

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for the

**SOUTHERN CALIFORNIA EDISON
TIOGA LAKE DAM OUTLET AND GRIZZLY REPAIR PROJECT**

**LEE VINING HYDROELECTRIC PROJECT
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 1388**

SOURCES: Glacier Creek

COUNTY: Mono

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

I. Project Description

Southern California Edison Company's (SCE or Applicant) Tioga Lake Dam Outlet and Grizzly Repair Project (Project) consists of improvements and repairs to the Tioga Lake main dam outlet works, which are part of the Lee Vining Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 1388). The Lee Vining Hydroelectric Project is located in the Mono Lake Basin, along Lee Vining Creek, approximately 15 miles west of Lee Vining, California.

Tioga Lake is located in the Inyo National Forest, outside the Ansel Adams Wilderness Area, at an elevation of 9,650 feet above mean sea level on the eastern slope of the Sierra Nevada mountain range, in Mono County, California (See Attachment A: Figure 1 – Project Location). Tioga Lake is a man-made waterbody fed by natural runoff from Glacier Creek and a small unnamed stream. Tioga Lake drains into Ellery Lake, which is the intake and regulating reservoir for the Lee Vining Hydroelectric Project's Poole powerhouse. There are no man-made reservoirs or diversions upstream of Tioga Lake. At full pool, Tioga Lake has a surface area of 73 acres and a gross and usable storage capacity of 1,254 acre-feet.

Tioga Lake is impounded by a timber-face, rock-fill, 27-foot high and 270-foot long main dam and a 19-foot high and 50-foot long auxiliary dam. Visual observations of the redwood planks lining the upstream face of the main dam indicate deterioration, leading to an increase in the porosity of the wood face. The increased porosity is causing water to seep through the main dam. Monitoring data indicates that seepage is increasing over time. SCE has made commitments to FERC and the California Division of Safety of Dams to mitigate the increasing seepage.

In 2014 SCE installed a geomembrane along the upstream side of Tioga Lake's main dam to mitigate seepage. However, SCE did not install a geomembrane liner in the immediate vicinity of the outlet works because the concrete surrounding the outlet pipe and the grates on the steel trash rack (grizzly) were deteriorated and required additional repairs. The extent of repairs cannot be fully determined until the lake level is drawn down and sediment and rip rap are removed so the

existing plinth (i.e., base of the dam) and outlet structures can be carefully inspected. The Project includes making the needed repairs to the outlet structure and installing a geomembrane on the surface of the upstream side of the dam in the immediate vicinity of the outlet works. The repairs and installation of the geomembrane are expected to minimize seepage, retain the integrity of the dam and outlet structure, and improve Tioga Lake operations. All work associated with the Project will occur in previously disturbed areas located within the FERC boundary for the Lee Vining Hydroelectric Project.

Project Activities

Project construction consists of repairs to the deteriorated areas of the main dam outlet works and installation of a geomembrane liner on the upstream face of the dam in the vicinity of the outlet works. The Project includes the following steps:

- *Lake Draining.* Tioga Lake will be drained to expose the upstream side of the main dam and outlet works. The outlet valve will remain open for the duration of the Project, thus allowing all natural flow to pass through to Glacier Creek. The FERC license requires SCE to maintain a minimum instream flow into Glacier Creek of two cubic feet per second (cfs) or the natural inflow, whichever is less. Dewatering Tioga Lake has the potential to cause adverse effects upon aquatic resources in violation of state water quality standards. This certification contains conditions to protect aquatic resources in compliance with water quality standards.
- *Construction.* Sediment in the immediate vicinity of the main dam will be temporarily removed so the dam, plinths and outlet works can be inspected. SCE estimates that approximately 60 cubic yards of lake bed will need to be excavated and temporarily removed to expose the dam and outlet works. After exposing the dam face and outlet works, select areas of the dam face and outlet works will be demolished, cleaned and removed, as needed based on inspection of the dam and outlet structures. Demolition work is expected to include the following steps:
 - Demolish and/or remove the corroded steel grating on the grizzly structure in front of the 24-inch steel outlet pipe;
 - Demolish or remove eroded concrete and rip rap that supports the existing grizzly;
 - Remove any eroded and damaged concrete supporting or partially supporting the existing 24-inch steel pipe inlet collar;
 - Remove the remnant of the 24-inch steel pipe collar; and
 - Clean the main dam face in the vicinity of the outlet works.

All debris generated as a result of demolition and construction activities will be temporarily stored in containers to be placed in one of the staging areas and then removed to an off-site disposal facility. The debris will be disposed of in accordance with SCE hazardous waste policies.

Repair and installation work will include the following steps, as appropriate based on inspection of the exposed structures:

- Fabricate a new steel collar of the same size as the original steel pipe and weld splice it onto the original steel pipe;
- Pour concrete to frame and support the new steel pipe collar, such that the concrete is flush with the original concrete profile, to the extent possible;
- Replace the existing steel grate with a new fiberglass grate of approximately the same overall size and shape (fiberglass bars will be 0.5-inch by 4-inch); and
- Pour concrete support structure for the new grate at the same location of the original grate, matching, to the extent possible, the geometry of the original concrete structure.

