United States Department of the Interior

NATIONAL PARK SERVICE

Yosemite National Park
P. O. Box 577
Yosemite, California 95389

IN REPLY REFER TO:
L7615(YOSE-PM)

Memorandum

To: Ashley Adams, Project Manager, Yosemite National Park

From: Superintendent, Yosemite National Park

Subject: NEPA and NHPA Clearance: 2013-028 Lake Eleanor Valve Repair (48065)

The Executive Leadership Team has reviewed the proposed project/action and completed its environmental assessment documentation, and we have determined the following:

- There will not be any effect on threatened, endangered, or rare species and/or their critical habitat.
- There will be no adverse effect to historical properties.
- There will not be serious or long-term undesirable environmental or visual effects.

The subject proposed project, therefore, is/are now cleared for all NEPA and NHPA compliance requirements as presented above. Project plans and specifications are approved and construction and/or project implementation can commence.

For the proposed project actions to be within compliance requirements during construction and/or project implementation, the following mitigations must be adhered to:

- Maintain ranger patrols to protect exposed archeological materials and conduct site visit with Native American tribes to identify any issues regarding archeological resources.

For complete compliance information see PEPC Project 48065.

//Don L. Neubacher//
Don L. Neubacher

Enclosure (with attachments)

cc: Statutory Compliance File

The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.

Lett ID: 48065

Categorical Exclusion Form

Project: 2013-028 Lake Eleanor Valve Repair
PEPC Project Number: 48065
Project Description:

The City and County of San Francisco – Hetch Hetchy Water and Power (HHWP) - is requesting a waiver from the February 1981 Stipulation [Stipulations for change of location of right of way, for power line to proposed Cherry-Eleanor pumping station pursuant to map c-5393 filed February 2, 1981 in the United States Land Office at Sacramento, California] , item #6: "During years when Lake Eleanor spills the holder (the City and County of San Francisco) shall maintain the level of Lake Eleanor above elevation 4651.0 ft from the date the spill ends at Lake Eleanor through September 30". HHWP is requesting a waiver to drop below 4651.0 ft after September 2, 2013. This one time waiver is being requested to allow access and completion of maintenance and repair work on the lower release outlets. This work requires lowering the lake to an elevation of 4619 feet (HHWP datum). The repair work is estimated to take 7 to 8 weeks to complete.

HHWP must perform needed maintenance and repair work at Lake Eleanor Dam at the lower outlet works of the facility. To access these assets, the lake must be lowered to 4619 feet, or minimum pool. This is to remove all water from behind the valves to safely dismantle the valve. There are no other reasonable or safe alternative approaches to performing this work.

In the past to perform work at the lower elevations of Eleanor Dam a coffer dam was constructed, approximately 1 mile upstream of the dam. Subsequent to the work projects, the coffer dam has been breached in order to allow water to drain from behind it. An estimate of the volume impounded is less than 1,000 acre-feet. This storage allows for controlled water volumes and flow rates to be at the face of the dam while work is being performed. The existing portion of the coffer dam has an 18 inch culvert through it to allow some water to pass, which allows for maintaining minimum downstream releases.

HHWP intends to re-establish the coffer at the current location. The breached section is approximately 20 feet across and is located in the historical stream and remains the preferred pathway for water when the lake is drained. Material from previous construction and breaching of the coffer dam is stored as a mound in the bottom of the reservoir. However due to the small sizing of the material, higher turbidity in the effluent may occur when the material is put into place. In order to alleviate this issue and avoid future water quality problems when the coffer dam is needed again, an alternative construction of the breached section will be completed this fall. Clean material will be brought in to create the initial lower section of the coffer dam.

This material is locally available and will reduce the water quality impacts when it is placed. Also 3-36” culverts will be laid into place approximately 1 to 2 feet from the bottom of the coffer dam. The culverts will have seats for slide gates to be placed which allow for the water level to be regulated behind the coffer dam. This will allow for water to be drained from behind the coffer dam and allow it to remain in place following the work. When future work on the dam is necessary, the culverts will

allow the reservoir to be drawn down and the culverts in the coffer dam can be operated to impound water.

