

Southern California Edison
San Joaquin Cross Valley Loop Project A.08-05-039

DATA REQUEST SET SJXVL CPUC-ED-03

To: ENERGY DIVISION

Prepared by: Thomas T. Taylor

Title: Manager, Biological and Archaeological Resources Group, CEH&S

Dated: 08/07/2008

Question 13:

Alternatives

Please provide the Section 106 Report for historic 1919 Big Creek – Rector Line.

Response to Question 13:

Southern California Edison's Big Creek Hydroelectric Project has been determined eligible to the National Register of Historic Places by consensus. The Big Creek 3 - Rector 220 kV Transmission Line is one of three Big Creek transmission lines constructed during the project's Period of Significance (1911-1929). Big Creek 3 - Rector is one of the first two lines constructed in 1913 to bring Big Creek electricity south to Los Angeles. Originally energized at 150 kV, the voltage was increased to 220 kV in 1919. This modification required attachment of longer insulator strings, and in many places raising the height of original towers by disconnecting them from their footings, jacking them up, and inserting an additional lattice steel tower section (or two).

Attached is a copy of the fully executed 2006 Programmatic Agreement between the Sierra National Forest, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding management of Historic Properties (i.e., National Register of Historic Places listed or eligible resources) that may be affected by removal of the Big Creek transmission lines from the Federal Energy Regulatory Commission operating licenses for Big Creek, and re-permitting these lines by the Sierra National Forest. The PA serves as documentation of the National Register of Historic Places status of the Big Creek 3 - Rector Transmission Line.

Also attached is a copy of a section of the draft Historic Properties Management Plan that was prepared and submitted to the Sierra National Forest in 2007 as directed by the PA. This section pertains to treatment of the NRHP eligible transmission lines in the event they are significantly modified or removed. This section was reviewed and informally approved by Dwight Dutschke of the SHPO's office so that the treatment plan could be applied to projects such as Cross Valley for consistencies purposes. The draft HPMP is still under review by the Sierra National Forest heritage program manager.

**PROGRAMMATIC AGREEMENT AMONG
THE SIERRA NATIONAL FOREST,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
and
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
MANAGEMENT OF HISTORIC PROPERTIES THAT MAY BE AFFECTED BY
GRANTING OF AN EASEMENT FOR OPERATION AND MAINTENANCE OF
TRANSMISSION LINES ASSOCIATED WITH THE
BIG CREEK HYDROELECTRIC SYSTEM,
FRESNO AND MADERA COUNTIES, CALIFORNIA**

WHEREAS, Southern California Edison Company (hereinafter "SCE") owns and operates the Big Creek Hydroelectric System (hereinafter "Big Creek System") comprising seven hydroelectric projects operated under licenses issued by the Federal Energy Regulatory Commission (hereinafter "the FERC"), and in part located on lands within the Sierra National Forest (hereinafter "the Forest"), administered by the United States Forest Service in Madera and Fresno counties, California (see Attachment 1: "Project Vicinity Map"); and

WHEREAS, SCE has been authorized by the FERC to have certain Big Creek System related electric transmission and communication facilities, and access roads and trails that are part of the SCE Transmission System removed from the boundaries for four of the SCE Big Creek System projects (FERC Project Nos. 67, 120, 2017, and 2175), contingent upon the issuance of an easement by the Forest granting SCE the right to operate and maintain the transmission lines and communications facilities, and access roads and trails on Forest land (hereinafter "Easement"); and

WHEREAS, SCE has applied to the Forest for an Easement (see Attachment 2: "Exhibit A" maps of SCE Easement [35 sheets]) to operate and maintain the following FERC project-related electric transmission and communication facilities, and their associated access roads and trails (hereinafter, "the Facilities") in accordance with the Federal Land Management and Policy Act (P.L. 94-579):