The existing plinth of the dam will be modified on both sides of the new fiberglass grate. This modification is required to anchor the geomembrane to the base of the dam. A single 30-foot step plinth will be installed on the north side of the outlet and four 7.5-foot step plinths (30 feet total length) will be installed on the south side of the outlet. Each plinth will be 2-feet high by 3-feet wide. Based on these dimensions, the new step plinths require approximately 360 cubic feet or 13.3 cubic yards of concrete. During all work activities, any uncured concrete will be covered either by polyethylene plastic sheeting or wooden forms secured to the surface, which will prevent water from making direct contact with the concrete surface.

After the new step plinths have cured, a contractor will clean and prepare the new concrete plinths and existing wood frame dam surface and install a geomembrane liner on the upstream timber-faced surface of the dam, around the outlet works. At the bottom of the existing liner and near the foundation of the dam, anchors will fasten the liner to the dam.

Following construction, the lake bottom will be restored to its pre-Project contours. All construction debris, including soil excavated from the construction site and spent fabric filtration socks will be promptly removed and taken to an approved disposal site. Finally, the temporary coffer dam will be removed and Tioga Lake will be allowed to refill with natural run-off.

- *Monitoring.* SCE will monitor turbidity for the duration of the Project as required by this water quality certification (certification). Changes in turbidity will not cause nuisance or adversely affect the beneficial uses identified in the *Water Quality Control Plan for the Lahontan Region* (Lahontan Basin Plan). Increases in turbidity will not exceed baseline levels by more than 10 percent, or 15 nephelometric turbidity units (NTUs) during in-water work.

Environmental Commitments

Drawdown of the reservoir and dewatering of the in-reservoir work area, subsequent excavation and use of construction vehicles and equipment within the reservoir bed, and use of potentially hazardous materials such as fuels and cement could potentially result in degradation of aquatic habitat in Tioga Lake and downstream in Glacier Creek. SCE is proposing to implement a number of environmental measures and best management practices (BMPs), which are described in Attachment B (Attachment F of the certification application) of this certification. SCE intends to implement these environmental measures and BMPs to minimize the potential for Project impacts to water quality in Tioga Lake, Glacier Creek, and Lee Vining Creek during construction.

Project Schedule

Prior to in-water work, SCE plans to start drawing down Tioga Lake on or around August 1, 2016, and expects to complete drawdown by August 22, 2016. SCE anticipates that drawdown of Tioga Lake to facilitate access and construction will take approximately five weeks, which includes time for the work area to dry. SCE proposed construction activities would begin on September 6, 2016 and be completed by November 15, 2016.

II. Regulatory Authority

Water Quality Certification and Related Authorities

The Federal Clean Water Act (CWA) (33 U.S.C. §§ 1251-1387) was enacted “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (33 U.S.C. § 1251(a).) Section 101 of the CWA (33 U.S.C. § 1251 (g)) requires federal agencies to “co-operate with the State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.”

Section 401 of the CWA (33 U.S.C. §1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the CWA, including water quality standards and implementation plans promulgated pursuant to section 303 of the CWA (33 U.S.C. § 1313). CWA section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the CWA and with any other appropriate requirement of state law. Section 401 further provides that state certification conditions shall become conditions of any federal license or permit for the project. The State Water Resources Control Board (State Water Board) is the state agency responsible for such certification in California. (Wat. Code, § 13160.) The State Water Board’s Executive Director may issue a decision on a certification application. (Cal. Code Regs., tit. 23, § 3835, subd. (a).)

Notice of Water Quality Certification Application

SCE’s application for certification was received by the State Water Board on September 17, 2015. On April 1, 2016, SCE submitted a formal withdrawal and re-filing request for certification of the Project.

The State Water Board provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the State Water Board's website on January 21, 2016. No public comments were received.

The State Water Board forwarded the portions of the application that have the potential to cause adverse water quality impacts other than specific impacts resulting from alterations to instream flows to the Lahontan Regional Water Quality Control Board (Lahontan Regional Water Board) on March 8, 2016. No comments were received.

Other Agencies' Permits

On September 14, 2015, SCE applied for a Nationwide Permit (NWP) from the Army Corps of Engineers (USACE) under section 404 of the CWA, and submitted an application for a Lake or Streambed Alteration Agreement to the California Department of Fish and Wildlife (CDFW) for Project activities. The NWP verification letter from the USACE is contingent on certification by the State Water Board.

Water Quality Control Plans

The California Regional Water Quality Control Boards (Regional Water Boards) adopt, and the State Water Board and United States Environmental Protection Agency (USEPA) approves, water quality control plans, also known as basin plans, for each watershed basin in the State. The basin plans designate the beneficial uses of waters within each watershed basin, and water quality objectives designed to protect those uses pursuant to Section 303 of the Clean Water Act. (33 U.S.C. § 1313.) The State Water Board may also adopt water quality control plans. The beneficial uses, together with the water quality objectives that are contained in the basin plans and state water quality control plans, and state and federal anti-degradation requirements, constitute California's water quality standards.