Waivers have been granted by the National Park Service in the past to perform maintenance work at Lake Eleanor. The most recent was during re-surfacing projects in the years spanning 1994-1996 and 2011. Allowing the early drawdown of Lake Eleanor reduces the risk (or chances) of not being able to complete work during the fall of 2013, due to fall storms and increased flows into the reservoir. If work is delayed later into the season there is an increased chance that fall storms can occur. This can create conditions where completion of the work would not be possible during the fall of 2013 and then require drawing down Lake Eleanor in 2014 to complete the project. Allowing the early drawdown of the work would result in project completion by mid-October.

The work entails six steps:

1. Lowering the lake to 4619 feet,
2. Re-establishing a coffer dam upstream of the dam,
3. Routing and pumping water out the upper 2 outlet valves to maintain minimum flow requirements,
4. Removing the valve stems and gates,
5. Completing repair work, and
6. Re-installing the valves and refilling the lake.

Project Locations:

Tuolumne County, CA

Mitigations:

- Maintain ranger patrols to protect exposed archeological materials and conduct site visit with Native American tribes to identify any issues regarding archeological resources.

Describe the category used to exclude action from further NEPA analysis and indicate the number of the category (see Section 3-4 of DO-12):

C.3 Routine maintenance and repairs to non-historic structures, facilities, utilities, grounds and trails.

On the basis of the environmental impact information in the statutory compliance file, with which I am familiar, I am categorically excluding the described project from further NEPA analysis. No exceptional circumstances (e.g. all boxes in the ESF are marked "no") or conditions in Section 3-6 apply, and the action is fully described in Section 3-4 of DO-12.

Superintendent: *//Don L. Neubacher//* **Date:** 8/21/13

Don L. Neubacher

The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.

ENVIRONMENTAL SCREENING FORM (ESF)

DO-12 APPENDIX 1

Date Form Initiated: 08/08/2013

Updated May 2007 - per 2004 Departmental Manual revisions and proposed Director's Order 12 changes

A. PROJECT INFORMATION

Park Name: Yosemite National Park
Project Title: 2013-028 Lake Eleanor Valve Repair
PEPC Project Number: 48065
Project Type: Facility Maintenance (FM)
Project Location:
County, State: Tuolumne County, California
Project Leader: Ashley Adams

Is project a hot topic (controversial or sensitive issues that should be brought to attention of Regional Director)? No

B. RESOURCE EFFECTS TO CONSIDER:

Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine/Notes
1. Geologic resources – soils, bedrock, streambeds, etc.		Negligible			Negligible soil disturbance. The coffer dam has been filled and breached several times over the last decade. This project intends to permanently fill the coffer dam with the addition of three culverts, rock and soil that has been stored locally.
2. From geohazards	No				
3. Air quality	No				
4. Soundscapes		Negligible			Minimal, temporary equipment noises during the work.
5. Water quality or quantity		Negligible			Lake Eleanor outlet will have some increased turbidity. Permanently filling the coffer dam will reduce future turbidity issues due to the

Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine/Notes
					filling and breaching process.
6. Streamflow characteristics	No				
7. Marine or estuarine resources	No				
8. Floodplains or wetlands	No				
9. Land use, including occupancy, income, values, ownership, type of use	No				
10. Rare or unusual vegetation – old growth timber, riparian, alpine	No				
11. Species of special concern (plant or animal; state or federal listed or proposed for listing) or their habitat	No				
12. Unique ecosystems, biosphere reserves, World Heritage Sites	No				Yosemite National Park is a World Heritage Site.
13. Unique or important wildlife or wildlife habitat	No				
14. Unique or important fish or fish habitat	No				
15. Introduce or promote non-native species (plant or animal)		Negligible			All fill will be transported from the local Cherry Lake spillway spoils site.
16. Recreation	No				

Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine/Notes
resources, including supply, demand, visitation, activities, etc.					
17. Visitor experience, aesthetic resources		Negligible			The lake will be drained down to the historic level. Visually more of the reservoir will be temporarily seen.
18. Archeological resources		Negligible			Area will be patrolled to mitigate any loss of resources.
19. Prehistoric/historic structure	No				
20. Cultural landscapes	No				
21. Ethnographic resources		Negligible			A tribal site visit will be conducted to identify any issues regarding archeological resources.
22. Museum collections (objects, specimens, and archival and manuscript collections)	No				
23. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	No				
24. Minority and low income populations, ethnography, size, migration patterns, etc.	No				
25. Energy resources	No				
26. Other agency or tribal land use plans	No				

Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine/Notes
or policies					
27. Resource, including energy, conservation potential, sustainability	No				
28. Urban quality, gateway communities, etc.	No				
29. Long-term management of resources or land/resource productivity	No				
30. Other important environment resources (e.g. geothermal, paleontological resources)?	No				

C. MANDATORY CRITERIA

Mandatory Criteria: If implemented, would the proposal:	Yes	No	N/A	Comment or Data Needed to Determine
A. Have significant impacts on public health or safety?		No		
B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas?		No		
C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available		No		

Mandatory Criteria: If implemented, would the proposal:	Yes	No	N/A	Comment or Data Needed to Determine
resources (NEPA section 102(2)(E))?				
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?		No		
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		No		
F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?		No		
G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office?		No		
H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?		No		
I. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?		No		
J. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?		No		
K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?		No		
L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?		No		

For the purpose of interpreting these procedures within the NPS, any action that has the potential to violate the NPS Organic Act by impairing park resources or values would constitute an action that triggers the DOI exception for actions that threaten to violate a federal law for protection of the environment.

D. OTHER INFORMATION

1. Are personnel preparing this form familiar with the site? Yes

1.A. Did personnel conduct a site visit? No

2. Is the project in an approved plan such as a General Management Plan or an Implementation Plan with an accompanying NEPA document? No

3. Are there any interested or affected agencies or parties? Yes

3.A. Did you make a diligent effort to contact them? Yes

4. Has consultation with all affected agencies or tribes been completed? Yes

5. Are there any connected, cumulative, or similar actions as part of the proposed action? *(e.g., other development projects in area or identified in GMP, adequate/available utilities to accomplish project)* No

E. INTERDISCIPLINARY TEAM SIGNATORIES

Interdisciplinary Team	**Field of Expertise**
Don L. Neubacher	Superintendent
Michael Gauthier	Chief of Staff
Kathleen Morse	Chief of Planning
Randy Fong	Chief of Project Management
Teri Austin	Chief of Administration Management
Ed Walls	Chief of Facilities Management
Linda C. Mazzu	Chief of Resources Management & Science
Kris Kirby	Chief of Business and Revenue Management
Tom Medema	Chief of Interpretation and Education
Kevin Killian	Chief of Visitor and Resource Protection
Ashley Adams	Project Leader
Madelyn Ruffner	Acting Environmental Planning and Compliance Program Manager
Renea Kennec	NEPA Specialist

F. SUPERVISORY SIGNATORY

Based on the environmental impact information contained in the statutory compliance file and in this environmental screening form, environmental documentation for this stage of the subject project is complete.

Recommended:

Compliance Specialists	Date
//Renea Kennec// Compliance Specialist – Renea Kennec	8/9/13
//Madelyn Ruffner// Acting Compliance Program Manager – Madelyn Ruffner	8/13/13
//Randy Fong// Chief, Project Management – Randy Fong	8/15/13

Approved:

Superintendent	Date
//Don L. Neubacher// Don L. Neubacher	8/21/13

The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.

PARK ESF ADDENDUM

Today's Date: August 8, 2013

PROJECT INFORMATION

Park Name: Yosemite National Park
Project Title: 2013-028 Lake Eleanor Valve Repair
PEPC Project Number: 48065
Project Type: Facility Maintenance (FM)
Project Location:
County, State: Tuolumne County, California
Project Leader: Ashley Adams

PARK ESF ADDENDUM QUESTIONS & ANSWERS

ESF Addendum Questions	Yes	No	N/A	Data Needed to Determine/Notes
SPECIAL STATUS SPECIES CHECKLIST				
Listed or proposed threatened or endangered species (Federal or State)?		No		
Species of special concern (Federal or State)?		No		
Park rare plants or vegetation?		No		
Potential habitat for any special-status species listed above?		No		
NATIONAL HISTORIC PRESERVATION ACT CHECKLIST				
Entail ground disturbance?	Yes			
Are any archeological or ethnographic sites located within the area of potential effect?	Yes			Ranger patrols will be maintained to protect exposed archeological materials and a site visit will be conducted with Native American tribes to identify any issues regarding archeological resources.
Entail alteration of a historic structure or cultural landscape?		No		
Has a National Register form		No		