FERC Project	Transmission Line
67	Big Creek 3 to Big Creek 8 (220 kV)
67	Big Creek 2 to Big Creek 8 (220 kV)
120	Big Creek 3 to Springville (220 kV)
2017	Big Creek 3 to Big Creek 4 (220 kV)
2017	Big Creek 4 to Springville (220 kV)
2175	Big Creek 1 to Big Creek 2 (200 kV)
	Big Creek 2 to Big Creek 3 (220 kV)
	Big Creek 1 to Rector (200 kV)
	Big Creek 3 to Rector (220 kV)

and

WHEREAS, the Forest has determined that:

- (a) granting an Easement to SCE to operate and maintain the Facilities on public lands administered by the Forest, for a period of up to 50 years, constitutes an "Undertaking", as defined at 36 CFR §800.16(y) (hereinafter, "the Undertaking"); and
- (b) this Undertaking may affect the Big Creek 3 – Big Creek 8, Big Creek 2 – Big Creek 8, Big Creek 3 – Springville, Big Creek 1 – Big Creek 2, Big Creek 2 – Big Creek 3, Big Creek 1 – Rector, and Big Creek 3 – Rector electric transmission facilities which are contributing elements of the Big Creek Hydroelectric System Historic District, a property determined, in consultation with the California State Historic Preservation Officer (hereinafter "SHPO"), to be eligible for inclusion in the National Register of Historic Places (hereinafter, "the NRHP"); and
- (c) other, as yet unknown or unevaluated properties that may be eligible for inclusion in the NRHP may also be affected by the Undertaking; and

WHEREAS, historic properties and cultural resources on public lands administered by the Forest are managed according to the National Historic Preservation Act (NHPA, P.L. 89-665, as amended), Archaeological Resources Protection Act (P.L. 96-95, as amended), National Environmental Policy Act (P.L. 91-190, as amended), American Indian Religious Freedom Act (P.L. 95-341, as amended), and Native American Graves Protection and Repatriation Act (P.L. 101-601), applicable regulations (e.g., 36 CFR §60, §63, §296, and §800; 43 CFR §10), and applicable Executive Orders (e.g., 13007, 13175, and 13287), and these have been considered during consultation for this Programmatic Agreement (hereinafter "PA"); and

WHEREAS, in accordance with the conditions of the Easement to be granted by the Forest, and in accordance with the stipulations of this PA, which shall be appended to and made a part of the Forest's Decision Memo authorizing the grant of the Easement, SCE has specific responsibilities for managing historic properties within the Easement, including:

- (a) certain routine historic properties management activities (per 36 CFR §800.14(b)(1)(iv)); and
- (b) identifying and evaluating the historical significance of properties that may be eligible for inclusion in the NRHP (i.e., historic properties); and
- (c) assessing effects of the Undertaking on historic properties; and
- (d) preparing and implementing a Historic Properties Management Plan (hereinafter, "HPMP") to, among other things, take into account any potential adverse effects of the Undertaking on historic properties (per 36 CFR §800.14(b)(1)(v); (see Attachment 3, HPMP Contents Outline); and

WHEREAS, SCE, as the grantee of the Easement, has participated in consultation per 36 CFR §800.2(c)(4), is to carry out certain stipulations of this PA, and has been invited to concur in this PA; and

WHEREAS, in developing this PA, the Forest has consulted with parties interested in the grant of the Easement and has invited interested parties to concur in this PA, including,

- (a) federally recognized California Indian tribes (per 36 CFR §800.2(c)(3); 36 CFR §800.2(d); 36 CFR §800.14(b)(2); and 36 CFR §800.14(f)), i.e., Big Sandy Rancheria, Cold Springs Rancheria, North Fork Rancheria, Picayune Rancheria, Table Mountain Rancheria; and
- (b) federally unrecognized California Indian tribes (per 36 CFR §800.2(c)(5)), i.e., Dunlap Band of Mono Indians, and North Fork Mono Tribe; and