The Lahontan Regional Water Board adopted, and the State Water Board and USEPA approved, the Lahontan Basin Plan. Existing beneficial uses designated for Lee Vining Creek apply to Glacier Creek and include: municipal and domestic supply; agricultural supply; ground water recharge; freshwater replenishment; hydropower generation; water contact recreation; non-contact water recreation; commercial and sport fishing; cold freshwater habitat; wildlife habitat; and spawning (spawning, reproduction, and development). Protection of the instream beneficial uses identified in the Lahontan Basin Plan requires maintenance of adequate instream flows as well as effluent limitations and other limitations on discharges of pollutants from point and non-point sources to Lee Vining Creek and its tributaries.

California Environmental Quality Act

The State Water Board has reviewed the proposed Project and conditions incorporated into the Project to protect the environment and beneficial uses designated for Lee Vining and Glacier creeks. The State Water Board has determined that this Project involves the repair and maintenance or minor alteration of an existing facility and therefore is categorically exempt from the requirements of the California Environmental Quality Act (Cal. Code Regs., tit. 14, § 15301). The State Water Board will file a Notice of Exemption within five days of issuance of this certification.

State Water Board Authority

California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all certifications, which are included in this certification. Further, State Water Board staff considered the Lahontan Basin Plan, the existing water quality conditions, and Project-related controllable factors in the development of this certification.

In order to ensure that the Project operates to meet water quality standards as anticipated, and to ensure that the Project will continue to meet state water quality standards and other appropriate requirements of state law over its lifetime, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. This certification requires SCE to submit to the Deputy Director for Water Rights (Deputy Director) a Tioga Lake and Glacier Creek Water Quality Monitoring Plan. SCE will implement the environmental protection measures and BMPs in its *Water Quality Best Management Practices* (Attachment B), which are incorporated as conditions in this certification.

III. Findings

The State Water Board has found that, with the conditions and limitations imposed under this certification, the proposed Project will be protective of the state water quality standards and other appropriate requirements of state law.

All documents and other information that constitute the public record for this Project shall be maintained by the State Water Board's Division of Water Rights and shall be available for public review at the following address: State Water Board, Division of Water Rights, 1001 I Street, Sacramento, CA 95814.

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ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT SOUTHERN CALIFORNIA EDISON COMPANY'S TIOGA LAKE DAM OUTLET AND GRIZZLY REPAIR PROJECT will comply with sections 301, 302, 303, 306, and 307 of the CWA, and with applicable provisions of State law, if the Applicant complies with the following terms and conditions during the Project activities certified herein.

CONDITION 1. The Applicant shall comply with the Project description submitted to the State Water Board.

CONDITION 2. The Applicant shall monitor water quality during construction and immediately report any discharge or violation of the Lahontan Basin Plan water quality objectives to the State Water Board and Lahontan Regional Water Board staff.

CONDITION 3. The Applicant shall submit a Tioga Lake and Glacier Creek Water Quality Monitoring Plan to the Deputy Director for review and approval. Construction of the Project shall not start until the Tioga Lake and Glacier Creek Water Quality Monitoring Plan has been approved by the Deputy Director. At a minimum, the Tioga Lake and Glacier Creek Water Quality Monitoring Plan shall include how the Applicant will: 1) determine baseline conditions prior to construction; 2) determine monitoring locations and monitoring schedule; and 3) report monitoring results. All monitoring results, including a map of monitoring locations, shall be submitted to State Water Board staff on a monthly basis until the Project is completed.

CONDITION 4. The Applicant shall follow the *Water Quality Best Management Practices* included as Attachment B of this certification. Notwithstanding any more specific conditions in this certification, the Applicant shall comply with all measures described in Attachment B to this certification and in the application for certification and its supplements.

CONDITION 5. Construction work shall occur during the dry season. The Applicant shall maintain the required minimum instream flows of two cfs or the natural flow into Tioga Lake, whichever is less, below Tioga Lake at all times. Fisheries effects (e.g., a fish kill or fish observed in obvious distress) resulting from any deviations from prescribed flow shall be minimized and reported immediately to CDFW, the Lahontan Regional Water Board Executive Officer (Executive Officer) and the Deputy Director.

CONDITION 6. In 2013, the United States Fish and Wildlife Service proposed critical habitat for Yosemite toad (federally listed as threatened) and Sierra Nevada yellow-legged frog (federally listed as endangered). Both of these species are known to have occurred along the margins of Tioga Lake in the past and may still occupy lakeside habitats. An Environmental Awareness Program shall be implemented so that all construction crew are aware of the potential for these species' presence and the procedures to follow if encountered during construction. The Applicant shall conduct a pre-construction survey to confirm the absence of these species within 15 days of initiating construction equipment mobilization. If Yosemite toad or Sierra Nevada yellow-legged frog is encountered, a qualified biologist shall be present on-site for the duration of the Project to ensure the Environmental Awareness Program is properly implemented and to minimize impacts to Yosemite toad and Sierra Nevada yellow-legged frog.

CONDITION 7. All water quality compliance monitoring shall be conducted using procedures described in Code of Federal Regulations Title 40, Chapter I, Subchapter D, Part 136 (40 C.F.R. § 136) and State Water Board's Surface Water Ambient Monitoring Program methods.