ESF Addendum Questions	Yes	No	N/A	Data Needed to Determine/Notes
been completed?				
Are there any structures on the park's List of Classified Structures in the area of potential effect?		No		
WILD AND SCENIC RIVERS ACT CHECKLIST				
Fall within a wild and scenic river corridor?		No		
Fall within the bed and banks AND will affect the free-flow of the river?		No		
Have the possibility of affecting water quality of the area?		No		
Remain consistent with its river segment classification?			N/A	
Fall on a tributary of a Wild and Scenic River?		No		
Will the project encroach or intrude upon the Wild and Scenic River corridor?		No		
Will the project unreasonably diminish scenic, recreational, or fish and wildlife values?		No		
Consistent with the provisions in the Merced River Plan Settlement Agreement?			N/A	
WILDERNESS ACT CHECKLIST				
Within designated Wilderness?		No		
Within a Potential Wilderness Addition?		No		

ASSESSMENT OF ACTIONS HAVING AN EFFECT ON CULTURAL RESOURCES

A. DESCRIPTION OF UNDERTAKING

1. Park: Yosemite National Park

2. Project Description:

Project Name: 2013-028 Lake Eleanor Valve Repair
Prepared by: Renea Kennec
Date Prepared: 08/08/2013
Telephone: 209-379-1038
PEPC Project Number: 48065
Locations:
County, State: Tuolumne County, CA

Area of potential effects (as defined in 36 CFR 800.16[d])
Lake Eleanor Reservoir Basin

3. Has the area of potential effects been surveyed to identify historic properties?

___ **No**
X **Yes**
Source or reference:

4. Potentially Affected Resource(s):

Archeological resources affected:
Name and numbers: Resources of Cultural Significance (un-evaluated)

Ethnographic Resources Affected:
Name and numbers: Resources of Cultural Significance (un-evaluated)

5. The proposed action will: (check as many as apply)

No	Destroy, remove, or alter features/elements from a historic structure
No	Replace historic features/elements in kind
No	Add non-historic features/elements to a historic structure
No	Alter or remove features/elements of a historic setting or environment (inc. terrain)
No	Add non-historic features/elements (inc. visual, audible, or atmospheric) to a historic setting or cultural landscape
No	Disturb, destroy, or make archeological resources inaccessible
No	Disturb, destroy, or make ethnographic resources inaccessible

Yes	Potentially affect presently unidentified cultural resources
No	Begin or contribute to deterioration of historic features, terrain, setting, landscape elements, or archeological or ethnographic resources
No	Involve a real property transaction (exchange, sale, or lease of land or structures)
	Other (please specify):

6. Supporting Study Data:
(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisors as indicated by check-off boxes or as follows:

[X] Archeologist
Name: Sonny Montague
Date: 08/06/2013

Check if project does not involve ground disturbance [ ]
Assessment of Effect: __ No Potential to Cause Effect __ No Historic Properties Affected _X_ No Adverse Effect __ Adverse Effect __ Streamlined Review
Recommendations for conditions or stipulations: Maintain ranger patrols to protect exposed archeological materials and conduct site visit with Native American tribes to identify any issues regarding archeological resources.

Doc Method: Park Specific Programmatic Agreement

[X] Historical Architect
Name: Paul Stephens
Date: 08/05/2013

Check if project does not involve ground disturbance [ ]
Assessment of Effect: __ No Potential to Cause Effect __ No Historic Properties Affected _X_ No Adverse Effect __ Adverse Effect __ Streamlined Review
Recommendations for conditions or stipulations: Gate should be kept closed and locked to prevent casual access by the public.

Doc Method: Park Specific Programmatic Agreement

[X] Anthropologist
Name: Jennifer Hardin
Date: 08/08/2013
Comments: The project area has been identified by traditionally associated tribes and groups as culturally important and contains culturally significant ethnographic resources (including archeological resources).

Check if project does not involve ground disturbance [ ]
Assessment of Effect: __ No Potential to Cause Effect __ No Historic Properties

Affected __X__ No Adverse Effect __ Adverse Effect __ Streamlined Review
Recommendations for conditions or stipulations: Traditionally associated tribal groups will be notified about the project via the August Tribal Project Review List. A tribal site visit will be conducted to the area when the water is lowered to view archeological and other ethnographic resources. Maintain ranger patrols to protect exposed archeological materials.

