

## Talega-Escondido/Valley-Serrano 500-kV Interconnect Project

### Lake Elsinore Advanced Pumped Storage Project

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- ◇ Southern 500-kV transmission line (Midpoint-Southern [LEAPS-Pendleton] T/L). The Southern transmission line constitutes an approximately 16.7-mile long 500-kV OHL transmission line segment extending southerly between the Applicant's proposed new Southern (Pendleton or Case Springs) substation to the Applicant's proposed new Southern GIL transition, located approximately 1.7 miles southeast of the Northern GIL transition. The Midpoint (LEAPS) substation is connected to the Southern GIL transition using about 1.8 miles of 500-kV GIL underground transmission. The total line length (including both GIL and OHL) between the Southern (Pendleton or Case Springs) substation and the Midpoint (LEAPS) substation is about 18.5 miles.
  - ◇ Western 230-kV transmission line (Talega-Southern [Talega-Pendleton or Case Springs] T/L). The Western transmission line constitutes an approximately 14-mile long 230-kV OHL upgrade extending westerly between the Applicant's proposed new Southern (Pendleton or Case Springs) substation and SDG&E's existing Talega substation.
  - ◇ Eastern 230-kV transmission line (Southern-Escondido [Pendleton or Case Springs-Escondido] T/L). The Eastern transmission line constitutes an approximately 37-mile long 230-kV OHL upgrade extending easterly between the Applicant's proposed Southern (Pendleton or Case Springs) substation and SDG&E's existing Escondido substation, including the relocation of approximately 7.7 miles of 69-kV line.
- **Substations and switchyards.** The new Northern (Lake) and Southern (Pendleton or Case Springs) substations will be as generally described for the TE/VS Interconnect project. In addition, a new substation, identified as the Midpoint (LEAPS) substation, will be constructed at the transition point between the GIL from the powerhouse to the upper interconnect GIL. The proposed Midpoint (LEAPS) substation is located within an unincorporated area (Lakeland Village) of Riverside County.

As illustrated in [Figure 3-33](#) (Santa Rosa Powerhouse and Midpoint [LEAPS] Substation Sites), the new Midpoint (LEAPS) substation will be constructed as an underground facility and integrated into the design of the Santa Rosa powerhouse. The substation will serve to provide transmission connection from the powerhouse to the TE/VS Interconnect project (CPUC No. 07-10-005). The distance between the Northern (Lake) substation (500-kV, 115-kV tie option, and 13.8-kV station power) and the Northern GIL transition is about 9 miles and the distance between the Northern GIL transition and the Midpoint (LEAPS) substation (500-kV, 115-kV ties, and 13.8-kV station power) is about 1.8 SM. The new GIS will be located within the Congressional boundaries of the CNF on privately owned lands that are neither owned nor administered by the Forest Service.

A conceptual site plan of the Midpoint (LEAPS) substation is presented [Figure 3-34](#) (Midpoint [LEAPS] Substation - Conceptual Site Plan). Conceptual elevation drawings for that substation are presented in [Figure 3-35](#) (Midpoint [LEAPS] Substation – Conceptual Elevation Drawings). The substation is electrically depicted in [Figure 3-36](#) (Midpoint [LEAPS] Substation - Single-Line Diagram).

The proposed Midpoint (LEAPS) substation will enclose a breaker and a half, 500-kV configuration, and include the substation/switchyard gear, consisting of two 16-kV to

500-kV step-up transformers for two reversible vertical Francis-type pump-turbine/motor generators, nominally rated at 300-MW when pumping. The switchyard will connect lower-voltage power from the powerhouse to the high-voltage transmission system. The primary components of the switchyard include circuit breakers and disconnect switches, switchyard buses and structures, and microwave/telecommunication facilities. Two 115-kV distribution-level circuits will be provided for SCE's Lake Elsinore and Skylark substations.

- **Santa Rosa Powerhouse.** As illustrated in [Figure 3-32](#) (Lake Elsinore Advanced Pumped Storage Project – Conceptual Drawings) and [Figure 3-33](#) (Santa Rosa Powerhouse and Midpoint [LEAPS] Substation Sites), the proposed Santa Rosa powerhouse site (Section 14, T6S, R5W, SBBM, Lake Elsinore 7.5-Minute USGS Topographic Quadrangle)<sup>59</sup> is approximately located at the terminus of Santa Rosa Drive, between Ponce Drive and Grape Street, within unincorporated Lakeland Village area of Riverside County. The site is located to the south and east of SR-74 and northeast of Grand Avenue. The site is privately owned and, although located within the Congressional boundaries of the TRD, is not presently administered by the Forest Service. Based on final grading plans, a portion of the powerhouse site, inclusive of its associated substation, may be sited on NFS lands. Rights to utilize those lands and easements across those lands will be secured from the Forest Service.

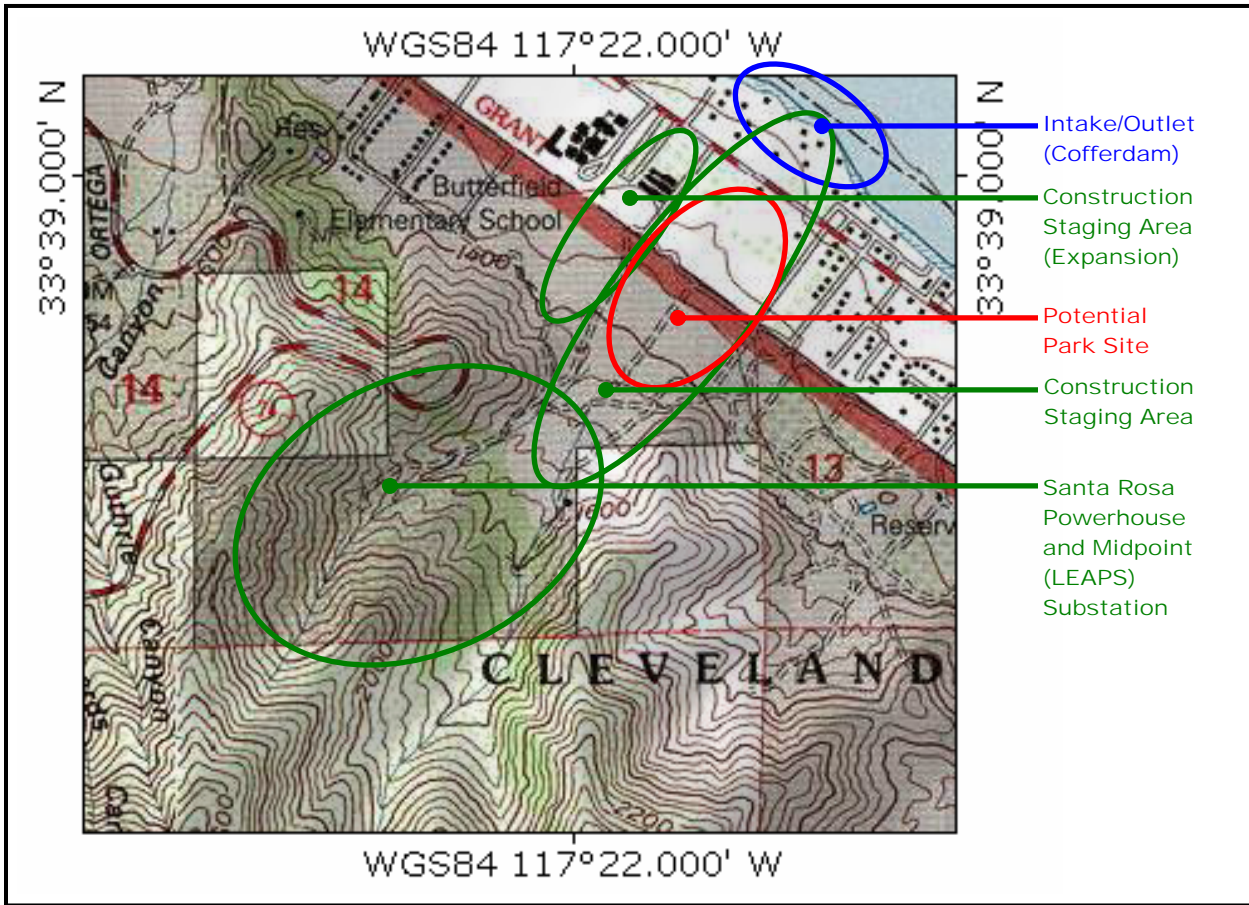
Between the powerhouse and lower reservoir, the inlet/outfall structure and its associated conduit (tailrace) will be located within an unincorporated County area. At the lakeshore, the inlet/outlet and other associated improvements extending into Lake Elsinore (e.g., intake headwall structure, reinforced dredged channel, and boat dock) will be constructed within the corporate boundaries of the City. The proposed powerhouse site is located to the southwest of Butterfield Elementary Visual and Performing Arts Magnet School (16275 Grand Avenue, Lake Elsinore), operated by the Lake Elsinore Unified School District (LEUSD), and the Ortega Trails Youth Center, operated by Ortega Trails Youth Center, Inc. on the grounds of the elementary school.

In addition, the site is located to the east of the Santa Rosa Mountain Villas (33071-33091 Santa Rosa, Lake Elsinore) and the Copper Canyon Villas (16341-16347 Grand Avenue, Lake Elsinore), both multi-family attached housing projects. Existing single-family residential uses presently exist to the north of Grand Avenue and to the east of the proposed Santa Rosa powerhouse site.

The proposed powerhouse will be located about 340-feet underground at 1,050 AMSL, about 5,000 feet from Lake Elsinore. The powerhouse will contain two reversible Francis-type pump-turbine/motor generators, nominally rated at 300-MW each when pumping, and an additional two empty turbine bays. The powerhouse's equipment characteristics are outlined in [Table 3-6](#) (LEAPS Project - Powerhouse Equipment Characteristics).

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<sup>59</sup>/ Tentatively identified as Riverside County Assessor's Parcel Map Nos. 38614004, 386140006, 386140014, 386154001-386154014, 386151001-386151041, 386152001-386152024, 386153001-386153025, and 386154015-386154022.



**Figure 3-33**  
**SANTA ROSA**  
**POWERHOUSE**  
**AND MIDPOINT**  
**(LEAPS)**  
**SUBSTATION**  
**SITES**  
 Source: The Nevada Hydro Company