CONDITION 8. Project activities shall not cause an increase in turbidity downstream of the Project area greater than those identified in the Lahontan Basin Plan. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent, except during in-water working periods when a turbidity increase of 15 NTU over background turbidity measured in Glacier Creek 300 feet downstream from the working area will be allowed. Minimum sampling frequency shall be three times per day when construction activities have the potential to discharge to surface waters. Samples and measurements taken for the purpose of monitoring shall be representative of the activity. The Applicant shall monitor turbidity levels approximately 50 feet upstream of Project activities (i.e., natural background) and approximately 300 feet downstream of the construction activities. Turbidity shall be measured using nephelometry and in accordance with Condition 7 requirements. A hand-held field meter may be used, provided the meter uses a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. For each meter used for monitoring, a calibration and maintenance log shall be maintained onsite and provided to State Water Board staff upon request.

If an increase in turbidity caused by Project activities is measured between the upstream and downstream sampling locations, monitoring frequency shall be increased to a minimum of every hour during this period. If three consecutive sample results or a 24-hour average turbidity indicate that turbidity levels exceed the limits established in this condition, the associated Project activities shall cease immediately and the violation shall be reported immediately to the Deputy Director and the Executive Officer. Construction activities may not re-start without the permission of the Deputy Director. In addition, any and all actions shall be implemented immediately to reduce and maintain turbidity at or below the given thresholds.

CONDITION 9. Project activities shall not cause settleable matter to exceed 0.1 milliliters per liter in Glacier Creek as measured approximately 300 feet downstream from Project activities.

CONDITION 10. All equipment must be washed prior to transport to the Project site and must be free of sediment, debris and foreign matter. Equipment used in direct contact with surface water shall be steam cleaned prior to use. Wash water shall be contained and disposed of in compliance with State and local laws, ordinances, and regulations.

CONDITION 11. Construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, other organic or earthen material, and any other substances which could be hazardous to aquatic life resulting from Project-related activities shall be prevented from entering surface waters.

CONDITION 12. No unset cement, concrete, grout, damaged concrete, concrete spoils, and wash water used to clean concrete surfaces shall contact or enter surface waters.

CONDITION 13. Any maintenance or refueling of vehicles or equipment occurring on-site will be done in a designated area with secondary containment, located away from drainage courses to prevent the runoff of stormwater and the runoff of spills. All equipment using gas, oil, hydraulic fluid or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (motors, pumps, generators, etc.) and vehicles not in use shall be positioned over drip pans or other types of containment. Spill and containment equipment (oil spill booms, sorbent pads, etc.) shall be maintained onsite at all locations where such equipment is used or staged.

CONDITION 14. All imported riprap, rocks, and gravels used for construction shall be pre-washed. Wash water shall be contained and disposed of in compliance with State and local laws, ordinances, and regulations.

CONDITION 15. All construction debris and trash shall be contained and regularly removed from the work area to the staging area during construction activities. Upon completion, all Project-generated debris, building materials, excess material, waste, and trash shall be removed from all the Project sites for disposal at an authorized disposal site. Excavated material may be left in place in the reservoir bed or used to backfill the liner bottom anchoring provided that Basin Plan water quality objectives are not exceeded. If excavated material is left on site, the Applicant shall monitor water turbidity and settleable solids during and after filling up Tioga Lake and report the results to the Deputy Director and the Executive Officer.

CONDITION 16. A copy of this certification shall be provided to all contractors and subcontractors conducting construction work, and copies shall remain in their possession at the Project site. The Applicant shall be responsible for work conducted by its contractors or subcontractors.

CONDITION 17. The Deputy Director and the Executive Officer shall be notified one week prior to the commencement of ground disturbing activities. Upon request, a construction schedule shall be provided to State Water Board and Lahontan Regional Water Board staff in order for staff to be present onsite should they elect to do so. The Applicant shall provide State Water Board and Lahontan Regional Water Board staff access to the Project site to document compliance with this certification.

CONDITION 18. If at any time an unauthorized discharge to surface waters (including rivers or streams) occurs or monitoring indicates that the Project has or could soon be in violation of water quality objectives, the associated Project activities shall cease immediately and the Deputy Director and the Executive Officer shall be notified. Associated activities may not resume without prior approval from the Deputy Director.

CONDITION 19. Unless otherwise specified in this certification or at the request of the Deputy Director, data and/or reports must be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with Water Code section 13167.

CONDITION 20. The State Water Board reserves authority to modify this certification if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair the beneficial uses of Lee Vining Creek or its tributaries.

CONDITION 21. This certification is contingent on compliance with all pertinent permits and orders issued by the Lahontan Regional Water Board, and compliance with the terms and conditions of all water right licenses and permits applicable to this Project, existing, or as amended, by the State Water Board.

CONDITION 22. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the CWA. The Applicant must take all reasonable measures to protect the beneficial uses of Lee Vining Creek and its tributaries.

CONDITION 23. This certification does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (ESA) (Fish and G. Code, §§ 2050-2097) or the federal ESA (16 U.S.C. §§ 1531-1544). If a "take" will result from any act authorized under this certification or water rights held by the Applicant, the Applicant must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Applicant is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

CONDITION 24. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies, penalties, process or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the CWA, the applicability of any state law authorizing remedies, penalties, processes or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

CONDITION 25. In response to a suspected violation of any condition of this certification, the State Water Board or Lahontan Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 26. Construction shall not commence until all necessary federal, state, and local approvals are obtained.

CONDITION 27. Any requirements in this certification that refer to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 28. The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. If the State Water Board is not notified of a significant change to the Project, it will be considered a violation of this certification.