Doc Method: Park Specific Programmatic Agreement

[X] Historical Landscape Architect
Name: Kevin McCardle
Date: 08/07/2013

Check if project does not involve ground disturbance [ ]
Assessment of Effect: __ No Potential to Cause Effect __ No Historic Properties
Affected __X__ No Adverse Effect __ Adverse Effect __ Streamlined Review
Recommendations for conditions or stipulations:

Doc Method: Park Specific Programmatic Agreement

No Reviews From: Curator, Historian, 106 Advisor, Other Advisor

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C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

1. Assessment of Effect:

_____ **No Potential to Cause Effects**
_____ **No Historic Properties Affected**
__X__ **No Adverse Effect**
_____ **Adverse Effect**

2. Documentation Method:

[ ] A. STANDARD 36 CFR PART 800 CONSULTATION
Further consultation under 36 CFR Part 800 is needed.

[ ] B. STREAMLINED REVIEW UNDER THE 2008 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a streamlined review under section III of the 2008 Servicewide PA for Section 106 compliance.

APPLICABLE STREAMLINED REVIEW Criteria
(Specify 1-16 of the list of streamlined review criteria.)

[ ] C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 2008 Servicewide PA and 36 CFR Part 800.
Specify plan/EA/EIS:

[**X**] D. UNDERTAKING RELATED TO ANOTHER AGREEMENT
The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.
Specify: **1999 Programmatic Agreement**

[ ] E. COMBINED NEPA/NHPA Document
Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

[ ] G. Memo to SHPO/THPO

[ ] H. Memo to ACHP

3. Additional Consulting Parties Information:

Additional Consulting Parties: No

4. Stipulations and Conditions:

Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

5. Mitigations/Treatment Measures:

Measures to prevent or minimize loss or impairment of historic/prehistoric properties: (Remember that setting, location, and use may be relevant.)

- **Assessment of Effect - Archeology - Maintain ranger patrols to protect exposed archeological materials and conduct site visit with Native American tribes to identify any issues regarding archeological resources.**

D. RECOMMENDED BY PARK SECTION 106 COORDINATOR:

Acting Historic Preservation Officer:

Kimball Koch *//Kimball Koch//* **Date** 8/9/13

E. SUPERINTENDENT'S APPROVAL

The proposed work conforms to the NPS *Management Policies* and *Cultural Resource Management Guideline*, and I have reviewed and approve the recommendations, stipulations, or conditions noted in Section C of this form.

Superintendent: *//Don L. Neubacher//* **Date:** 8/21/13

Don L. Neubacher

The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.

To: Yosemite National Park Planning Committee

From: Adam Mazurkiewicz, Hetch Hetchy Water and Power

Re: Lake Eleanor Project – Fall 2013

Executive Summary

The City and County of San Francisco – Hetch Hetchy Water and Power (HHWP) - is requesting a waiver from the February 1981 Stipulation [Stipulations for change of location of right of way, for power line to proposed Cherry-Eleanor pumping station pursuant to map c-5393 filed February 2, 1981 in the United States Land Office at Sacramento, California] , item #6: *"During years when Lake Eleanor spills the holder (the City and County of San Francisco) shall maintain the level of Lake Eleanor above elevation 4651.0 ft from the date the spill ends at Lake Eleanor through September 30"*. HHWP is requesting a waiver to drop below 4651.0 ft after September 2, 2013. This one time waiver is being requested to allow access and completion of maintenance and repair work on the lower release outlets. This work requires lowering the lake to an elevation of 4619 ft (HHWP datum). The repair work is estimated to take 7 to 8 weeks to complete.

Introduction

HHWP must perform needed maintenance and repair work at Lake Eleanor Dam (see Appendix 1 for Project Description). The work to be performed is repairs to the lower outlet works at the facility. In order to access these assets, the lake must be lowered to 4619 ft, or minimum pool. This is to remove all water from behind the valves in order to safely dismantle the valve. There are no other reasonable or safe alternative approaches to performing the work.