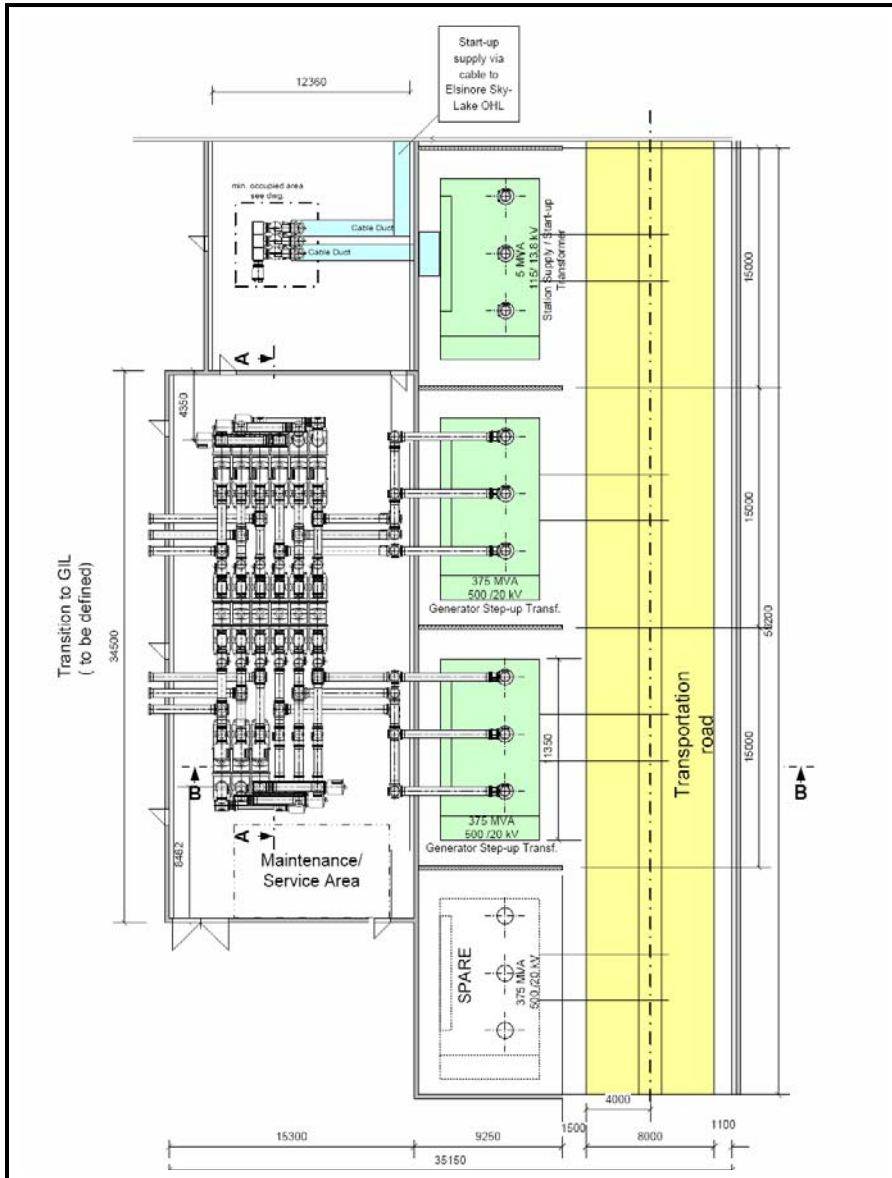
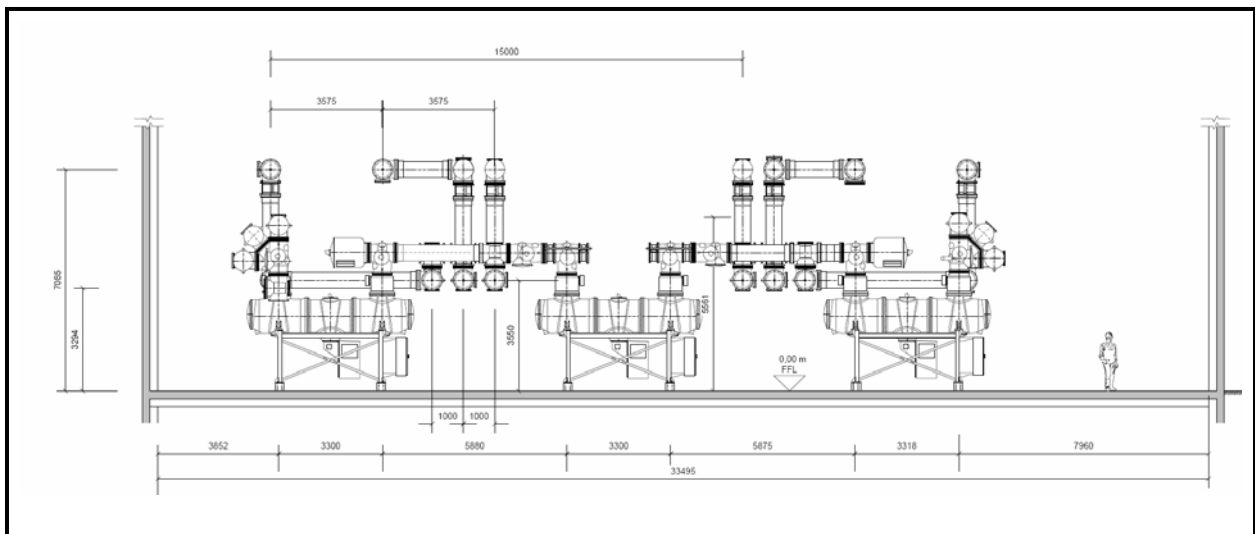


Figure 3-34  
**MIDPOINT (LEAPS)  
 SUBSTATION  
 CONCEPTUAL  
 SITE PLAN**  
 Source: Siemens Power  
 Transmission & Distribution

Figure 3-35 (1 of 3)  
**MIDPOINT (LEAPS)  
 SUBSTATION  
 CONCEPTUAL  
 ELEVATION  
 DRAWINGS  
 (SECTION A-A')**  
 Source: Siemens Power  
 Transmission & Distribution



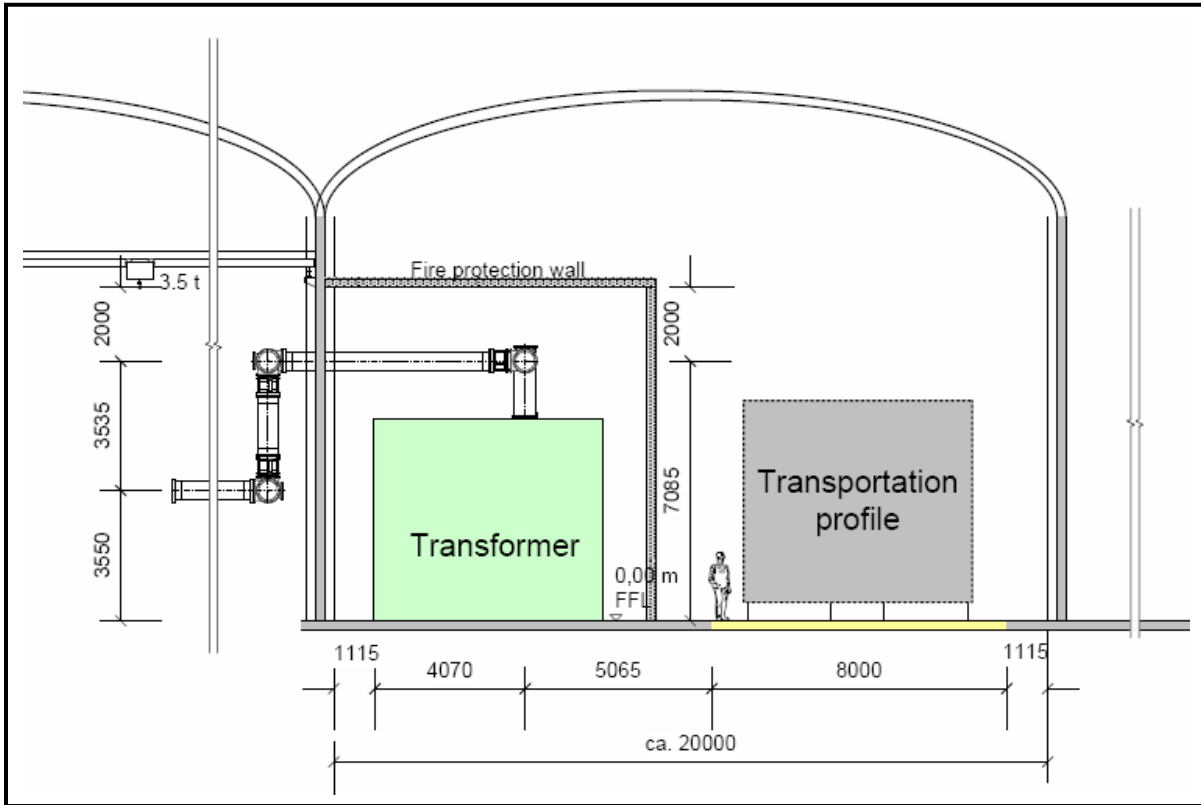
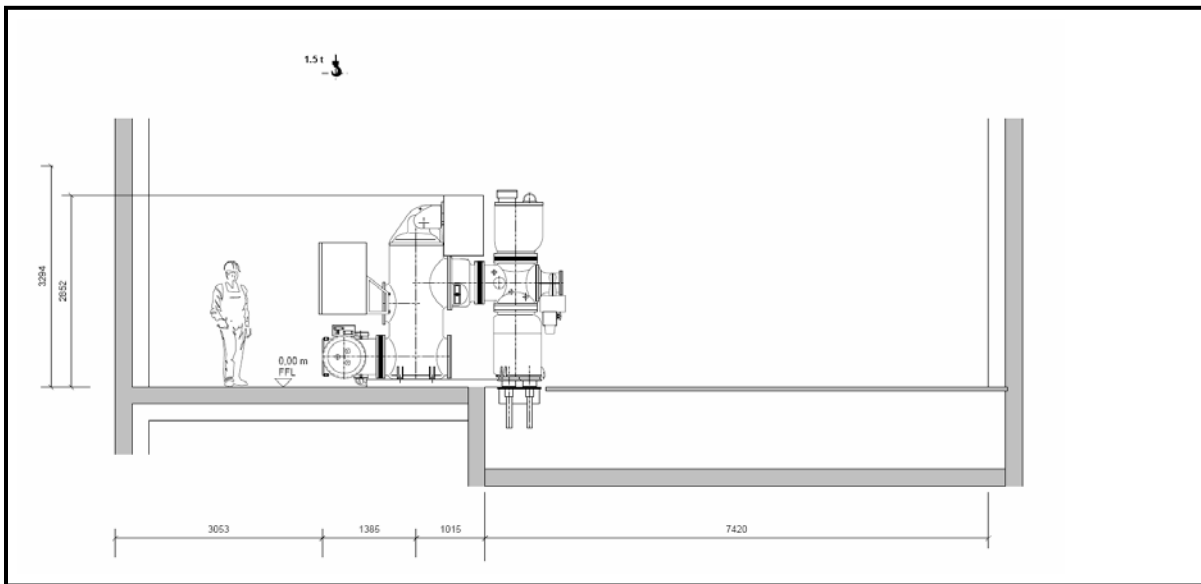


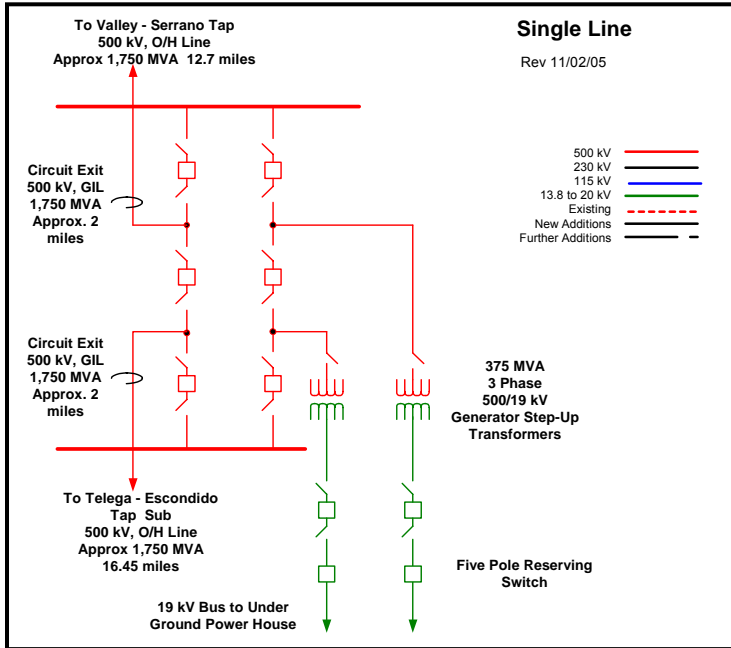
Figure 3-35 (2 of 3)  
**MIDPOINT (LEAPS) SUBSTATION  
 CONCEPTUAL ELEVATION DRAWINGS  
 (SECTION B-B')**  
 Source: Siemens Power Transmission & Distribution

Figure 3-35 (3 of 3)  
**MIDPOINT (LEAPS) SUBSTATION  
 CONCEPTUAL ELEVATION DRAWINGS  
 (SECTION C-C')**  
 Source: Siemens Power Transmission & Distribution





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**Figure 3-36**  
**MIDPOINT (LEAPS) SUBSTATION**  
**SINGLE-LINE DIAGRAM**  
 Source: Siemens Power Transmission & Distribution

Rated voltage	550 kV
Rated frequency	60 Hz
Rated lightning impulse withstand voltage	1550 kV
Rated power frequency withstand voltage (1 min)	740 kV
Rated current busbar	4000 A
Rated current feeder	4000 A
Rated short - time withstand current	63 kA / 1s
Rated short - circuit breaking current	63 kA
Indoor ambient temperature	-5°C / +40°C
Outdoor ambient temperature	-5°C / +49°C