- (c) Native American organizations (per 36 CFR §800.2(c)(5)), i.e., The Mono Nation, Native Earth Foundation, and Sierra Mono Museum; and
- (d) groups interested in the history of the lands on which the project facilities are located (per 36 CFR §800.2(c)(5)), i.e., Central Sierra Historical Society, County of Fresno Historical Landmarks & Records Advisory Commission, Eastern Fresno Historical Society, Huntington Lake Association, Huntington Lake Big Creek Historical Conservancy, Sierra Mono Museum, Sierra Nevada Access Multiple Use and Stewardship (SAMS) Coalition; and

WHEREAS, in accordance with NHPA §110(d) the Forest intends to use this PA to advance the purposes of the NHPA by preserving historic properties for the appreciation and enjoyment of future generations; and

WHEREAS, in accordance with regulations at 36 CFR §800.14(b)(3) implementing §106 of the NHPA, the Forest has consulted with the SHPO per 36 CFR §800.6(a), and notified the Advisory Council on Historic Preservation (hereinafter "the Council") per 36 CFR §800.6(a)(1)(C) to address potential effects of the Undertaking on historic properties, and the Council has elected to participate in this PA per 36 CFR §800.6(b)(1);

NOW, THEREFORE, the Forest, SCE, the SHPO, and the Council agree that the Forest, to the extent of its legal authority, shall ensure that the following stipulations of this PA are implemented to take into account the effects of the Undertaking on historic properties.

STIPULATIONS

The Forest shall ensure that the following measures are implemented.

1.0 Definitions

The definitions found at 36 CFR §800.16 apply throughout this PA. Those definitions are supplemented below by a glossary of terms to be used in the HPMP.

"Area of Potential Effects" means the following:

- (a) Those lands within the boundaries of the Sierra National Forest (including privately owned in-holdings) and which are incorporated into the area within the Easement boundaries as the Easement is depicted in the "Maps of SCE Easement", which comprise Attachment 2 of this PA.
- (b) The APE shall also include the entire area of spatially discrete historic properties (e.g., archaeological sites), if any part of such a property extends into the Easement; except that management of linear cultural resources (e.g., NRHP-eligible roads and trails) shall not cause the APE to be extended beyond the Easement boundary.
- (c) The APE shall also include contributing elements of NRHP-eligible historic districts that are within the Easement, however, the APE shall not include contributing elements of districts that lie outside the Easement boundary.

"Concurring Parties" means invited parties, including SCE, tribes, and members of the public, who concur, through their signature, in this PA. Concurring parties may propose amendments to this PA.

"Signatories" means the Forest, the SHPO, and the Council. Signatories may propose amendments to this PA and have the exclusive authority to terminate the PA.

2.0 Historic Properties Management Plan

2.1 SCE shall develop a Historic Properties Management Plan (HPMP) for the Undertaking detailing a historic preservation program to:

- (a) inventory, evaluate, manage, and treat adverse effects to historic properties within the APE;
- (b) consult and coordinate with government agencies, tribes, and the public with regard to implementation of the HPMP;
- (c) provide for curation of archaeological and historical items associated with the historic preservation program for the Undertaking;
- (d) support interpretation of historic properties to the public and other public involvement in historic preservation; and
- (e) define the roles and responsibilities of the Forest and SCE in any long-term management of historic properties in the APE.

2.2 The HPMP shall address, at a minimum and in appropriate detail, the elements defining the historic preservation program outlined in Attachment 3. The HPMP shall be written and organized in a manner so that sensitive information (e.g., archaeological site or traditional cultural property locations) regarding historic properties is kept confidential. The HPMP shall, however, discuss the management of historic properties in a manner that can be summarized and provided for review and comment by the public.

2.3 Within one (1) year of the date of execution of this PA, an Administrative Draft HPMP shall be prepared and submitted by SCE to the Forest for review and comment. Within 30 calendar days following receipt, the Forest shall provide written comments to SCE. The Forest will direct SCE to make revisions to the Administrative Draft HPMP consistent with the Forest's written comments. The resulting document will be the Draft HPMP.