Request

HHWP is requesting a waiver from the February 1981 Stipulation (Appendix 2) item #6:

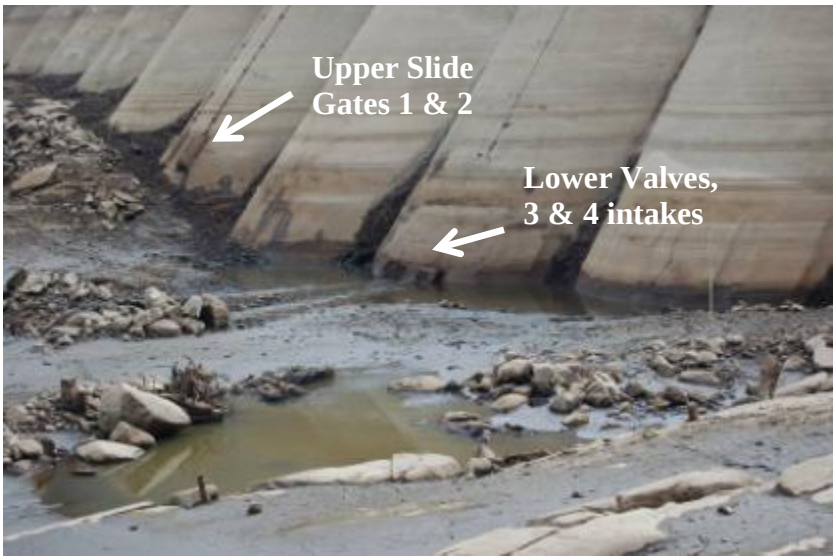
> *"During years when Lake Eleanor spills the holder shall maintain the level of Lake Eleanor above elevation 4651.0 ft from the date the spill ends at Lake Eleanor through September 30"*

in order to be able to perform this work during the fall of 2013. The request is to draw Lake Eleanor below 4651.0 ft after September 2, 2013. Waivers have been granted by Yosemite National Park in the past to perform maintenance work at Lake Eleanor. The most recent was during re-surfacing projects in the years spanning 1994-1996. Allowing the early drawdown of Lake Eleanor reduces the risk (or chances) of not being able to complete work during the fall of 2013, due to fall storms and increased flows into the reservoir. If work is delayed later into the season there are increased chances that fall storms can occur. This can create conditions where completion of the work would not be possible during the fall of 2013 and then require drawing down Lake Eleanor in 2014 to complete the project. Allowing the early drawdown of the work would result in project completion in mid-October.

Appendix 1. Project Description

Summary

Eleanor Dam was completed in 1917 and since very limited changes to the facility has occurred. In the fall of 2011 repair work was down on one (of 2) of the lowest outlet guard valves due to failure in the closed position. Due to the location of the valve, this work required the lake to be drained. Once work was underway and the valve could be evaluated, it was found that more complete repairs were needed, which would require removing the valve stem and gate and having machine work completed on it. Due to the seasonal timing this extended work was not possible. A repair was done to allow the valve to be functional, however further work is needed. Subsequent evaluation and work on the main outlet valves revealed similar issues to the inspected guard valve. The main valves have been removed and machine work completed. In order to maintain the integrity of the facility both of the guard valves should have the same maintenance and repair.



Picture 1. Eleanor Dam, note the grizzlies for valves 3 & 4 in the center of the picture.

The work entails 6 steps:

1. Lowering the lake to 4619 ft.
2. Re-establishing a coffer dam upstream of the dam
3. Routing and pumping water out the upper 2 outlet valves to maintain minimum flow requirements
4. Removing the valve stems and gates
5. Completing repair work and the valve stems and gates
6. Re-installing the valves and refilling the lake

Location

Lake Eleanor is located in the northern portion of Yosemite National Park at an elevation of 4700 ft (Figure 1). The dam impounds 27,100 acre-feet of water when it is at full pool. The reservoir is one of three storage reservoirs operated by the San Francisco Public Utilities Commission (SFPUC) in the Sierra Nevada as part of a regional water supply system. Lake Eleanor is connected to Cherry Reservoir which is 1-mile to the North via a tunnel and pump station. Water that is transferred to Cherry Reservoir is used at Holm Powerhouse and results in return flow to Cherry Creek on the Tuolumne River. Lake Eleanor water allows the SFPUC to meet senior water rights on the river and is also a secondary water supply source.

Release Outlets

There are 4-release outlets at Lake Eleanor and they are each 36" outlets and allow for a maximum release of 700 cfs. The 2-lower release outlets at Lake Eleanor account for 60% of the possible release potential of the dam facility (Picture 1 and 4). Each lower outlet is comprised of two 36" gate valves in series, with the first operated as a guard valve. The 2-upper valves are slide gates which operate on the face of the dam (Picture 1). Maintaining the integrity of the outlet works is essential for safe operations of the reservoir.