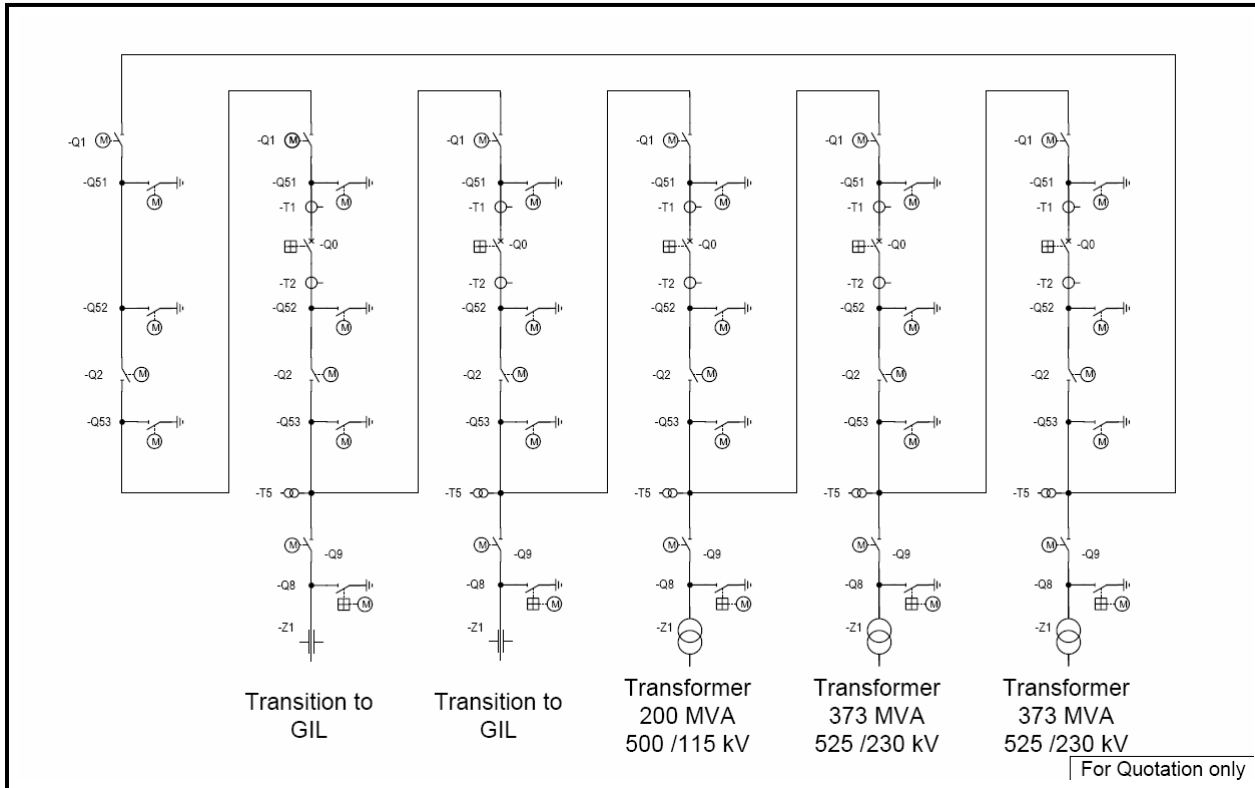


Table 3-6  
**LEAPS PROJECT**  
**POWERHOUSE EQUIPMENT CHARACTERISTICS**

<b>General</b>	
Total Plant Capacity (Generation)	502.5 MW
Total Plant Capacity (Pumping)	612.8 MW
Approximate Maximum Gross Head	1,590 feet
Approximate Minimum Gross Head	1,460 feet
Number of Units	2
Overall Efficiency @ 500 MW/500 kV	82.2%
<b>Generating</b>	
Generator Capacity	251.25 MW, 279.17 MVA
Generator Efficiency	98.5%
Pump/Turbine Efficiency	93.23%
Turbine Speed	450 rpm
Hours of Operation	12 hours
<b>Pumping</b>	
Motor Capacity	306.4 MW, 349.4 MVA
Generation Efficiency	98.7%
Pump/Turbine Efficiency	93.17%
Hours of Operation	12 hours

Source: The Nevada Hydro Company, Inc.

A modern system of flow measurements through the pump-turbine will be provided. Each pump-turbine will have adjustable wicket gates controlled by an electronic governor through oil-operated servomotors. Consistent with all Francis-type pump-turbines, the units will operate at relatively constant flow rate while pumping. The pump-turbine runner and wicket gate, as well as other components that may also be susceptible to cavitation, will be of solid stainless steel construction or stainless-steel clad, to prevent cavitation damage. The pump-turbine distributor will be set approximately 195 feet below minimum tail-water level to minimize cavitation damage.

A service bay will be provided at one end of the powerhouse. Two sub-horizontal gently inclined access tunnels will access the headrace tunnel, service bay, transformer gallery, and pumping/generating units from the northeast. The purpose of the tunnels is to provide tunnel and powerhouse cavern access during construction, ventilation, and emergency egress during and after construction. The tunnels will be approximately 30 feet in diameter and will be concrete lined. A service building will be constructed near one of the tunnel portals to provide for the equipment storage and accommodate offices and other uses.

Powerhouse equipment will include an over-head bridge crane supported on high-level beams along the length of the powerhouse. The crane will be sized to handle the heaviest lift during equipment installation and maintenance. The powerhouse cavern housing the pumping/generating units and transformer gallery will be an underground facility approximately 375-feet long, 220-feet wide, and 150-feet high.

The main powerhouse cavity will contain local operating and control equipment for each unit. The powerhouse roof will be supported by rock bolts or rock anchors with wire mesh and shotcrete for support as needed. The powerhouse will be wide enough to accommodate spherical turbine valves to control flow into the units. The valves will be placed immediately upstream of the spiral case so that they can be handled by the main powerhouse crane.

Galleries for electrical and mechanical services will be provided on the upstream and downstream sides of the powerhouse, respectively. Discharge from the units in the generating mode will pass through the draft tubes into the tailrace tunnel. This tunnel will be D-shaped and concrete-lined. The transformer gallery will be located within the powerhouse. The individual transformers will be enclosed by concrete firewalls. These walls, together with the necessary concrete sections and cable trench, are the only structural work required to contain the transformers. The transformers will be connected to the motor-generators by means of isolated-phase bus through a separate tunnel to each unit.

The power plant's mechanical systems will be designed to maintain suitable and safe conditions for operators and maintenance personnel. Ventilation air in and out of the two powerhouse access tunnels will be provided. The major heat-producing units, such as transformers and generators, will be cooled by oil-water and air-water heat-exchange systems. A system of ducting, bulkhead controls, and circulating fans will be installed to ensure equitable distribution of air throughout the facility and prevent the accumulation of carbon monoxide (CO) and other gases. Fire doors, incorporating air locks, will be provided at key locations. Fire prevention systems in the underground plant will be conventional deluge-type for the major items of equipment. Tied to these systems will be a system of isolating dampers and bulkheads connected to the ventilation system for control of smoke and fumes. In accordance with fire and building code standards, a high-pressure fire system will supply water to fire hose stations located throughout the facility. Unit dewatering will employ high-capacity pumps in pressurized pump pits.

Power generated in the underground powerhouse will be transformed to 500-kV and transmitted to the surface by way of gas-insulated lines (GIL). A new substation, identified as the Midpoint (LEAPS) substation, will be constructed as an underground facility and integrated into the design of the Santa Rosa powerhouse. Two 2,000-kW emergency generators will run an air compressor and essential cooling pumps for the powerhouse complex.<sup>60</sup>

Although computer and programmable logic control (PLC) systems improve plant operation by providing greater flexibility in control, alarming, and sequence of events recoding, the essential emergency shutdown controls shall remain hardwired. This will guarantee that a safe and orderly shutdown of the plant can be accomplished in an emergency situation during which the computer and PLC systems have failed.<sup>61</sup>

- **Tailrace structure.** The intake/outlet (tailrace) structure for the lower reservoir will be located near the southwest shoreline of Lake Elsinore. The structure will extend from

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<sup>60/</sup> The standby generators will be tested monthly for 30 minutes, representing approximately six hours per use of use. Maintenance activities will add approximately twelve hours per year of additional use. Except in the case of an emergency, this would result in an expected annual usage of about 18 hours per generator.

<sup>61/</sup> Federal Energy Regulatory Commission, Over Pumping Protection Systems Recommended Design Criteria, November 2006, p. 12.



the portal of the tailrace tunnel to a headwall structure fitted with trashracks at the shoreline. The structure will be designed to provide a maximum discharge velocity of 1.8 feet per second (fps) at the trashracks during generation and a maximum intake velocity of 1.4 fps at the trashracks during pumping. Stoplogs will be provided at the portal so that the tailrace tunnel can be isolated from Lake Elsinore. Preliminary intake design specifications are presented in Table 3-7 (LEAPS Project - Preliminary Intake Design Hydraulic Specifications).

Table 3-7  
**LEAPS PROJECT**  
**PRELIMINARY INTAKE DESIGN HYDRAULIC SPECIFICATIONS<sup>1</sup>**

Feature	Elevation	Description
Elevation of Intake Channel Rip Rap and Slit Trap	1220	Intake channel rip rap
Bottom Elevation of Intake Structure Gates	1223	Empty lake elevation
Proposed Low Operation Level	1238	Proposed low-operating level
Proposed Nominal Operation Level	1245	Proposed nominal operation level
Maximum Lake Level Dec-March	1247	Maximum lake level (Dec-March)
Maximum Lake Level	1249	Maximum lake level
Outlet Sill	1255	Outlet sill
100-Year Flood Elevation	1263.3	100-year flood elevation
Upper Elevation of Intake Structure Gates	1265	Maximum intake elevation
Proposed Height of Intake Design Opening	42 feet	Intake height
Tailrace Tunnels Size for Each Unit	25 feet x 25 feet	Tairace tunnel
Max. Water Flow During Generation for Each	1,993.0 cfs	Maximum outflow
Max. Water Flow During Pumping for Each Unit	2,036.5 cfs	Maximum inflow
Notes:		
1. All engineering specifications remain subject to change and refinement.		

Source: The Nevada Hydro Company, Inc.

A temporary cofferdam would be constructed from the proposed shoreline, extending approximately 400 feet into Lake Elsinore. This area would be de-watered and the lake bottom would be excavated to a final elevation of approximately 1200-feet AMSL near the intake/outlet structure. The cofferdam would be removed following completion of the structure’s construction, resulting in a facility with only minimal intrusion into the lake.

The lower reservoir outlet plan and profile is illustrated in Figure 3-32 (Lake Elsinore Advanced Pumped Storage Project – Conceptual Drawings). As shown, a rip-rap lined, reinforced dredged channel will be installed to reduce velocities, provide a natural silt trap, and shape a velocity profile into the intake screens, structure, and gates. Following construction, the cofferdam will be removed. A paved maintenance road would provide shoreline access and a boat dock installed to allow for lake access during facility maintenance. The area will be equipped with security cables, warning signs, warning buoys, security cameras, and navigational warning lights.

The tailrace structure for the upper reservoir will consist of a gated inlet structure where the water flows into a horizontal or sloping conduit. Radial gates, slide gates, or an emergency bulkhead will be installed to shut off water flow from the upper reservoir in the event of an emergency and for inspection and repair of the high-head conduit. The

intake/outlet structures will be equipped with trashracks to prevent large debris from entering the conduit system. The structure will be located at sufficient depth below minimum operating level to prevent air entrainment. The intake/outlet structure will be reinforced concrete (RCC) with automated trashracks and stoplogs and will incorporate fish excluders. Fish excluders can be changed seasonally but not automated.

- **Headrace Tunnel.** Water will be transferred between the upper reservoir and the powerhouse through a single approximately 25-foot diameter, primarily concrete-lined tunnel. The inlet elevation at the proposed upper reservoir will be about 2600-feet AMSL.

To minimize surface area disturbance and reduce the potential for a tunnel rupture that could produce surficial discharge, using primarily a tunnel-boring machine (TBM) or conventional hard-rock mining operation will be used to excavate the headrace tunnel. It is anticipated that the high-head conductor will be excavated into competent granitic bedrock. In general, the pipeline alignments will seek to follow the most direct route between the upper reservoir and the powerhouse, taking into consideration the area's topography and subsurface geotechnical features.

A vertical tunnel will descend from a location northeast of the upper reservoir. The vertical tunnel will connect to a lower sub-horizontal tunnel that would have a gradient of approximately five percent downward toward the powerhouse. The horizontal tunnel will be unlined or concrete-lined where there is adequate rock cover over the tunnel and steel lined where there is inadequate rock cover. The horizontal tunnel would then split into a steel-lined manifold immediately upstream of the powerhouse, directing the water flows to the turbines in the powerhouse.

A double-seated spherical valve will be provided at the inlet for each pump-turbine spiral case. The valves will be used to isolate the pump-turbine from the penstock for inspection and maintenance and to close in an emergency. Draft tube bulkhead gates will be provided to be used in conjunction with the penstock valves for dewatering the pump-turbine water passages.

- **Temporary construction sites.** In addition to those associated with the TE/VS Interconnect project, the construction of the LEAPS project will necessitate the use of a number of additional temporary construction marshalling, staging, laydown, and/or stockpiling sites. The delineation of, the operations performed within, and the control of spoils from those areas shall be as generally described for the TE/VS Interconnect project and are not repeated herein.

As illustrated, in part, in [Figure 3-32](#) (Lake Elsinore Advanced Pumped Storage Project – Conceptual Drawings), other construction marshalling, staging, laydown, and material and soil stockpile areas associated with the LEAPS project are described below.

- ◇ **Santa Rosa powerhouse and Midpoint substation.** As illustrated in [Figure 3-33](#) (Santa Rosa Powerhouse and Midpoint [LEAPS] Substation Sites), the proposed powerhouse's and substation's construction marshalling areas include both the area situated southwest of Grand Avenue and the area extending northeasterly between Grand Avenue and Lake Elsinore. As illustrated, the construction staging area could be expanded westward to include both the Santa Rosa Mountain Villas (33071-33091 Santa Rosa, Lake Elsinore) and additional vacant property located to the northeast and to the southwest of those existing

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multi-family housing units. If so acquired, during construction, the Santa Rosa Mountain Villas could be used as temporary employee housing and/or converted to related office use.