CONDITION 29. The State Water Board will provide notice and an opportunity to be heard in exercising its authority to add or modify any of the conditions of this certification.

CONDITION 30. This certification is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

CONDITION 31. This certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

CONDITION 32. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action if necessary to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 33. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.



Thomas Howard
Executive Director

6/3/16
Date

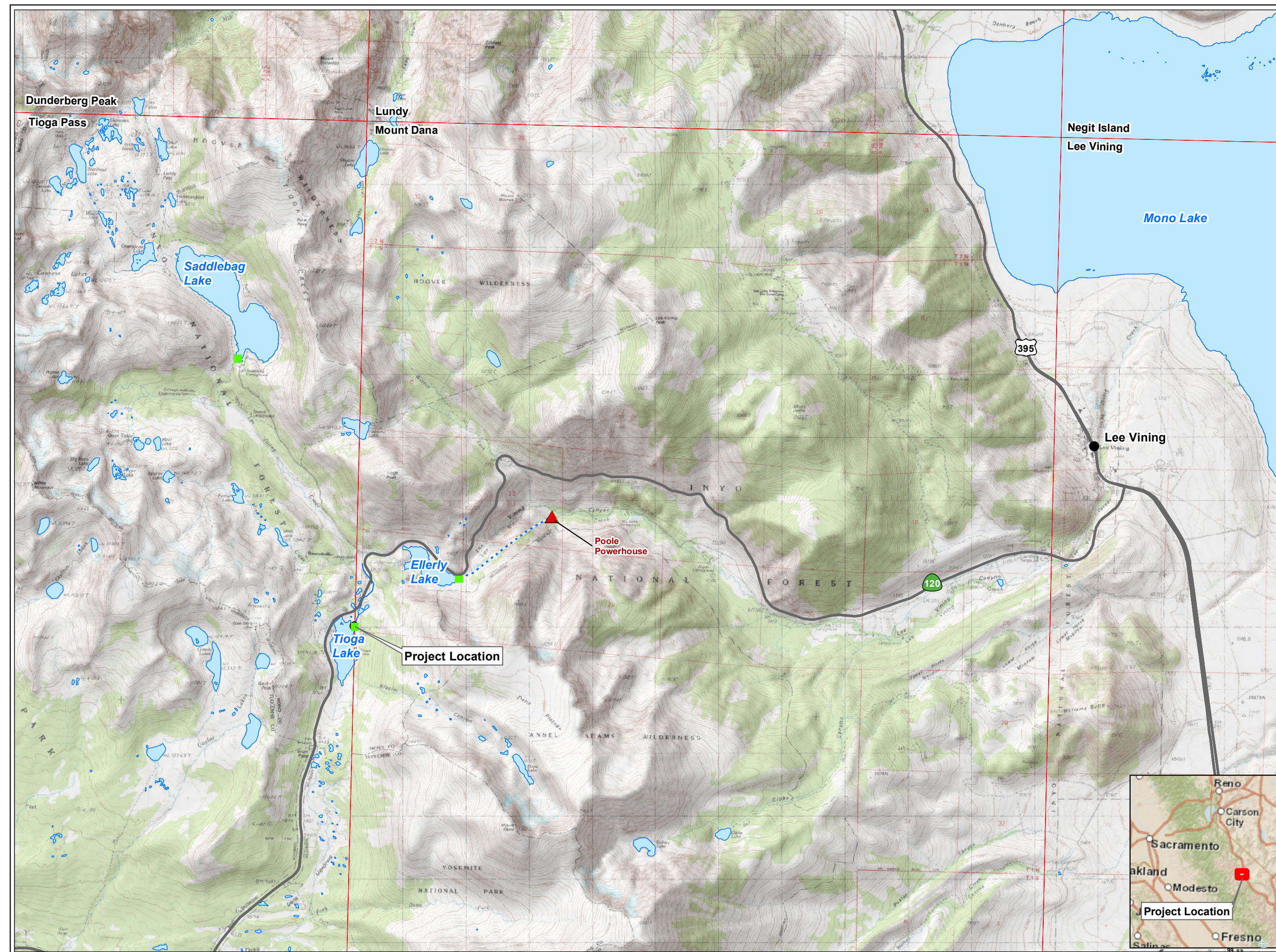
Attachment A: Figure 1 – Project Location

Attachment B: Water Quality Best Management Practices (as submitted by the Applicant)

ATTACHMENT A

Figure 1 – Project Location

Submitted by Southern California Edison Company
As Map 1 of the Application for Water Quality Certification
For the Tioga Lake Dam Outlet and Grizzly Repair Project



- Facilities**
- Powerhouse
 - Dams
 - Utility
 - Water Conveyance Feature
 - Gaging Station
 - Water Conduit
- Other Features**
- Roadway
 - River/Stream
 - Lake/Reservoir
 - USGS 7.5-minute Quadrangle

Project Location



Eastern Hydro Generation

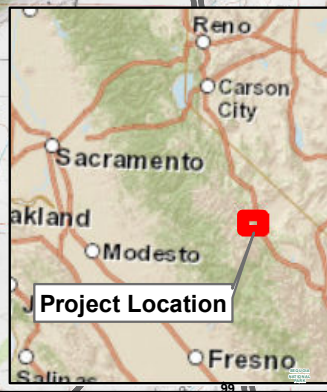
Map 1

Tioga Dam Outlet and Grizzly Repair Project Vicinity Map



Projection: UTM Zone 11
Datum: NAD 83

Date: 9/10/2015
Southern California Edison (SCE) has no reason to believe that there are any inaccuracies or defects with information incorporated in this work and make no representations of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor are any such warranties implied, with respect to the information or data furnished herein. No part of this map may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording system, except as expressly permitted in writing by SCE.