Lowering Lake Eleanor

Lowering Lake Eleanor will be done by transferring water to Cherry Reservoir via the Cherry/Eleanor Pump station down to an elevation of 4640 ft. Pumping operations will maintain an elevation of at least 4651ft is proposed to commence on August 1st. It will take approximately 30 days to reach 4640 if there are not significant rain events. Due to elevation differences between Eleanor and Cherry, it is not possible and inefficient to

pump water below this elevation. The remaining water will then be released via the 4 outlet works to completely drain the lake. It should be feasible to have the lake completely drained by mid-September.

Re-establishing the Coffer Dam

In the past to perform work at the lower elevations of Eleanor Dam a coffer dam was constructed, approximately 1 mile upstream of the dam (Picture 2). Subsequent to the work projects, the coffer dam has been breached in order to allow water to drain from behind it. In 2011, the coffer dam was again re-established and breached following the work. An estimate of the volume impounded is less than 1,000 acre-feet. This storage allows for controlled water volumes and flow rates to be at the face of the dam while work is being performed. The existing portion of the coffer dam has an 18 inch culvert through it to allow some water to pass, which allows for maintaining minimum downstream releases.

Picture 2. Coffer Dam in Lake Eleanor, note historic Lake Eleanor in the distance.

HHWP intends to re-establish the coffer at the current location. The breached section is approximately 20 ft across (Picture 3) and is located in the thalweg of the historical stream and remains the preferred pathway for water when the lake is drained. Material from previous construction and breaching of the coffer dam is stored as a mound in the bottom of the reservoir. However due to the small sizing of the material, higher turbidity in the effluent may occur when the material is put into place. In order to alleviate this issue and avoid future water quality problems when the coffer dam is needed again, an alternative construction of the breached section will be completed this fall (Figure 2). Clean material will be brought in to create the initial lower section of the coffer dam.

This material is locally available and will reduce the water quality impacts when it is placed. Also 3-36" culverts will be laid into place approximately 1 to 2 feet from the bottom of the coffer dam. The culverts will have seats for slide gates to be placed which allow for the water level to be regulated behind the coffer dam. This will allow for water to be drained from behind the coffer dam and allow it to remain in place following the work. When future work on the dam is necessary, the culverts will allow the reservoir to be drawn down and the culverts in the coffer dam can be operated to impound water.

Picture 3. The breached section of the coffer dam

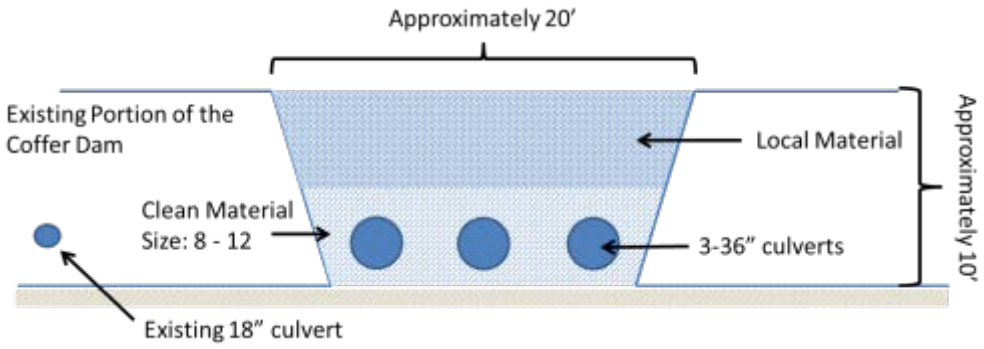


Figure 2. Schematic of the breached section of the coffer dam and planned repairs.

Routing and pumping water out the upper 2 outlet valves

In order to maintain required releases downstream of the reservoir, some water must be allowed to pass the coffer dam. A small sandbag embankment will be constructed just

upstream of the dam to create a small pond. This water will then be pumped through the upper two slide gates and delivered downstream of the reservoir (Picture 1).

Removal of the Valves

The valves will be opened up at the bonnet and the stem and gate will be removed (Picture 4). These will be sent to a machine shop for repairs. In order for the system to be operational while the valves are not in place, blind flanges will be installed on the bonnets and flow can be regulated by the main discharge valves. If weather and inflow conditions allow the valves will be put back into place after the repairs. However, if early season storms create higher inflows and the reservoir begins to fill, the valves will be put back into place at a later date.

Picture 4. The lower valves at Lake Eleanor.