- ◇ **Decker Canyon reservoir.** North of Main Divide Truck Trail, in the area generally illustrated in [Figure 3-37](#) (Upper Reservoir and Tunnel Construction Staging Areas), the Applicant proposes to create and utilize multiple sites for the placement, stockpiling, storage, and staging of construction equipment, trailers, materials, and manpower associated with the construction of the proposed new upper reservoir and penstocks.
- ◇ **Temporary rock-filled cofferdam.** Construction activities will temporarily extend into the lake, especially with regards to those activities associated with the construction of the cofferdam, tailrace structure, reinforced dredged outlet channel, and boat dock. Except where activities are occurring closer to the lake, construction staging and stockpile areas will be setback a minimum of 150 feet from the OHWM of Lake Elsinore.

A temporary watertight enclosure will be constructed extending from the edge of the shoreline in a northeasterly direction to allow for the construction of the proposed intake/outlet structure and reinforced channel. The area will be pumped dry to expose the lake bottom. Following construction, the cofferdam will be removed and the shoreline recontoured to mate to the intake structure.

- **Material borrow sites.** Development plans for the proposed new upper reservoir include an impermeable dual liner (i.e., clay and double geomembrane) system and, if required, a central impermeable core of the embankment structure. A ready source of low-permeability clay exists in the Alberhill area (Pacific Clay Products, Inc., 14741 Lake Street, Lake Elsinore), located about ten miles northwest of the LEAPS project's reservoir site. Alternatively, a low-permeability material could be manufactured on or near the proposed upper reservoir site by mixing imported bentonite with on-site soils.

Should additional decomposed granitic (DG) soils material be required for the construction of the upper reservoir's impoundment structure, subject to Forest Service authorization, suitable materials could be obtained at the upper reservoir construction staging areas identified in [Figure 3-37](#) (Upper Reservoir and Tunnel Construction Staging Areas). Grading activities at those locations would subject to Forest Service authorization and would not result in the creation of sites unsuitable for subsequent recreational or other authorized reuse and/or revegetation.

- **Erosion and sediment controls.** Erosion and sediment control plans and measures will be as generally described for the TE/VS Interconnect project. As with the TE/VS Interconnect project, prior to the commencement of grading operations, the project will obtain coverage under the General Permit, including the development of a SWPPP.

With regards to underground excavation associated with LEAPS project facilities, the products from the underground excavation will be comprised of shot rock from the drill and blast operations and rock tailing and slurry from the excavation. Rock sizes will vary from large boulders down through pebbles and dust. The materials produced underground will be brought to the surface and either disposed off the site or stockpiled for later use in the upper reservoir's construction, for construction of the proposed

recreational area, and for construction support in the headworks area. Secondary products generated during drilling (e.g., drilling fluids, mud, and slurries) will be kept to the minimum possible. A recirculating system will be used and the material allowed to settle out in tanks or temporary settlement ponds and tested to ensure compliance with water quality standards prior to discharge to surface waters or off-site disposal. Drilling fluid will be produced by the use of water from portable tanks.

The upper reservoir embankment will be constructed on compacted fill founded on bedrock. Materials for the embankment will be obtained from the reservoir area and from materials excavated from the underground structures. Silt fences and other Best Management Practice (BMP) controls will be installed prior to ground-breaking activities and maintained throughout the construction process by the contractor.

Prior to the placement of the rockfill, silt screens will be placed around the cofferdam to prevent movement of silt and sediment into Lake Elsinore. Silt screens will also be in place when the cofferdam is removed. Under the General Permit, the Applicant will be required to monitor for sediment in storm water discharging directly to Lake Elsinore.

### **3.2.3 LEAPS Project Related Facilities (LEAPS Project Only)**

The following facilities are associated with the LEAPS project only and do not constitute elements of the TE/VS Interconnect project.

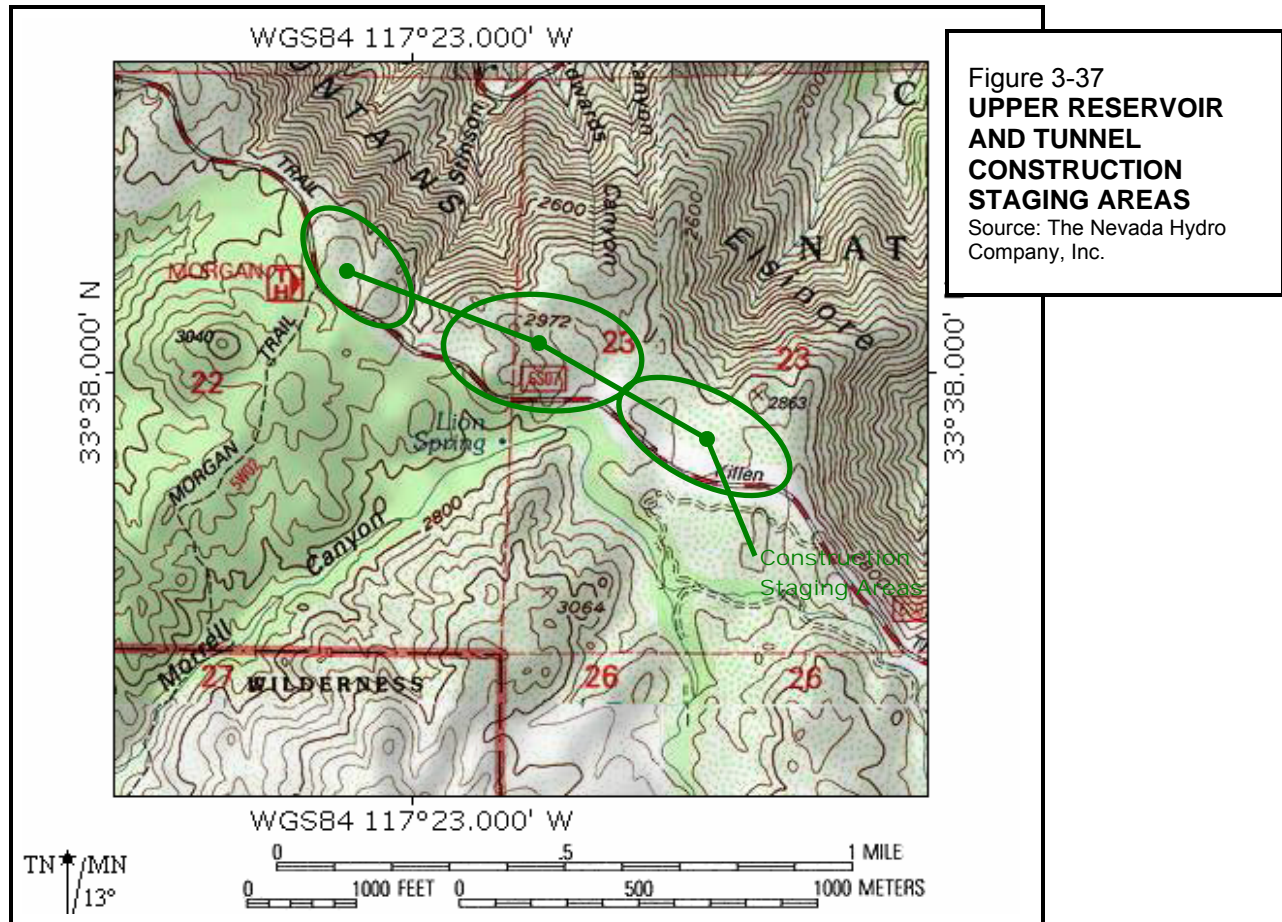
- **Recreational facilities.** The Applicant has presented a recreational plan to FERC as part of the Applicant's hydropower licensing project.<sup>62</sup> Components of that plan are outlined below.
  - ◇ **Day-use area.** As indicated in the USFS' 4(e) conditions (Condition No. 27), the Forest Service has requested that the Applicant develop a compensating recreational plan for NFS lands that could include the construction of a day-use recreational facility as part of the LEAPS project.<sup>63</sup> Although neither the location nor the nature of that use or compensating facilities have been determined by the Forest Service, the facility will likely be located in the area generally illustrated in [Figure 3-37](#) (Upper Reservoir and Tunnel Construction Staging Areas). As specified, within one year of the license's issuance, the licensee shall file with FERC a "recreation facility development plan" for a recreation facility or alternative use approved by the Forest Service.

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<sup>62/</sup> FERC's mandate for providing recreational resources at hydropower projects is defined, in part, in FERC Order 313 (30 FR 16197), which states: "The Commission believes that irrespective of the requirements of their licenses, licensees whose projects comprise land and water resources with outdoor recreational potential have a responsibility for the development of those resources in accordance with area needs, to the extent that such development is not inconsistent with the primary purpose of the project. All licensees will therefore be encouraged to submit for Commission approval and incorporation into their licenses an appropriate recreational plan."

<sup>63/</sup> As specified in Forest Service Handbook (FSH) 2709.15, the Forest Service shall "[c]ooperate with the applicant or licensee in the development of project recreation plans when recreation facilities are necessary. The licensee is responsible for construction, operation, maintenance, and replacement of project recreation facilities. Where it is in the Government's interest, the Forest Service may perform the operation and maintenance of facilities on National Forest System land with funds provided by the licensee in accordance with a collection agreement" (Section 23.4).

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For the purpose of CEQA compliance, it is assumed that the Applicant will design and development, for conveyance to the Forest Service, a minimum 10-acre day-use facility. Assumed uses include a Type 1 helitanker helispot,<sup>64</sup> fire equipment and personnel staging area, firefighter memorial, interpretive center or kiosk, scenic overlook, picnic area, comfort facilities, and/or hang glider launching site (including a windsock and anemometer). Recreational facilities operated by the Applicant on NFS lands, if any, shall be in compliance with FSM 2340.

- ◇ **Neighborhood park.** As stipulated in PM&E Measure 19, the Applicant will develop and implement a recreation plan that provides for transferring of land off NFS lands to a local entity and promotes the development of recreational facilities at the powerhouse location and operation and maintenance (O&M) funding sufficient to operate the facilities.

Unless otherwise precluded under the federal hydropower license<sup>65</sup> and unless an alternative action is either required by the permitting agencies or undertaken by the Applicant (e.g., payment of in-lieu fees<sup>66</sup>), as presently envisioned, the Applicant will improve and dedicate to the County of Riverside or to the City of Lake Elsinore, subject to the jurisdiction authority of the receiving agency, a minimum 5-acre neighborhood park. As proposed, those facilities would be constructed in the area illustrated in [Figure 3-33](#) (Santa Rosa Powerhouse and Midpoint [LEAPS] Substation Sites). As presently envisioned, park plans would include a multi-purpose field, a tot lot, comfort facilities, on-site parking, and include a botanical garden or landscape plan incorporating indigenous, drought-tolerate plants. No high-intensity sports lighting is proposed.

Alternatively, the Applicant is currently in discussions with the City of Lake Elsinore to develop new and/or improve existing water-based recreational facilities in and around Lake Elsinore. In addition, the “Final Fisheries Management Plan for Lake Elsinore, Riverside County, California” identifies specific “fisheries enhancement measures” that could be undertaken in-lieu of

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<sup>64/</sup> In conformance with the recommendations presented “Interagency Helicopter Operations Guide, NFES 1885” (Interagency Aviation Management Council, March 2006) or such other standards as may be identified by the Forest Service.

<sup>65/</sup> As indicated in FERC: “Given that a project is primarily a water-based facility, it may not be hard to conclude that construction of a boat ramp, a fishing pier, or a hiking trail along the reservoir perimeter could be an appropriate environmental measure that serves a project purpose, if the need for that facility is established. These facilities would enable the public to better use the project lands and waters. It may be more difficult to justify recreation that is more remote from the project site (as in a campground located 20 miles away from any project works). Similarly, it may be hard to draw a public interest connection between a project and a recreation feature that does not appear to be tied to the nature of the project. For example, a community near a project might consider itself to be in need of a public auditorium. It would be difficult to justify inclusion of such a requirement in a license, unless the parties could demonstrate, not just why the proposed measure is generally worthwhile, but, more specifically, how it is linked to the effects and purposes of the project” (71 FR 56523, September 17, 2006).

<sup>66/</sup> Throughout the licensing process, the Applicant has included new neighborhood park facilities, as an adaptive reuse of a portion of the proposed powerhouse construction site, as a key component of the project’s recreational element. Despite extensive consultation, neither the County of Riverside nor the City of Lake Elsinore have expressed support for acceptance of a new neighborhood park without the concurrent commitment for long-term maintenance. Similarly, the only comments received from other stakeholders relative to the Applicant’s neighborhood park proposal were presented in opposition to that proposal. Although the park proposal has been retained herein, absent agency and/or neighborhood support for such a facility and absent a federal nexus, unless otherwise imposed by FERC under the federal hydropower license, the Applicant reserves the option of eliminating the construction of a neighborhood park and the dedication of that facility to the County and/or to the City. To the extent that Quimby Act fees are required by the permitting agency, the Applicant reserves the right to pay applicable fees in-lieu of any real property dedication and improvement.

dedication and improvement of the proposed neighborhood park/botanical garden. The Applicant, therefore, reserves the right, subject to further discussions with applicable stakeholders, to modify the LEAPS project's proposed recreational plans undertake other actions, at a comparable financial cost to the Applicant, with regards to alternative recreational facilities, uses, and/or amenities within and adjacent to Lake Elsinore.