2.3.1 The Forest shall distribute the Draft HPMP to the SHPO, the Council, tribes, and other parties who have participated in the development of this PA for review and comment. The Forest will notify the public of the availability of the Draft HPMP. Reviewers of the Draft HPMP will have 30 calendar days from date of receipt to provide their written comments to the Forest. The Forest may, at its sole discretion, extend the review/comment period for any or all of the reviewing parties, but under no circumstances will the review/comment period exceed 60 calendar days.

2.3.2 The Forest shall take into account review comments by the SHPO, the Council, tribes, and other parties in preparing a Final HPMP. The Forest will direct SCE to make appropriate changes in the Draft HPMP based on reviewer comments. SCE shall make the changes to the Draft HPMP as directed by the Forest. SCE shall submit a revised HPMP to the Forest within 90 calendar days of receipt of the Forest's directive to make changes. Upon acceptance by the

Forest, the resulting document will be the Final HPMP. The Final HPMP shall be provided to the SHPO, tribes, and other parties to this PA within 10 days of receipt from SCE by the Forest of an acceptable Final HPMP. The Forest and SHPO shall indicate their acceptance of the Final HPMP in letters of concurrence signed by the Forest and the SHPO.

2.3.3 The Forest shall notify the public that the Final HPMP has been completed. This notification will be made to at least the parties originally consulted regarding the PA. The Forest shall, within 30 calendar days of the Forest's and SHPO's acceptance of the Final HPMP, provide copies of the Final HPMP to the signatories and concurring parties to this PA. The Forest shall provide copies, or provide access to copies, of the Final HPMP to members of the public who request copies.

2.3.4 Should any party to this PA object to the content of the Draft or Final HPMP, the Forest will proceed to resolve the objection consistent with **Stipulation 4.0, Resolving Objections**, below.

2.4 The Final HPMP shall be implemented as follows.

2.4.1 Upon written acceptance by the Forest and the SHPO the HPMP shall be implemented under the authority of this PA as the Forest's historic preservation program for compliance with NHPA §106 for the Undertaking.

2.4.2 Implementation of the HPMP shall be monitored by the Forest, the SHPO, the Council, tribes, and other parties to this PA through review of an annual *Historic Preservation Compliance Report*. The report is to be prepared by SCE and submitted annually by February 1st, to the Forest.

2.5 Changes to the HPMP after its implementation shall be made as follows:

2.5.1 Should SCE, the Forest, the Council, or SHPO determine that changes to the HPMP are warranted to modify existing elements, or to add or delete some elements, of the historic preservation program defined by the HPMP, SCE and the Forest shall consult to make the agreed upon changes. The Forest shall then give notice to the SHPO and the the Council, and consult in writing with the SHPO and the Council to determine if proposed changes constitute a significant revision of the historic preservation program. The SHPO and the Council shall have 30 days to respond in writing to the Forest's proposed changes to the HPMP. If the Forest, the Council, and SHPO concur that the proposed changes do not constitute a significant revision to the HPMP, then the Forest and SCE shall proceed to revise and implement the appropriate elements of the HPMP. Failure by the SHPO or the Council to respond in writing within 30 days shall be taken as concurrence by the SHPO or the Council regarding the proposed change in the HPMP. If the Forest, the Council, or the SHPO believes the proposed changes to the HPMP constitute a significant revision to the historic preservation program, the signatories shall proceed to consult according to Stipulation 4.0 of this PA. Should the Forest, the Council, or the SHPO object regarding proposed changes to the HPMP, the parties shall proceed according to Stipulation 4.0 of this PA.

2.5.2 SCE shall describe any revision to the HPMP, whether determined significant or insignificant, in its annual Historic Preservation Compliance Report.

2.6 Until the finalized HPMP is executed and implemented, the Forest will comply with regulations at 36 CFR §800.4–800.6. SCE shall assist and cooperate with the Forest during this interim period.

