associated within this range of incremental flow releases.	Note. Will consider and include in technical task details.	Under Consideration		
M02-06	The IRB recommends that alternative measures be considered to create artificial power demand to allow energy dissipation so that the grid demand will not be the limiting factor for powerhouse outlet capacity during a flood event.	Concur. Internal DWR discussions are ongoing.	In Progress		
M02-07	The IRB recommends that DWR assess the adequacy of the previously completed FCO headworks stability analyses in light of the revised flood routing of the 2018 PMF study.	Concur. Task 3 will consider all previous analyses.	Planned		
M02-08	The IRB recommends that DWR develop a written plan (to be included in the documentation of the analysis) for validation of the model to be used in the non-linear analysis of the FCO headworks and the results of the analysis.	Concur. This work will be performed as Part 12D recommendation response.	In Progress		
M02-09	The IRB recommends that DWR develop a written plan for assessing the performance of the mechanical/electrical components of the FCO headworks under seismic loads.	Concur. This will be completed under Task 3.	Planned		

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M02-10	The IRB recommends that the Team embrace a holistic approach and consider other issues that may not have been brought up by the FERC Part 12D process.	Concur. Will be included in Task 1-6 technical work and in Part 12D PFMA/FERC Level 2 Risk Analysis Workshop	Planned		
M02-11	The IRB recommends that the Team take advantage of the new findings about the characteristics of the embankment zones and consider further implications on the overall stability of the dam, keeping an open mind about uncertainty in the various aspects of the evaluation, including the strength of the embankment materials in the vegetated area and other zones of the dam.	Concur. This work will be performed as Part 12D recommendation response and utilized in Task 5.	Planned		
M02-12	The IRB recommends taking advantage of information on the recorded performance of the embankment during significant events in the life of the dam to provide further understanding of the dam's characteristics.	Concur. This work will be performed as Part 12D recommendation response and utilized in Task 5.	Planned		
M02-13	The IRB recommends that the Team thoroughly document their knowledge and understanding of the performance of the dam including explanations for the very low observed seepage, the significance of the vegetated area on the downstream slope of the embankment, and the effectiveness of the internal filtered seepage collection system for dam performance monitoring.	Concur. This work will be performed as Part 12D recommendation response and utilized in Task 5.	Planned		
M02-14	The IRB recommends that DWR further develop and update the final CNA report and task report outlines for each successive IRB meeting.	Concur. Updated report outlines will be presented at IRB meetings.	In Progress		
M03-1	The IRB recommends further development of the evaluation framework in the near term to include additional consequences or outcome categories, including beneficial project outcomes.				
M03-2	The IRB recommends that the integration team develop a common and consistently applied terminology and approach to defining and articulating issues (aka problems or needs), objectives, and constraints across the project.				
M03-3	The IRB recommends that a minimum set of hard constraints be identified as an essential first step to establishing absolute requirements for measuring plan viability.				
M03-4	Where regulatory requirements are uncertain, the IRB recommends that a well-informed assumption and justification for those requirements be articulated and reviewed with the responsible agency(ies) for their comment and concurrence, prior to engaging in measure development.				
M03-5	IRB recommends that the Integration Team develop a standard format for the tables of issues, objectives, and constraints that each Task Team can populate using a common terminology and formulation approach				
M03-6	The IRB recommends that all task names be revised to replace "Alternatives" with "Measures."				
M03-7	The IRB recommends that the title to Task 1 be revised to "Evaluating Measures to Enhance Spillway Reliability and Resiliency".				
M03-8	The IRB recommends that the Project Team identify and assess data gaps related to the geology of the affected overflow area from between the secant pile wall and the river, and collect any additional data needed to support the recommendation of measures.				
M03-9	The IRB recommends that the interaction of the FCO, River Valve Outlet System and Hyatt Powerplant be fully defined to determine whether there is an FCO release level that could potentially incapacitate the Hyatt PP and/or River Valve Outlet System (RVOS) due to excessive tailwater elevation.				
M03-10	The IRB recommends consideration be given to basing Hyatt Powerplant capacity on seasonally adjusted historical generating unit availability data, and that inflows be seasonally adjusted based on historical monthly inflows				
M03-11	The IRB recommends that structural considerations be explicitly addressed with respect to allowance for unbalanced operations of the gates.				
M03-12	The IRB recommends that the scope of Task #6 be expanded to include visual monitoring of the performance of the dam.				