Within three years of commencement of the LEAPS project's operations, if required, park improvements or such alternative actions as may be acceptable to FERC will be implemented by the Applicant. If, at the time of FERC's licensing, neither the County of Riverside nor the City of Lake Elsinore agree to accept the proposed park or park improvements, inclusive of an agency commitment for on-going maintenance obligations, the Applicant reserves the right to rescind its offer for real property dedication and/or improvement and pay in-lieu park (Quimby Act) fees in accordance with the applicable agency's park ordinance.

With regards to any of the recreational facilities that may be associated with the LEAPS project, the Applicant will retain an easement or other access or other rights for the operation and maintenance of the hydropower project and/or any of the facilities associated therewith. No new or modified recreational facilities or improvements are included as part of the TE/VS Interconnect project.

- **Water treatment facilities and wellhead treatment.** Phosphorous can be removed from recycled water by the addition of a chemical to form an insoluble precipitate, with the subsequent removal of the precipitate by physical separation processes, such as sedimentation or filtration. The chemicals commonly used are metal salts or lime. The primary metal salts used are aluminum-based salts (most commonly aluminum sulfate or alum) and iron-based salts (ferric chloride, ferric sulfate, ferrous chloride, and ferrous sulfate). If required to treat additional sources of imported water, including water from the Eastern Municipal Water District (EMWD), an approximately 10-acre alum-treatment facility would be constructed in the vicinity of the San Jacinto River channel. If constructed, alum treatment of approximately 175 AF per day of EVMWD and/or EMWD reclaimed water, up to a maximum of 16,000 AFY, would be provided to meet a total phosphorus (TP) concentration of 0.5 mg/L in effluent.
- **Groundwater wells.** Because of the isolated nature of a number of facility sites, the Applicant may elect to drill and operate one or more groundwater wells in order to provide construction and operational water. In compliance with California Department of Water Resource requirements<sup>67</sup> and California Well Standards,<sup>68</sup> the water supply well will be drilled parties possessing C-57 water well contractor's licenses, using a reverse circulation hydraulic rotary drilling rig. Once operational, water quality samples would be collected for full Title 22 analysis, as specified by the California Administrative Code. Additional wells may be required for dewatering excavation during construction and/or stabilizing hillsides or earth embankments. All water from construction dewatering will be monitored and treated, as appropriate, in compliance with all site storm water or construction general discharge permits prior to discharge in compliance with applicable regulations.

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<sup>67</sup>/ California Department of Water Resources, California Laws for Water Wells, Monitoring Wells, Cathodic Protection Wells, Geothermal Heat Exchange Wells, March 2003.

<sup>68</sup>/ California Department of Water Resources, California Well Standards, Bulletin 74-90, June 1991.

- **Other facilities.** As indicated in the EVMWD’s “Distribution System Master Plan,” beyond the 0.1-million gallon (mg) capacity of the existing Skymeadows Reservoir, an additional 0.5 mg of additional potable water storage is recommended for the area of Rancho Capistrano (Morrell Potero), identified as Pressure Zone 3300 (Skymeadows), in order to adequately address the operational, fire, and emergency storage needs of that area.<sup>69</sup> At the base of the Elsinore Mountains, in proximity to Grand Avenue, other identified system improvements include: (1) a new 12-inch suction pipeline extending southward from Grand Avenue to the Adelpha Pump Station; and (2) replace the existing 0.2-mg Adelpha Reservoir with a new 0.6-mg reservoir.<sup>70</sup>

The new 12-inch pipeline and expanded capacity of the Adelpha Reservoir and the Skymeadows Reservoir are not related to or required for the development of the LEAPS and/or TE/VS Interconnect projects. Because those facilities are identified in the EVMWD’s DSMP and “Program Environmental Impact Report – Water Distribution System Master Plan and Wastewater Master Plan,” because extensive underground excavation will be required for the construction of the LEAPS project, because there is a substantial cost savings to the EVMWD and others if specified DSMP improvements could be coordinated and conducted concurrently with the development of the LEAPS project, predicated upon the EVMWD’s completing all requisite engineering studies within a sufficient time period to allow for incorporation into the design of the proposed hydropower project and the acquisition of any real property interests as may be required for the LEAPS project’s implementation, as an accommodation to the EVMWD, to the extent authorized by FERC, certain DSMP-identified improvements may be undertaken at the same time that the LEAPS project is being constructed.

Except as may be otherwise modified by agreement between the parties, all cost associated with those improvements, inclusive of all engineering plans and specification, will be borne exclusively by the EVMWD and are neither LEAPS project costs nor the responsibility of TNHC. In the event that the District elects not to fully fund all costs associated with those improvements or in the event that the requisite engineering analysis to be performed by the EVMWD is not timely completed, TNHC is not then obligated to incorporate these improvements in the LEAPS project’s development plan.

### **3.2.4 LEAPS Project Related Activities (LEAPS Project Only)**

Part I of the FPA directs FERC, when issuing a license for a hydroelectric project, to require the licensee to undertake appropriate measures on behalf of both developmental and non-developmental public interest uses of the waterway, including fish, wildlife, and recreation. In addition to such other requirements as may be established in or imposed by FERC’s licensing articles, the USFS’ Section 4(e) and environmental protection plan (EPP) conditions, and the Applicant’s environmental protection, mitigation, and enhancement (PM&E) measures, the Applicant will undertake the following activities:

- **Shoreline buffer zone.** While acknowledging that the operation of the LEAPS project will result in vertical variations in the elevation of water levels in Lake Elsinore, thus producing horizontal variations to the liquid edge of the shoreline, as non-licensee

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<sup>69/</sup> Montgomery Watson Harza, Final Report: Distribution System Master Plan, Elsinore Valley Municipal Water District, May 2002, Table 7-4, p. 7-6; Figure 7-5.

<sup>70/</sup> *Ibid.*, Figure 7-7.

owned lands, the EVMWD lacks jurisdictional authority to establish a shoreline buffer zone or other land use provisions encompassing the lands which might be so effected.<sup>71</sup> Working in cooperation with the City of Lake Elsinore and the County of Riverside, unless suitable provisions already exist (e.g., limitations on development within the 100-year floodplain), the Applicant will request that the appropriate land-use entity establish a shoreline buffer zone around Lake Elsinore, between elevations 1240 and 1255-foot AMSL, in order to promote public recreational development and use and so as not to impede the safe and efficient operation of the proposed LEAPS project. As proposed, the shoreline buffer zone would extend above the normal maximum surface elevation of the LEAPS project reservoir (1240 to 1255-foot AMSL) to allow public access to LEAPS project lands and waters and to protect the scenic, public recreational, cultural, and other environmental values of the reservoir's shoreline.

It is the Applicant's intent that the shoreline buffer zone be included within the LEAPS project's boundaries. It is not, however, the Applicant's intent to unreasonably restrict or adversely affect the rights, if any, of individual property owners to reasonably use their lands for productive purposes or to predicate a taking of private lands.

As part of the LEAPS project's recreational component or as an alternative thereto, the Applicant, in coordination with the City, may seek to acquire lands or easements within the shoreline buffer zone for preservation, recreation, and/or access purposes.

- **Striped bass and white bass hybrids stocking program.** As described in the "Fisheries Management Plan for Lake Elsinore, Riverside County, California," as part of the LEAPS project, the Applicant will conduct an annual or biannual fish stocking program, equivalent to 6,000 yearling nursery-raised fish,<sup>72</sup> in compensation for any resulting fish entrainment, to further multi-agency efforts to reduce the population of threadfin shad and carp, and to enhance and help maintain the lake's sports fishery.

The Applicant or other parties may elect to undertake additional related actions as may be reasonable and appropriate for the approval, construction, operation, and maintenance of the proposed projects, including such measures as may be imposed as permit conditions by any governmental agency with jurisdiction over and authority to condition the proposed projects.

### **3.3 Licensee, Owner, and Operator**

Subject to FERC's and the USFS' authorizing actions, it is TNHC's present intent that it will be the licensee/holder of the CPCN and the owner and operator of both the proposed TE/VS Interconnect and for the LEAPS projects.

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<sup>71/</sup> As indicated by FERC: "The Federal Energy Regulatory Commission is responsible for issuing licenses for the construction, operation, and maintenance of non-federal hydropower projects. Licensees are responsible for operating and maintaining these projects in accordance with license requirements and project purposes. Consistent with these license responsibilities, a licensee may, with Commission approval, authorize specific uses and occupancies of the project reservoir shoreline that are not related to hydroelectric power production or other project purposes (non-project uses). . .Licensees have a responsibility to ensure that shoreline development activities that occur within project boundaries are consistent with project license requirements, purposes, and operations" (Source: Federal Energy Regulatory Commission, Guidance for Shoreline Management Planning at Hydropower Projects, April 2001, pp. i-ii).

<sup>72/</sup> Lake Elsinore and San Jacinto Watershed Authority (EIP Associates), Final Fisheries Management Plan for Lake Elsinore, Riverside County, California, August 2005, Appendix E, p. E-12.

### 3.4 Tentative Schedule

As indicated in Table 3-8 (TE/VS Interconnect Project Schedule), which is equally applicable to the transmission components of the LEAPS project, the TE/VS Interconnect project will be constructed and commence operation in December 2009. Because of the more extensive engineering and longer equipment lead times, the LEAPS project is not scheduled to commence operation until 2012.

Under the FPA, a hydropower licensee is allowed two years from the date of issuance of the hydropower license to commence construction and two more years to complete construction. The periods for commencement of construction may be extended once, but not longer than two years, and the period for the completion of construction, carried on in good faith and with reasonable diligence, may be extended by FERC when not incompatible with the public interest.<sup>73</sup> Since LEAPS project construction is projected to take up to four years to complete, if required, the Applicants would seek a construction-related extension from FERC.

### 3.5 Discretionary Permits, Approvals, and Consultation Requirements

Those federal, State, and local permits and approvals that are or that may be associated with and/or required for the effectuation of one or both energy projects are listed in Table 3-9 (Discretionary Permits, Approvals, and Consultation).<sup>74</sup> Some level of consultation has or will occur with each of the identified agencies. Although not explicitly identified, mitigation, fee, or other similar agreements may be required with certain agencies. The sequence in which the agencies are presented does not infer any prioritization with regards to those agencies.

If subsequently licensed by FERC and/or by the USFS, the FPA, the EPCRA 2005, and/or other federal provisions (including the Commerce and Supremacy Clauses of the United States Constitution) may preempt the need or obligation for the Applicant to obtain, prepare, process, and receive some or all of the entitlements, permits, and approvals identified herein or otherwise required from State and local agencies. For example, the FPA preempts State law that would otherwise apply to the federal hydropower project, except where the FPA explicitly reserves State authority over a specific issue. Those exemptions include Section 401(a)(1) of the CWA which specifies that FERC may not issue a license for a hydropower project unless the state water quality certifying agency has issued a water quality certification or has waived certification. Section 401(d) of the CWA (33 U.S.C. 1341[d]) provides that State certification shall become a condition of any federal license that is issued.

As applicable, under the provisions of the projects' 401 water quality certification, the proposed projects shall conform to those standards identified in the following permits:

- State Water Resource Control Board's (SWRCB) "National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activities, Order 99-08-DWQ, NPDES No. CAS000001"<sup>75</sup> (General Construction Permit);

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<sup>73/</sup> *Op. Cit.*, Compliance Handbook, Section 4.2.3

<sup>74/</sup> Federal entitlements may be authorized under the provisions of NEPA and based on the information contained in the "Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191D" (FERC/USFS, January 2007).

<sup>75/</sup> State Water Resource Control Board, National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activities, Order 99-08-DWQ, NPDES No. CAS000001, August 19, 1999.