3.0 Emergency Situations

3.1 Should the Forest find it necessary to implement undertakings within 30 days of declared emergencies (as defined at 36 CFR 78.2), or undeclared emergencies where there are imminent threats of major natural disaster (including human caused wildfire) or national security such that emergency actions are necessary for the preservation of human life or property, the Forest Supervisor shall within seven (7) working days of the date the emergency declaration notify the SHPO and the Council of the emergencies, and advise them that the Forest will follow either

- (a) provisions of this PA, and where time permits, the SHPO and the Council agree to provide comments within seven (7) working days or less as situations warrant; or
- (b) provisions of 36 CFR 800.

3.2 The Forest may determine that an “undeclared emergency” exists when the Forest Supervisor determines there is the need for the Forest to take emergency action to preserve human life and property and there is the potential to affect historic properties. Such need may arise during the Forest’s response to, for example, floods, wildfires, human caused fires, or other emergency incidents of a local nature that do not meet the standard of a declared emergency as defined at 36 CFR 78.2. After determining that an undeclared emergency exists the Forest Supervisor shall within seven (7) working days of the date the emergency declaration notify the SHPO and the Council of the emergencies, and advise them that the Forest will follow either

- (a) provisions of this PA, and where time permits, the SHPO and the Council agree to provide comments within seven (7) working days or less as situations warrant; or
- (b) provisions of 36 CFR 800.

3.3 SCE may respond to damage to or destruction of Facilities within the APE that are the result of a natural disaster (including human caused wildfire), or are otherwise of an unexpected, serious nature requiring immediate repair and restoration of the Facilities, including but not limited to the collapse of or serious damage to a transmission line tower, or repair of a fallen conductor. SCE may respond to such situations without prior notification to or authorization from the Forest provided that SCE reports to the appropriate Forest district Lands Officer such emergency repairs by 8 AM the first business day following initiation of the emergency repair. SCE and the Forest will comply with the “Emergency Situations” provisions of the HPMP or the Forest will otherwise comply with provisions of this PA or with provisions of 36 CFR 800.

4.0 Resolving Objections

4.1 Should the SHPO, the Council, or the Forest object at any time, to the manner in which the terms of this PA are implemented, the Forest will immediately notify the SHPO and the Council, and request SHPO and the Council comments on the objection within 30 days, and then proceed to consult with the SHPO and the Council for no more than 30 days to resolve the objection. The Forest will take any comments provided by the SHPO into account.

If the Forest determines that the objection can be resolved within the consultation period, the Forest may authorize the disputed action to proceed in accordance with the terms of such resolution.

4.2 If at the end of the 30 day consultation period, the Forest determines that the objection cannot be resolved through such consultation, the Forest will forward all documentation relevant to the objection to the Council per 36 CFR §800.2(b)(2). Any comments provided by the Council within 30 days after its receipt of all relevant documentation will be taken into account by the Forest in reaching a final decision regarding the objection. The Forest will notify the SHPO, the Council, and SCE in writing of its final decision within 14 days after it is rendered. The Forest shall have the authority to make the final decision resolving the objection.

4.3 The Forest's responsibility to carry out all other actions under this PA that are not the subject of the objection will remain unchanged. The Forest may implement that portion of the Undertaking subject to objection under this stipulation after complying with subsection 3.2 of this stipulation.

4.4 At any time during implementation of the terms of this PA, should an objection pertaining to the PA or HPMP be raised by a member of the public, the Forest shall immediately notify the SHPO about the objection and take the objection into account. The SHPO and the Council may comment on the objection to the Forest. The Forest shall consult with the objecting party for no more than 30 days. Within 14 days following closure of consultation, the Forest will render a decision regarding the objection and notify all parties of its decision in writing. In reaching its final decision, the Forest will take into account all comments from the parties regarding the objection. The Forest shall have the authority to make the final decision resolving the objection. Any dispute pertaining to the NRHP eligibility of historic properties or cultural resources covered by this PA will be addressed by the Forest per 36 CFR §800.4(c)(2). The Forest shall determine if Stipulation 3.1 and 3.2 shall be implemented.