ATTACHMENT B

WATER QUALITY BEST MANAGEMENT PRACTICES

Submitted by Southern California Edison Company
As Attachment F to the Application for Water Quality Certification
For the Tioga Lake Dam Outlet and Grizzly Repair Project

- **WQ-1 Authorization for work within Waters of the U.S./Waters of the State:** Prior to implementation of Project activities SCE will obtain: 1) coverage under Section 404 of the CWA; 2) certification under Section 401 of the CWA; and 3) a California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement. All BMPs, avoidance, protection, and mitigation measures included in these permits will be implemented as part of the Project.
- **WQ-2 Dewatering and Diversion Plan:** SCE will develop a draft Dewatering and Diversion Plan for the Project. SCE will consult with CDFW, the State Water Resources Control Board (State Water Board), and United States Army Corps of Engineers (USACE) to finalize the plan. All agency revisions and comments will be incorporated into the draft plan. SCE will obtain approval from CDFW, State Water Board, and USACE on the final Dewatering and Diversion Plan prior to initiation of dewatering. The agency-approved Dewatering and Diversion Plan will be implemented as part of the Project.
- **WQ-3 Water Quality Monitoring Plan:** A Water Quality Management Plan will be prepared and will identify the water quality monitoring requirements that will be implemented in Tioga Lake and downstream of the reservoir during all phases of the Project. The Water Quality Management Plan will identify water quality criteria and thresholds that must not be exceeded. Work activities will be discontinued if the water quality thresholds identified in the Water Quality Management Plan are exceeded, or if water quality is otherwise compromised (e.g., visible sediment plumes or oil spills). Work will resume only after appropriate consultation with resource agencies and implementation of appropriate measures. SCE will obtain approval from USACE, State Water Board, and CDFW on the Water Quality Management Plan prior to initiation of construction. The agency-approved Water Quality Management Plan will be implemented as part of the Project.
- **WQ-4 Concrete Waste Management Measures:** SCE will implement measures to reduce the discharge of pollutants to storm water from concrete waste or rip-rap by conducting washout off site, washing in designated areas only, eliminating storm water discharges by infiltrating or recycling the wash water and training employees and subcontractors. Specific concrete waste management measures include:
 - Store dry and wet materials under cover, away from drainage areas.
 - Avoid mixing excess amounts of fresh concrete or cement on site.
 - Perform washout of concrete trucks off site or in designated areas only. Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
 - Do not allow excess concrete to be dumped on site, except in designated areas.
 - For onsite washout:
 - Locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
 - Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed of properly.
 - When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water to a bermed or level area.

- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or dispose in the trash.
- Educate employees and subcontractors in proper concrete waste management.
- **WQ-5 Material Delivery and Storage Measures:** SCE will prevent the discharge of pollutants to storm water, Tioga Lake, or Glacier Creek resulting from material delivery and storage by minimizing the storage of hazardous materials on site, storing materials in a designated area, installing secondary containment, conducting regular inspection, and training employees and subcontractors. Specific material delivery and storage measures include:
 - Designate an area of the construction site for material delivery and storage.
 - Place near the construction entrance, away from waterways
 - Avoid transport near drainage paths or waterways
 - Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, National Fire Protection Association (NFPA) 30.
 - Keep your inventory down. Store only the amount you need, for only as long as you need it.
 - Store as few hazardous materials on site as possible.
 - Handle hazardous materials as infrequently as possible.
 - Whenever possible, store materials in a covered area with secondary containment such as an earthen dike, horse trough, or even kid's wading pool for non-reactive materials such as detergents, oil, grease and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
 - Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containment.
 - If drums must be kept in an uncovered area, store them at a slight angle to reduce ponding of rainwater in the lids and to reduce corrosion.
 - Try to keep chemicals in their original containers, and keep them well labeled.
 - Train employees and subcontractors.
 - Employees trained in emergency spill cleanup procedures should be present when dangerous materials or liquid chemicals are handled.
- **WQ-6 Vehicle and Equipment Maintenance Measures:** SCE will prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance by running a "dry site." This involves using off-site facilities, performing work in designated areas only, providing cover for materials stored outside, checking for leaks and spills, containing and cleaning up spills immediately, and training employees and subcontractors. Specific vehicle and equipment maintenance measures include:

- Keep vehicles and equipment clean; don't allow excessive buildup of oil and grease.
 - Use off-site repair shops as much as possible. Maintaining vehicles and equipment outdoors or in areas where vehicle or equipment fluids may spill or leak onto the ground can pollute stormwater. If you maintain a large number of vehicles or pieces of equipment, consider using an offsite repair shop. These businesses are better equipped to handle vehicle fluids and spills properly.
 - Performing this work off site can also be economical by eliminating the need for a separate maintenance area.
 - If maintenance must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and runoff of spills.
 - Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
 - Place a stockpile of spill cleanup materials where it will be readily accessible.
 - Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
 - Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
 - Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on site.
 - Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
 - Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- **WQ-7 Vehicle and Equipment Cleaning Measures:** SCE will prevent or reduce the discharge of pollutants to storm water, lake, or creek from vehicle and equipment cleaning by using off-site facilities, washing in designated areas only, eliminating discharges to the storm drain, or other areas where the pollution may reach the lake or creek by infiltrating or recycling the wash water and training employees and subcontractors. Specific vehicle and equipment cleaning measures include:
 - Use off-site commercial washing businesses as much as possible. Washing vehicles and equipment outdoors or in areas where wash water flows onto the ground can pollute storm water.
 - If you wash a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work off site can also be economical by eliminating the need for a separate washing operation at your site.
 - If washing must occur on site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies.
 - Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.

- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning on site. Steam cleaning can generate significant pollutant concentrations leading to potential storm water and groundwater contamination.
- **WQ-8 Vehicle and Equipment Fueling Measures:** To prevent fuel spills and leaks, and their associated impacts to storm water, lakes, or creeks, SCE will use off-site facilities, fuel in designated areas only, enclose or cover stored fuel, implement spill controls, and train employees and subcontractors. Specific vehicle and equipment fueling measures include:
 - Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto the ground can pollute storm water or other water bodies. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off site can also be economical by eliminating the need for a separate fueling area at your site.
 - If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills.
 - Discourage "topping-off" of fuel tanks.
 - Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.
 - Place a stockpile of spill cleanup materials where it will be readily accessible.
 - Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
 - Carry out all Federal and State requirements regarding stationary above ground storage tanks.
 - Do not use mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps small forklifts, most vehicles should be able to travel to a designated area with little lost time.
 - Train employees and subcontractors in proper fueling and cleanup procedures.
- **WQ-9 Solid Waste Management Measures:** SCE will prevent or reduce the discharge of pollutants to storm water, lake or creek from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors. Specific solid waste management measures include:
 - Select a designated waste collection area on site.
 - When possible, locate containers in a covered area.
 - Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it's windy.
 - Collect site trash daily.

- Erosion and sediment control devices tend to collect litter. Remove this solid waste promptly.
 - Salvage or recycle any useful material.
 - Make sure that toxic liquid wastes (used oils, solvents, paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
 - Arrange for regular waste collection before containers overflow.
 - Plan for additional containers and more frequent pickup during the demolition phase of construction.
 - If a container does spill, clean up immediately.
 - Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.
 - Train employees and subcontractors in proper solid waste management.
- **WQ-10 Silt Fence Measures:** A silt fence is a temporary sediment barrier consisting of filter fabric stretched across and attached to supporting posts, entrenched, and, depending upon the strength of the fabric used, supported with wire fence. Silt fences trap sediment in two ways: (1) by intercepting and detaining small amounts of sediment from disturbed areas during construction operations in order to remove sediment from behind the fence: and (2) by decreasing the velocity of flows up to 0.5 cfs in swales.

Silt fences may be used for perimeter control, placed upstream of the point(s) of discharge of runoff from a site, but before the flow becomes concentrated. They may also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion, and perpendicular to minor swales or ditch lines for up to one acre contributing drainage areas. Silt fences are not intended for use in detaining concentrated flows, and are only applicable for sheet or overland flows. If necessary, SCE will implement the following silt fence measures:

- **Planning:** Silt fences are preferable to straw barriers in many cases. Laboratory work at the Virginia Highway and Transportation Research Council has shown that silt fences can trap a much higher percentage of suspended sediments than can straw bales. While the failure rate of silt fences is lower than that of straw barriers, there are many instances where silt fences have been improperly installed. The following installation methods can improve performance and should be followed:
 - Construct along a level contour.
 - Silt fences should remain in place until the disturbed area is permanently stabilized.
 - Provide sufficient room for sediment removal equipment between the silt fences and toes of slopes or other obstructions.
 - Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
 - Leave an undisturbed or stabilized area immediately downslope from the fence.

- Do not place in live streams or intermittently flowing channels.
- Design:
 - Limit the upstream drainage area to 1 acre or less when used alone or in combination-with-sediment basin in a larger site.
 - Limit the maximum slope perpendicular to the fence line, should be 1:1.
 - Limit the maximum sheet or overland flow path length to any point along the fence to 100 feet.
 - Limit the concentrated flows reaching the fence to 0.5 cfs.
 - Selection of a filter fabric is based on soil conditions at the construction site (which affect the equivalent opening size (EOS) fabric specification) and characteristics of the support fence (which affect the choice of tensile strength). The designer shall specify a filter fabric that retains the soils found on the construction site yet will have openings large enough to permit drainage and prevent clogging. The following criteria are recommended for selection for the equivalent opening size:
 - If 50 percent or less of the soil, by weight, will pass the U.S. Standard Sieve No. 200, select the EOS to retain 85 percent of the soil. The EOS should not be finer than EOS 70.
 - For all other soil types, the EOS should be no larger than the openings in the U.S. Standard Sieve No. 70 (0.0083 in. [0.21 mm.]) except where direct discharge to a stream, lake or wetland will occur, then the EOS shall be no larger than Standard Sieve No. 100.
 - To reduce the chance of clogging, it is preferable to specify a fabric with openings as large as allowed by the criteria. No fabric should be specified with an EOS smaller than U. S. Standard Sieve No. 100 (0.0059 in. (0. 15 mm)). If 85 percent or more of a soil, by weight, passes through the openings in a No. 200 sieve (0.0029 in. (0.074 mm)), filter fabric shall not be used. Most of the particles in such a soil would not be retained if the EOS was too large, and they would clog the fabric quickly if the EOS was small enough to capture the soil.
 - The fence should be supported by a wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Filter fabric material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0°F to 120°F.
- Installation Guidelines:
 - Filter fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.
 - Posts should be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 30 inches.