**Talega-Escondido/Valley-Serrano 500-kV Interconnect Project**  
 Lake Elsinore Advanced Pumped Storage Project

**Table 3-8**  
**TE/VS INTERCONNECT PROJECT SCHEDULE**

Task Name	Responsible	Duration	Start	End
<b>LEAPS - Project Stage 1</b>		758 Tage	Do 01.05.08	Mo 28.03.11
FERC Approval	Hydro	0 Tage	Do 01.05.08	Do 01.05.08
USFS Special Use Permit	Hydro	0 Tage	Do 01.05.08	Do 01.05.08
Kick-Off Meeting	Siemens/Hydro	5 Tage	Do 08.05.08	Mi 14.05.08
<b>Engineering &amp; Design - Lee Lake Substation</b>	Siemens/Hydro	233 Tage	Do 15.05.08	Mo 06.04.09
GIS - Primary Design	Siemens	51 Tage	Do 15.05.08	Do 24.07.08
Civil Works	Subcontractor	221 Tage	Mo 02.06.08	Mo 06.04.09
<b>Manufacturing</b>	Siemens	155 Tage	Fr 25.07.08	Do 26.02.09
500kV GIS	Siemens	155 Tage	Fr 25.07.08	Do 26.02.09
<b>Shipment</b>	Siemens	47 Tage	Fr 27.02.09	Mo 04.05.09
500kV GIS	Siemens	47 Tage	Fr 27.02.09	Mo 04.05.09
<b>Site Activities</b>	Siemens	152 Tage	Di 05.05.09	Mi 02.12.09
500kV GIS	Siemens	152 Tage	Di 05.05.09	Mi 02.12.09
<b>Engineering &amp; Design - Camp Pendleton 500kV Substation</b>	Siemens/Hydro	51 Tage	Do 15.05.08	Do 24.07.08
GIS - Primary Design	Siemens	51 Tage	Do 15.05.08	Do 24.07.08
Civil Works	Subcontractor	183 Tage	Mo 02.06.08	Mi 11.02.09
<b>Manufacturing</b>	Siemens	354 Tage	Fr 25.07.08	Mi 02.12.09
500kV GIS	Siemens	155 Tage	Fr 25.07.08	Do 26.02.09
<b>Shipment</b>	Siemens	47 Tage	Fr 27.02.09	Mo 04.05.09
500kV GIS	Siemens	47 Tage	Fr 27.02.09	Mo 04.05.09
<b>Site Activities</b>	Siemens	152 Tage	Di 05.05.09	Mi 02.12.09
500kV GIS	Siemens	152 Tage	Di 05.05.09	Mi 02.12.09
500/230kV Step Down Transformers	Siemens	558 Tage	Do 01.05.08	Mo 21.06.10
<b>Engineering &amp; Design - Camp Pendleton 230kV Substation</b>	Siemens/Hydro	404 Tage	Do 15.05.08	Di 01.12.09
GIS - Primary Design	Siemens	51 Tage	Do 15.05.08	Do 24.07.08
Civil Works	Subcontractor	183 Tage	Mo 02.06.08	Mi 11.02.09
<b>Manufacturing</b>	Siemens	189 Tage	Fr 04.07.08	Mi 25.03.09
230kV GIS	Siemens	189 Tage	Fr 04.07.08	Mi 25.03.09
<b>Shipment</b>	Siemens	47 Tage	Do 26.03.09	Fr 29.05.09
230kV GIS	Siemens	47 Tage	Do 26.03.09	Fr 29.05.09
<b>Site Activities</b>	Siemens	132 Tage	Mo 01.06.09	Di 01.12.09
230kV GIS	Siemens	132 Tage	Mo 01.06.09	Di 01.12.09
230kV Phase shifters	Siemens	758 Tage	Do 01.05.08	Mo 28.03.11
<b>Engineering &amp; Design - 500kV GIL</b>	Siemens/Hydro	426 Tage	Do 15.05.08	Do 31.12.09
GIL - Primary Design	Siemens	51 Tage	Do 15.05.08	Do 24.07.08
Civil Works	Hydro	285 Tage	Fr 25.07.08	Do 27.08.09
<b>Manufacturing</b>	Siemens	280 Tage	Fr 04.07.08	Do 30.07.09
500kV GIL	Siemens	280 Tage	Fr 04.07.08	Do 30.07.09
<b>Shipment 1</b>	Siemens	147 Tage	Fr 06.02.09	Mo 31.08.09
500kV GIL	Siemens	47 Tage	Fr 06.02.09	Mo 13.04.09
<b>Shipment 2</b>	Siemens	122 Tage	Fr 13.03.09	Mo 31.08.09
500kV GIL	Siemens	47 Tage	Fr 13.03.09	Mo 18.05.09
<b>Shipment 3</b>	Siemens	97 Tage	Fr 17.04.09	Mo 31.08.09
500kV GIL	Siemens	47 Tage	Fr 17.04.09	Mo 22.06.09
<b>Shipment 4</b>	Siemens	72 Tage	Fr 22.05.09	Mo 31.08.09
500kV GIL	Siemens	47 Tage	Fr 22.05.09	Mo 27.07.09
<b>Shipment 5</b>	Siemens	47 Tage	Fr 26.06.09	Mo 31.08.09
500kV GIL	Siemens	47 Tage	Fr 26.06.09	Mo 31.08.09
<b>Site Activities</b>	Siemens	208 Tage	Di 17.03.09	Do 31.12.09
500kV GIL	Siemens	208 Tage	Di 17.03.09	Do 31.12.09
Project Completion - Stage 1 - Without Phase Shifters	Siemens/Hydro	0 Tage	Do 31.12.09	Do 31.12.09
Project Completion - Stage 1 - With Phase Shifters	Siemens/Hydro	0 Tage	Mo 28.03.11	Mo 28.03.11

Source: The Nevada Hydro Company, Inc.



Table 3-9

**DISCRETIONARY PERMITS, APPROVALS, AND CONSULTATION**

<b>Federal Agencies<sup>1</sup></b>	
Federal Energy Regulatory Commission Hydro West Branch 2 888 First Street, NE Washington, DC 20426	Federal hydropower license
Secretary of Energy United States Department of Energy 1000 Independence Ave., SW Washington, DC 20585	Consultation
United States Forest Service Cleveland National Forest Trabuco Ranger District 1147 E. Sixth Street Corona, California 92879	Forest Plan amendment SUP authorization Easements or other real property conveyances Forest plan amendment or interpretation Timber settlement sale
Bureau of Land Management Palm Springs South Coast Field Office 690 W. Garnet Avenue (P.O. Box 581260) North Palm Springs, California 92258-1260	Easements or other real property conveyances
U.S. Environmental Protection Agency, Region 9 75 Hawthorne Street San Francisco, California 94105	Conformity determination Prevention of significant deterioration permit
United States Department of the Interior United States Fish and Wildlife Service Carlsbad Field Office 6010 Hidden Valley Road Carlsbad, California 92011	Section 7 consultation Take authorization
National Marine Fisheries Service Southwest Region - Habitat Conservation Division 501 West Ocean Boulevard, Suite 4200 Long Beach, California 90802	Section 7 consultation Take authorization
United States Department of the Interior Office of the Secretary of the Interior 1849 "C" Street N.W. Washington, DC 20240	Notification of impending loss of archaeological resources
United States Department of the Interior San Francisco Region 600 Harrison Street, Suite 515 San Francisco, California 94107-1376	Notification of impending loss of archaeological resources
United States Army Corps of Engineers Los Angeles District 911 Wilshire Boulevard P. O. Box 2711 Los Angeles, California 90053-2325	Section 404 individual or nationwide permit Section 10 permit
United States Department of the Navy Office of the Secretary of the Navy 1000 – Navy Pentagon Washington, D.C. 20350-1000	License for non-federal use of real property
United States Department of the Navy Southwest Division 1220 Pacific Highway San Diego, California 92132	License for non-federal use of real property

Table 3-9 (Continued)  
**DISCRETIONARY PERMITS, APPROVALS, AND CONSULTATION**

<b>Federal Agencies (Continued)</b>	
United States Marine Corps Camp Joseph H. Pendleton Natural Resources Department Box 555010 Camp Pendleton, California 92055-5010	License for non-federal use of real property Base Commander General consultation
Federal Aviation Administration Western-Pacific Region - Air Traffic Division 1500 Aviation Boulevard Hawthorne, California 90250	Notice of proposed construction or alteration (Form 746001)
National Park Service Pacific West Region 600 Harrison Street, Suite 600 San Francisco, California 94107	Section 106 consultation
Advisory Council on Historic Preservation 1100 Pennsylvania Avenue, MW, Suite 803 Old Post Office Building Washington, DC 20004	Section 106 consultation
United States Bureau of Indian Affairs Pacific Regional Office 2800 Cottage Way Sacramento, California 95825	Section 106 consultation
<b>State Agencies</b>	
California Public Utilities Commission 505 Van Ness Avenue San Francisco, California 94102	Certificate of public convenience and necessity Permit to construct
California Independent System Operator P.O. Box 639014 Folsom, California 95763-9014	Acceptance of operational control
California Department of Water Resources Southern District 770 Fairmont Avenue Glendale, California 91203	Certificate of approval of plans and specifications
California Department of Water Resources Division of Safety of Dams 2200 "X" Street, Suite 200 Sacramento, California 95818-2502 P. O. Box 942836 Sacramento, California 94236-0001	Certificate of approval of plans and specifications
California Department of Fish and Game South Coast, Region 5 4949 Viewridge Avenue San Diego, California 92123	Streambed alteration agreement
California Department of Fish and Game Eastern Sierra and Inland Desert Region, Region 6 3602 Inland Empire Boulevard, Suite C-220 Ontario, California 91764	Streambed alteration agreement
California Fish and Game Commission 1416 9th Street, Room 1320 Sacramento, California 95814	Application for fishway

Table 3-9 (Continued)  
**DISCRETIONARY PERMITS, APPROVALS, AND CONSULTATION**

<b>State Agencies (Continued)</b>	
State Water Resources Control Board Division of Water Rights 1001 "I" Street P.O. Box 2000 Sacramento, California 94814	Statement of water diversion and use Permit to appropriate water Section 401 water quality certification
California Regional Water Quality Control Board Santa Ana Region (8) 3737 Main Street, Suite 500 Riverside, California 92501	Section 401 water quality certification NPDES and associated storm water permits Storm water pollution prevention plan
California Regional Water Quality Control Board San Diego Region (9) 9174 Sky Park Court, Suite 100 San Diego, California 92123-4340	Section 401 water quality certification NPDES and associated storm water permits Storm water pollution prevention plan
California Department of Transportation, District 8 464 W. Fourth Street, 6 <sup>th</sup> Floor San Bernardino, California 92401-1400	Highway crossing permit Right-of-way easements Encroachment permit
South Coast Air Quality Management District 21865 E. Copley Drive Diamond Bar, CA 91765	Permit to construct Permit to operate
San Diego County Air Pollution Control District 9150 Chesapeake Drive San Diego, CA 92123-1096	Permit to construct Permit to operate
California Department of Industrial Relations Division of Occupational Safety and Health 1515 Clay Street, Suite 1901 Oakland, California 94612	Construction activities permit Tower cranes permit Helicopter operations permit Tunneling permit
California State Lands Commission 100 Howe Avenue, Suite 100 South Sacramento, California 95825-8202	Lease or permit for use of non-tidal navigable waters
Local Agency Formation Commission 3850 Vine St, Suite 110 Riverside, California, 92507-4277	Change of organization
California Coastal Commission San Diego Coast District Office 7575 Metropolitan Drive, Suite 103 San Diego, California 92108-4402	Consultation
<b>Local Agencies</b>	
Elsinore Valley Municipal Water District 31315 Chaney Street Lake Elsinore, California 92531	Operating agreement Water purchase agreement
Eastern Municipal Water District 2270 Trumble Road Perris, California 92572-8300	Water purchase agreement
County of Riverside Planning Department 4080 Lemon Street P.O. Box 1409 Riverside, California 92502-1409	MSHCP permit General plan amendment and zone change Tentative map, easement, or lot line adjustment Dedication and acceptance Conditional use permit NPDES and associated storm water permits Stormwater pollution prevention plan

Table 3-9 (Continued)  
**DISCRETIONARY PERMITS, APPROVALS, AND CONSULTATION**

<b>Local Agencies (Continued)</b>	
County of Riverside Flood Control and Water Conservation District 1995 Market Street Riverside California, 92501	Development review Flood hazard report and conditions Cooperative agreement Encroachment permit Site plan review
Riverside County Health Department Environmental Health Services 4065 County Circle Drive, Room 123 Riverside, California 92503	Drilling permit (water well)
County of San Diego Planning and Land Use Department 5201 Ruffin Road, Suite B San Diego, California 92123	Tentative map, easement, or lot line adjustment NPDES and associated storm water permits Stormwater pollution prevention plan Building permits
County of San Diego Department of Environmental Health Land and Water Quality Division P.O. Box 129261 San Diego, California 91221-9261	Drilling permit (water well)
City of Lake Elsinore Community Development Department 130 S. Main Street Lake Elsinore, California 92530	Tentative map, easement, or lot line adjustment Rezoning and annexation General Plan amendment and zone change Shoreline buffer zone Dedication and acceptance Design review
Metropolitan Water District of Southern California 700 North Alameda Street Los Angeles, California 90012-2944 P.O. Box 54153 Los Angeles, California 90054-0153	Real property conveyance or encroachment permit Water purchase agreement
Western Riverside County Regional Conservation Agency 4080 Lemon Street, Twelfth floor Riverside, California 92501	Real property conveyance or encroachment permit Joint project review
Western Riverside County Regional Conservation Agency 4080 Lemon Street, Twelfth floor Riverside, California 92501	Real property conveyance or encroachment permit Joint project review
Lake Elsinore Unified School District 545 Chaney Street Lake Elsinore, California 92530	School or facilities agreement
<b>Tribal Governances</b>	
Pechanga Band of Mission Indians P.O. Box 1477 Temecula, California 92593	Section 106 consultation
Agua Caliente Band of Cahuilla Indians 600 E. Tahquitz Canyon Palm Springs, California 92262	Section 106 consultation

Table 3-9 (Continued)  
**DISCRETIONARY PERMITS, APPROVALS, AND CONSULTATION**

<b>Tribal Governances</b>	
Juaneno Band of Mission Indians Acjachemen Nation 31411-A La Matanza Street San Juan Capistrano, California 92675	Section 106 consultation
La Jolla Band of Mission Indians 22000 Highway 76 Pauma Valley, California 92061	Section 106 consultation
Pala Band of Mission Indians 35008 Pala Temecula Road, PMB 50 Pala, California 92059	Section 106 consultation
Pauma/Yuima Band of Mission Indians P.O. Box 369 Pauma Valley, California 92061	Section 106 consultation
Rincon Band of Mission Indians P.O. Box 68 Valley Center, California 92082	Section 106 consultation
Gabrieleno/Tongva Tribal Council of San Gabriel P.O. Box 693 San Gabriel, California 91776	Section 106 consultation
Juaneno Band of Mission Indians 31742 Via Belardes San Juan Capistrano, California 92675	Section 106 consultation
Juaneno Band of Mission Indians 27001 La Paz Road, Suite 330 Mission Viejo, California 92691	Section 106 consultation
San Luis Rey Band of Mission Indians 1042 Highland Drive Vista, California 92083	Section 106 consultation

Source: The Nevada Hydro Company, Inc.

- California Regional Water Quality Control Board, Santa Ana Region's (SARWQCB) "Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region Areawide Urban Runoff, Order No. R8-2002-0011, NPDES No. CAS 618033"<sup>76</sup> (Riverside County NPDES Permit);
- California Regional Water Quality Control Board, San Diego Region's (SDRWQCB) "Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer System Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority, Tentative Order No. R9-2006-0011, NPDES Permit No. CAS0108758"<sup>77</sup> (San Diego County NPDES Permit); and

<sup>76/</sup> California Regional Water Quality Control Board, Santa Ana Region, Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region Areawide Urban Runoff, Order No. R8-2002-0011, NPDES No. CAS 618033, October 25, 2002.

<sup>77/</sup> California Regional Water Quality Control Board, San Diego Region, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer System Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San

- SDRWQCB's "General Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or other Conveyance Systems, San Diego Region, Order No. R9-2002-0020, NPDES No. CAG679001."<sup>78</sup>

Pursuant to Section 27 of the FPA (16 U.S.C. 821), "nothing contained herein shall be construed as affecting or intending to affect or in any way to interfere with the laws of the respective States relating to the control, appropriation, use, or distribution of water used in irrigation or for municipal or other uses, or any vested right acquired therein."

In California, the SWRCB is responsible for the issuance of water quality certification (Section 13160, CWC) and for the administration of surface water rights (Sections 1000-5976, CWC). A water rights permit is not required for the use of purchased water, groundwater, or reclaimed water. Waters used by the EVMWD and by other agencies to stabilize water levels in Lake Elsinore are from water purchases, groundwater wells, and the authorized discharge of reclaimed waters. As such, there exist no outstanding water rights issues associated with the proposed projects.

### **3.6 Existing Agreements and Special Use Permits**

It is the Applicant's belief and understanding that the following agreements and USFS-issued special use permits (SUPs) are now in place and may affect the proposed projects, have potential bearing on the project's design, and/or influence the project's operations.

- **Development Agreement.** The EVMWD and TNHC have entered into a development agreement whereby the EVMWD has conveyed to TNHC the "exclusive right to develop the project." The "Development Agreement by and between Elsinore Valley Municipal Water District and The Hydro Company, Incorporated," dated May 15, 1997, in combination with any subsequent agreements that may be executed between the EVMWD and TNHC, define the roles, responsibilities, and obligations of both parties with respect to the proposed LEAPS project. As stipulated in the Development Agreement: "[The Nevada Hydro] Company will pay District for the performance of water management services, which performance shall include, without limitation, maintaining the water level sufficient for operation of the project, at Lake Elsinore from revenues resulting from power generation operations of the project."<sup>79</sup>

Referencing the SARWQCB's "Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads": "The average amount of supplemental water needed to maintain Lake Elsinore at 1240 to 1247 feet (considered the appropriate operation range) is 8,800 AFY. Under worst-case drought conditions, up to 13,800 AFY of supplemental water may be needed to maintain the lake elevation above 1240 feet. Of these amounts, 5,000 AFY is assumed to come from the groundwater via three island wells, while the rest would come

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Diego County Regional Airport Authority, Tentative Order No. R9-2006-0011, NPDES Permit No. CAS0108758, August 30, 2006.

<sup>78/</sup> California Regional Water Quality Control Board, San Diego Region, General Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or other Conveyance Systems, San Diego Region, Order No. R9-2002-0020, NPDES No. CAG679001, August 14, 2002.

<sup>79/</sup> *Op. Cit.*, Development Agreement by and between Elsinore Valley Municipal Water District and The Hydro Company, Incorporated, Paragraph 3.2.



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from recycled wastewater from either EMWD or EVMWD.”<sup>80</sup> TNHC’s obligations, if any, under the Development Agreement for any fee payment for water management services are, therefore, limited to those identified by the SARWQCB with regards to elevation 1240-feet AMSL.

- **Power Agencies of California.** In 1994, the EVMWD executed a letter agreement with the Cities of Anaheim, Azusa, Banning, Colton, and Riverside (Cities) which may or could remain applicable to the LEAPS project. Under the terms of that agreement and subject to the provisions therein, the Cities agreed to surrender the Cities’ then existing preliminary permit under now-expired FERC Project No. 11261, to support the issuance of any permit, license, or authorization relative to the development of the “Lake Elsinore Pumped Storage Project,” retained the right to intervene (either jointly or individually) in any proceedings involving the issuance of a permit, license, or other authorization necessary or relevant to the development of that project in exchange for the EVMWD’s agreement to: (1) “sell to the Cities, collectively or individually, up to a total of 75 megawatts (MW) of capacity and provide associated peaking energy of at least 6 megawatt-hours of MW each week from the project under terms and at price to be negotiated and set forth” in a “30-year power sales agreement” (PSA); and (2) “design the project in such a way so that it is capable of providing, subject to prudent utility practices and the terms of EVMWD’s regulatory authorization, such capacity and associated peaking energy.”

In the even that the EVMWD and the Cities are unable to agree upon the terms of the PSA, the EVMWD agreed to give the Cities a one time right-of-first refusal to purchase up to 75 MW of capacity from the “Lake Elsinore Pumped Storage Project” under the same terms and conditions agreed to for the sale from that project to a third party.

As specified in the Development Agreement: “District represents and warrants that it has obtained from each of the Cities an effective waiver of the provisions of Section VII of the letter agreement with Cities which waive shall be acceptable to Company in form and content. Company hereby undertakes to honor District’s obligations, if any, under Section V of the letter agreement with Cities.”<sup>81</sup>

- **City of Lake Elsinore.** On March 1, 2003, the EVMWD and the City of Lake Elsinore executed a “Lake Elsinore Comprehensive Water Management Agreement.” The stated purpose of that agreement was to: (1) clarify and restate the rights and obligations of the EVMWD and the City with respect to the use of San Jacinto River flows for domestic, municipal, and industrial uses in the EVMWD’s service area and for recreational use of Lake Elsinore, and fish and wildlife enhancement; and (2) provide the term and framework by which the EVMWD and the City will work together to provide supplemental water supplies, when available and within the resources of the community, to maintain the elevation of Lake Elsinore, to the extent feasible, at a minimum level of 1240-feet AMSL.

That agreement included the following provisions with regards to the LEAPS project: “The District has explored and continues to explore the possible approval and

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<sup>80</sup>/ California Regional Water Quality Control Board, Santa Ana Region, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads, March 26, 2004, revised May 21, 2004, pp. 72-73.

<sup>81</sup>/ *Op. Cit.*, Development Agreement by and between Elsinore Valley Municipal Water District and The Hydro Company, Incorporated, Paragraph 10.7.

implementation of the Lake Elsinore Advanced Pumped Storage project. This project envisions drawing water from Lake Elsinore as part of the project. The City agrees to cooperate with the District in analyzing and to discuss plans regarding the use of water stored in the lake to implement the LEAPS project. In no event shall the LEAPS project result in the permanent diversion or increased evaporation of water already in the lake without providing for the introduction of suitable replacement water at the District's or the project proponent's sole cost. Moreover, the LEAPS project, if implemented, shall not interfere with the recreational use of Lake Elsinore, adversely impact fish and wildlife enhancement in and around Lake Elsinore, or in any way frustrate the ability of the parties, or either of them, to accomplish the objectives and purpose of this agreement."

- **Elsinore Hang Gliding Association.** The Forest Service has issued, to the Elsinore Hang Gliding Association (EHGA), an annual special use permit, renewable on December 31<sup>st</sup> of each year, to use or occupy approximately two acres of NFS lands (NE ¼ of SEC 22 and SE ¼ of SEC 23, T6S R5W) within the TRD subject to the conditions specified therein. The SUP grants to the EHGA the authority to maintain and operate "two launch sites, Edwards and E for hang gliders and paragliders that include three outlying windsocks." As specified, the SUP is not assignable or transferable. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. In addition, The Forest Service may suspend or revoke this permit in whole or part for: (1) non-compliance with federal, State, or local laws and regulations; (2) non-compliance with the terms and conditions of the permit; (3) reasons in the public interest; and/or (4) abandonment or other failure of the holder to otherwise exercise the privileges granted.

One of the two "launch sites" is located north of South Main Divide Truck Trail, adjacent to the proposed Decker Canyon upper reservoir site. The other launch site is located in the general vicinity of the upper reservoir's proposed construction laydown area. Although not specified in the SUP, the primary landing site is located on the site of the Applicant's alternative powerhouse site (Ortega Oaks). The proposed realignment of South Main Divide Truck Trail and the construction and earthwork activities associated with the proposed LEAPS project could encroach upon one or both of those launch areas. Similarly, the proposed transmission line will be located in the general vicinity of the flight paths extending linearly between the launch sites and the landing zone (Ortega Oaks). Under the proposed projects, that the segment of the 500-kV transmission line extending between the Edward and E launch sites would be placed underground.

### **3.7 Mandatory Conditions and Requirements**

As part of the LEAPS project's licensing and entitlement processes, various federal and State agencies are empowered to and may elect to impose additional conditions upon the hydropower project. Any mandatory conditions identified and imposed by those agencies, whether specified herein or identified subsequent to the publication of this document, are incorporated as elements of the proposed LEAPS projects. Unless specifically identified as such, those permit conditions do not constitute mitigation measures under CEQA.

#### **3.7.1 Federal Power Act**

Section 4(e) of the FPA (16 U.S.C. 797[e]) states that FERC, when considering whether or not to issue a license (in addition to the power and development purposes) is required to give,

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“equal consideration” to energy conservation, the protection, mitigation, and enhancement of fish and wildlife, recreational opportunities, and other aspects of environmental quality. Section 4(e) further states that FERC may issue a hydropower license for a project on a reservation<sup>82</sup> of the United States only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired.

The proposed projects are located primarily on lands within the CNF and Camp Pendleton, which are federal reservations.<sup>83</sup> Under Section 4(e) of the FPA, FERC must include in any license issued for a hydropower project located within a federal reservation all conditions that the managing agency shall deem necessary for the adequate protection and utilization of that reservation. The following additional provisions are stipulated under the FPA.

- Section 4(e) and 10(a)(1) of the FPA (16 U.S.C. 797[e] and 803[a][1]) requires FERC, in acting on license applications, to give equal consideration to the development and environmental uses of the waterways on which a project is located. Any license issued shall be such as, in FERC’s judgment, best adapted to a comprehensive plan for improving or developing a waterway for all beneficial public uses.
- Section 10(a)(2) (16 U.S.C. 803[a][2][A]) requires FERC to consider the extent to which a hydroelectric project is consistent with federal and state comprehensive plans for improving, developing, and conserving waterways affected by the project.
- Section 10(j)(1) of the FPA (16 U.S.C. 803[j][1]) requires FERC, when issuing a license, to include conditions based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*) to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife” affected by the project.
- Section 18 (16 U.S.C. 811) provides that FERC shall require a licensee to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior (acting through the National Marine Fisheries Service) or the Secretary of Commerce (acting through the United States Fish and Wildlife Service), as appropriate.<sup>84</sup>

### 3.7.2 Federal Endangered Species Act

Section 7(a)(2) of the Federal Endangered Species Act of 1973 (FESA) (16 U.S.C. 1536[a][2]) require federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of designated critical habitat. Formal consultation with the United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) shall be

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<sup>82/</sup> As defined in Section 3 of the FPA, the term “reservation” shall mean “national forests, tribal lands embraced within Indian reservations, military reservations, and other lands and interests in lands owned by the United States, and withdrawn, reserved, or withheld from private appropriation and disposal under the public land laws; also lands and interests in lands acquired and held for any public purposes; and shall not include national monuments or national parks.”