- A trench should be excavated approximately 8 inches wide and 12 inches deep along the line of posts and upslope from the barrier.
- When standard strength filter fabric is used, a wire mesh support fence should be fastened securely to the upslope side of the posts using heavy-duty wire staples at least 1 inch long, tie wires or hog rings. The wire should extend into the trench a minimum of 4 inches.
- The standard strength filter fabric should be stapled or wired to the fence, and 20 inches of the fabric should extend into the trench. When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated and filter fabric stapled or wired directly to the posts.
- The filter fabric should be purchased in a continuous role/piece, cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 inch overlap, and both ends securely fastened to the post.
- The trench should be backfilled with 3/4-inch minimum diameter washed gravel or compacted native material.
- Maintenance
 - Inspect monthly during dry periods and immediately after each rainfall. Repair as necessary. Sediment must be removed when it reaches approximately one third the height of the fence, especially if heavy rains are expected.
 - Filter fences should not be removed until the upslope area has been permanently stabilized.
- **WQ-11 Sand Bag Barrier Measures:** Stacking sandbags along a level contour creates a barrier which detains sediment-laden water, ponding water upstream of the barrier and promoting sedimentation.

Sandbag berms are appropriate to use when construction of check dams or sumps in a stream is undesirable. The sandbag berms can provide the same function as a check dam without disturbing the stream or vegetation. The sandbag berm will also allow a small sediment retention area to be created prior to construction of final detention basins. For installation of a sandbag berm, the following criteria should be observed:

- Drainage Area - Up to -five (5) acres
- Height of Berm - 18 inches minimum height, measured from the top of the existing ground at the upslope toe to the toe of the barrier
- Width of Berm - 48 inches minimum width measured at the bottom of the barrier; 18 inches at the top
- Sandbag Size – length: 24 to 30 inches, width: 16 to 18 inches, and thickness: 6 to 8 inches. Weight: 90 to 125 pounds.
- Sandbag Material - Polypropylene, polyethylene or polyamide woven fabric, minimum unit weight four (4) ounces per square yard, mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70 percent. Use of burlap is discouraged since it rots and deteriorates easily.

- Grade of Sand - Coarse sand, gravel.
 - Streambed Materials will be used for sandbags
 - Runoff water shall flow over the tops of the sandbags or through four (4) inch polyvinyl chloride.
 - Inspect after each rain
 - Reshape or replace damaged sandbags immediately
 - Remove sediment when it reaches six inches in depth
- **WQ-12 Spill Prevention and Control Plan:** SCE will develop a plan to prevent or reduce the discharge of pollutants to storm water, lake, and creek from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees. This best management practice covers only spill prevention and control. However, Material Delivery and Storage and Material Use, also contain useful information, particularly on spill prevention. The plan will include, but is not limited to, the following:
 - Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
 - Place a stockpile of spill cleanup materials where it will be readily accessible.
 - Train employees in spill prevention and cleanup.
 - Clean up leaks and spills immediately.
 - On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and an absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
 - Never hose down or bury dry material spills. Sweep up or excavate the material and dispose of properly. See the waste management BMPs in this chapter for specific information.
 - Report spills to local agencies, such as the Fire Department; they can assist in the cleanup.
 - Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).
 - Use the following measures related to specific activities:
 - Vehicle and Equipment Maintenance:
 - If maintenance must occur on site, use a designated area, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills.
 - Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.

- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on site.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trash cans or dumpsters can leak oil and contaminate storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if is cracked. Put it into the containment area until you are sure it is not leaking.
- Vehicle and Equipment Fueling
 - If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills.
 - Discourage "topping-off" of fuel tanks.
 - Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.
- **WQ-13 Hazardous Waste Management Measures:** Prevent or reduce the discharge of pollutants to storm water, lake and creek from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors. The following steps will help reduce storm water pollution from hazardous wastes:
 - Use all of the product before disposing of the container.
 - Do not remove the original product label; it contains important safety and disposal information.
 - Do not over apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Till fertilizers and lime into soil rather than hydro-seeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off site by runoff. Do not apply these chemicals just before

it rains. People applying pesticides must be certified in accordance with Federal and State regulations.

- Select a designated waste collection area on site.
- Hazardous materials and wastes should be stored in properly labeled covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix waste. This can cause chemical reactions, make recycling impossible, and complicate disposal.
- Recycle any useful material such as used oil.
- Make sure that toxic liquid wastes (used oils, solvents, paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Train employees and subcontractors in proper hazardous waste management.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.