<sup>83/</sup> The Organic Administration Act of 1897 (16 U.S.C. 475) stipulates that national forest lands were established and administered only for watershed protection and timber production.

<sup>84/</sup> As indicated in the Federal Register: “Fishways help mitigate the impact of hydropower dams on aquatic ecosystems by providing fish passage. Fishways on dams serve a variety of public purposes and resource goals, including, but not limited to, the safe and timely physical passage of fish past the project; the improvement/augmentation of existing populations within a basin; the reunification of fragmented populations; and the reintroduction/reestablishment of viable fish runs in a basin or watershed” (65 FR 80898, December 22, 2000).

initiated if the proposed agency action is likely to affect the listed species, unless through informal consultation the action agencies and the USFWS and/or NMFS determine that there will not likely be an adverse effect. Section 7(b)(3)(A) of the FESA (16 U.S.C. 1536[b][3][A]) requires the USFWS and/or NMFS to provide to the action agency a biological opinion detailing how the agency action would affect the species or its critical habitat.

Section 7(b)(4) of the FESA provides that if, after consultation, the Secretary of Commerce or the Interior concludes that the agency action will not jeopardize the continued existence of a species, the Secretary shall provide the agency with a written statement that species the impact of incidental taking on the species, specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact, and set forth the terms and conditions that must be complied with to implement those measures. Under Section 7(o)(2) of the FESA, any incidental taking resulting from the projects' construction or operation must be in compliance with the terms and conditions of an incidental take statement to avoid being considered a prohibited taking of the species.

### **3.7.3 National Historic Preservation Act**

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended (PL 89-665, 16 U.S.C. 470) requires that every federal agency "take into account" how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places.

### **3.7.4 Federal Clean Water Act**

Section 401(a)(1) of the CWA (33 U.S.C. 1341[a][1]) requires the license applicant to obtain from the state in which any project discharge into navigable waters originates, certification that such discharge will comply with applicable water quality standards, or waiver of such certification.<sup>85</sup> Section 401(a)(1) requires state water quality certification conditions to be included in the hydropower license. Section 401(d) of the CWA (33 U.S.C. 1341[d]), authorizes state water quality agencies to impose discharge limits and other conditions on their Section 401(a) certifications and provides that all such conditions shall become conditions of the associated FERC license.<sup>86</sup>

## **3.8 Additional Articles, Conditions, and Measures Incorporated into the Projects**

Specific articles, conditions, and PM&E measures have been identified by FERC, the USFS, and by the Applicant. These articles, conditions, and PM&E measures, whether identified by a public agency or self-imposed by the Applicant, are hereby incorporated into the proposed projects and made a part thereof. As such, these articles, conditions, and PM&E measures do

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<sup>85</sup> Section 401 states, in part: "Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the state in which the discharge originates or will originate. . .that may such discharge will comply with the applicable provisions of Sections 1311, 1312, 1313, 1316, and 1317 of [the CWA]. . .No license or permit shall be granted until the certification required by this section has been obtained."

<sup>86</sup> A state must take final action by issuing, waiving, or denying certification within one year of the date on which a license applicant submits a written request (33 U.S.C. 1341[a][1]). Failure of a state to take action on a request for certification within the one-year time period waives the requirement that the applicant obtain the certification.

not constitute separate mitigation measures under CEQA but instead are integral parts of the projects themselves as proposed.

A list of FERC's standard license conditions (articles), environmental and other measures, the Forest Service's Section 4(e) and EPP conditions, and the Applicant's proposed PM&E measures applicable to the LEAPS project is presented in Appendix B (Articles, Conditions, and Measures).<sup>87</sup> The LEAPS project will fully comply with all additional and/or alternative licensing conditions as may be established by FERC.

Unless otherwise exempt, all projects undertaken in California must comply with the statutes, regulations, rules, policies, plans, and standards of those applicable State and local agencies, departments, divisions with jurisdiction over the proposed projects or the resources located on the project sites.<sup>88</sup> Since compliance with those statutes, regulations, rules, policies, plans, and standards is already mandated, compliance neither constitute mitigation under CEQA nor requires explicit inclusion as a condition of the projects' approval.

### 3.9 Magnetic Field Reduction Measures

CPUC General Order 131-D(X) requires applicants for a CPCN to "describe the measures taken or proposed by the utility to reduce the potential exposure to electric and magnetic fields generated by the proposed facility." In accordance therewith, the Applicant will: (1) assist the CPUC and other appropriate local, State, and federal governmental agencies in the development and implementation of reasonable, uniform regulatory guidelines; (2) provide balanced, accurate information to employees and public agencies, including providing electro-magnetic field (EMF) measurements and consultation as required; and (3) take appropriate "no-cost and low-cost" steps to minimize field exposures from facilities.

The Applicant has adopted, as the Applicant's "best accepted practices" applicable to the TE/VS Interconnect project, the methods and techniques outlined in SCE's "EMF Design Guidelines for New Electrical Facilities: Transmission, Substation, Distribution" manual.<sup>89</sup> Using these guidelines, "no-cost and low-cost" measures to reduce EMF fields will be implemented, wherever available and practical, in accordance with CPUC regulations (Decision 93-11-013, November 2, 1993).

Priority in the design of any electrical facility is public and employee safety. Without exception, design and construction of TNHC's transmission facilities will comply with all federal, State, and

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<sup>87</sup> Section 241 of EPAAct 2005 adds Section 33 to the FPA, allowing the license applicant or any other party to the license proceeding to propose an alternative condition or prescription. The Secretary of the agency involved must accept the proposed alternative if the Secretary determines, based on substantial evidence provided by a party to the license proceeding or otherwise available to the Secretary: (a) that the alternative condition provides for the adequate protection and utilization of the reservation, or that the alternative prescription will be no less protective than the fishway initially proposed by the Secretary; and (b) that the alternative will either cost significantly less to implement or result in improved operation of the project works for electricity production.

<sup>88</sup> Section 312 of the CCR contains a set of "general terms" which apply to any approval of a dam safety application. Unless otherwise preempted under the FPA, the following "general terms" are assumed to be integral components of the proposed hydropower project: (1) construction work shall be started within one year from the date of approval; and (2) no foundations or abutments shall be covered by the material of the dam until the Department of Water Resources – Division of Safety of Dams (DSOD) has been given an opportunity to inspect and approve the same. In addition, the law required that a dam shall, at all times, be designed, constructed, operated, and maintained so that it shall not or would not constitute a danger to life or property and the DSOD may, at any time, exercise any discretion with which it is vested or take any action necessary to prevent such danger.

<sup>89</sup> Southern California Edison Company, EMF Design Guidelines for New Electrical Facilities: Transmission, Subtransmission, Distribution, December 2003.

local regulations, applicable safety codes, and CPUC construction standards. Furthermore, power lines and substations will be constructed so that they can operate reliably at their design capacity. Their design will be compatible with other facilities in the area. The cost to operate and maintain the facilities must, however, be reasonable.

These and other requirements are included in the existing CPUC regulations. As a supplement, the CPUC has directed all investor-owned utilities in California to take “no-cost and low-cost” magnetic field reduction measures for new and upgraded electrical facilities. Any possible “no-cost and low-cost” magnetic field measures, therefore, must meet these requirements.

The Applicant defines “no-cost and low-cost” magnetic field reduction measures as follows: (1) “no-cost” measures include any design changes that reduce the magnetic field in public areas without increasing the overall project cost; and (2) “low-cost” measures are those steps taken to reduce magnetic field levels at reasonable cost.

The 1993 CPUC decision states: “We direct the utilities to use 4 percent as a benchmark in developing their EMF mitigation guidelines. We will not establish 4 percent as an absolute cap at this time because we do not want to arbitrarily eliminate a potential measure that might be available but costs more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent.” The CPUC agreed that a “low-cost” measure should achieve some noticeable reduction but declined to specify any numeric value.

The Applicant’s proposed transmission line will use state-of-the-art technology called gas-insulated switchgear (GIS) and gas-insulated transmission line (GIL) technologies, coupled with Siemens concept of Flexible AC Transmission Systems (FACTS). FACTS provides fast voltage regulation, increased power transfer over long AC lines, dampening of active power oscillations, and load flow control in meshed systems. The TE/VS Interconnect project will be the first transmission line in the United States to run GIL for approximately two miles underground. GIL results in much smaller electromagnetic fields than with conventional power transmission systems. This technology can be used close to telecommunications equipment, hospitals, residential areas, and flight monitoring systems since it meets the most stringent magnetic flux density requirements.

As indicated by the CEC: “GILs feature a relatively large-diameter tubular conductor sized for the gas insulation and surrounded by a solid metal sleeve. This configuration translates to lower resistive and capacitive losses, no external EMFs, good cooling properties, and reduced total life-cycle costs compared with other types of cables.”<sup>90</sup>

### **3.10 Additional Self-Imposed Actions**

In addition to those requirements imposed by status and those standard license conditions, environmental and other measures, Section 4(e) and EPP conditions, and PM&E measures identified in [Appendix B](#) (Articles, Conditions, and Measures), the Applicant has identified a number of additional actions designed to further reduce the potential environmental impacts associated with the proposed projects. Because these additional actions constitute Applicant-nominated conditions, the following actions constitute a part of the project description and are not, therefore, mitigation measures under CEQA.

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<sup>90</sup>/ California Energy Commission, California’s Electricity System of the Future: Scenario Analysis in Support of Public-Interest Transmission System R&D Planning, Consultant Report, P500-03-084F, October 2003.

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- Action 1. As exact locations for the various facilities are determined, depending on the type of habitat that will be impacted and the potential for species occurrence, additional biological surveys will be conducted to assess the likely presence or absence of those threatened or endangered plant species that have a moderate or high potential to occur. If the surveys determine that any sensitive plant species are present within the construction footprint, additional consultations shall occur with the appropriate resource agency and additional reasonable actions will be taken consistent with any measures that may be established by the USFWS under Section 7 of the FESA.
- Action 2. As currently proposed, transmission towers are generally aligned within USFWS-designated critical habitat for Quino checkerspot butterfly and designated and proposed critical habitat of coastal California gnatcatcher. Installation of the projects' facilities within these critical habitat areas, as well as within other areas of suitable habitat for these species, will not occur prior to consultation with the USFWS under Section 7 of FESA. Mitigation will include habitat restoration at a ratio determined through agency consultation and may include additional focused surveys.
- Action 3. Project elements such as transmission towers will not be located within potentially suitable habitat for threatened or endangered wildlife species that occur within riparian communities or drainage features, including arroyo toad, California red-legged frog, southwestern willow-flycatcher, and least Bell's vireo. Minimum setbacks from streams will be established and appropriate BMPs will be implemented.
- Action 4. Southern steelhead is known to occur within San Mateo Creek. A water quality monitoring plan will be developed in consultation with the USFS, SWRCB, SDRWQCB, and SARWQCB for the purpose of monitoring project-related effects on both the San Mateo and San Juan Creek watersheds.
- Action 5. Because the projects include areas containing suitable habitat for Stephens' kangaroo rat and are located within the Riverside County Stephens' Kangaroo Rat Habitat Conservation Plan Fee Assessment Area, mitigation for potential impacts to this species will include the payment of a mitigation fee depending on the amount of suitable habitat impacted.
- Action 6. In the area of the upper reservoir, rough grading activities shall be monitored by a paleontologic construction monitor and shall include the inspection of fresh exposures that are created by grading, trenching, and other earth-moving activities. Monitoring shall allow for the recovery of large fossil remains, if uncovered, and for the recording of associated fossil specimens and site data. If appropriate, monitoring shall also include periodic dry test screening of debris to allow for the recovery of small fossil remains. Initially, monitoring shall be conducted on a half-time basis. If no or only few fossil remains are recovered as a result of monitoring after approximately 50 percent of the earth moving activities have been completed in areas underlain by previously undisturbed rock, monitoring activities shall cease.

The paleontologist shall develop a formal agreement with a recognized museum repository regarding: (1) the final disposition and permanent storage and maintenance of any fossil remains that might be recovered as a result of the mitigation program; (2) the archiving of associated specimen data and corresponding geologic and geographic site data; and (3) the level of treatment (preparation, identification, curation, cataloging) of the remains that would be required before the mitigation program fossil collection would

be accepted by the repository for storage. As soon as practical, the monitor shall recover all vertebrate fossil specimens and representative samples of invertebrate and plant fossils. All fossil specimens recovered from the property as a result of the monitoring program shall be treated (prepared, identified, curated, catalogued) in accordance with designated museum repository requirements.

The monitor will maintain monitoring logs that note the locations where monitoring was conducted and the fossil specimens recovered and shall record associated specimen data and corresponding geologic and geographic site data. A final technical report, prepared in accordance with Society of Vertebrate Paleontology (SVP) guidelines, summarizing the results of the monitoring program, shall be submitted to FERC and the Forest Service.