5.0 Amendment

5.1 Any party to this PA may at any time propose amendments, whereupon all parties shall consult to consider such amendments pursuant to 36 CFR §800.6(c)(7) and §800.6(c)(8). This PA may be amended only upon written agreement of the signatories.

5.2 Each attachment to the PA may be individually amended through consultation of the parties without requiring amendment of the PA, unless the signatories through such consultation decide otherwise.

5.3 Amendments to this PA shall take effect on the dates that they are fully executed by the signatories.

6.0 Termination

6.1 Only signatories may terminate this PA. If this PA is not amended as provided for in Stipulation 4.1 and 4.2, or if the SHPO, the Council, or Forest proposes termination of this PA for other reasons, the signatory proposing termination shall notify the other signatory in writing,

explain the reasons for proposing termination, and consult for no more than 30 days to seek alternatives to termination.

6.2. Should such consultation result in an agreement on an alternative to termination, the signatories shall proceed in accordance with that agreement.

6.3 Should such consultation fail, the signatory proposing termination may terminate this Agreement by promptly notifying the other signatory in writing.

6.4 Should this PA be terminated, then the Forest shall either consult in accordance with 36 CFR §800.14(b) to develop a new Agreement or request the comments of the Council pursuant to 36 CFR §800.4-800.6.

6.5 Beginning with the date of termination, the Forest shall ensure that until and unless a new PA is executed for the actions covered by this PA, such undertakings shall be reviewed individually in accordance with 36 CFR §800.4-800.6.

7.0 Confidentiality of Records and Information

The signatories shall maintain the confidentiality of records and information pertaining to the location and nature of cultural resources, including historic properties about which there are culturally sensitive issues, consistent with NHPA §304 and ARPA Section 9. The Forest may determine that certain records and files are appropriate to distribute to parties outside the agency, including tribes who have participated in this PA.

8.0 Duration of this PA

The signatories shall consult to reconsider the terms of this PA within ten (10) years of the date this PA is executed, and subsequently within ten (10) years after each date of execution of a renewal of this PA. Reconsideration may include continuation of the PA as originally executed or amended, or termination.

9.0 Effective Date

This PA shall take effect on the date that it has been fully executed by the signatories. Attachments to this PA shall take effect on the dates they are fully executed by the signatories, or such other self-executing dates as may be described in those attachments..

EXECUTION AND IMPLEMENTATION OF THIS PA is evidence that the Forest has afforded the Council a reasonable opportunity to comment on the Undertaking and its effects on historic properties. The signatories to this PA represent that they have the authority to sign for and bind the entities on behalf of whom they sign.

SIGNATORIES

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By, John M. Fowler Date 4/5/06
John Fowler, Executive Director

STATE OF CALIFORNIA, OFFICE OF HISTORIC PRESERVATION

By, Milford Wayne Donaldson Date 21 FEB 2006
Milford Wayne Donaldson, State Historic Preservation Officer

U.S.D.A. FOREST SERVICE

By, Edward C. Cole Date 2-17-06
Edward C. Cole, Forest Supervisor, Sierra National Forest

CONCURRING PARTIES

SOUTHERN CALIFORNIA EDISON COMPANY

By, Walter J. Johnson Date 1-18-06
Walter J. Johnson, Vice President Power Delivery

(From Hydro Sep. Draft HPMP ver. 04-09-07)

Resolving Adverse Effects to Historic Transmission Lines in the Easement

The Programmatic Agreement documents the Advisory Council's concurrence that the Big Creek transmission lines retain historical integrity and that certain types of modifications to transmission lines do not diminish their historical integrity if,

- (a) transmission towers are original construction or substantially retain their original fabric, look, and feel;
- (b) all post-period-of-significance modifications are in-kind and retain original design integrity, for example original porcelain insulators have been replaced with porcelain insulators (i.e., the presence of porcelain insulators is sufficient for integrity to be maintained) or aluminum-steel conductors are replaced by similarly manufactured conductors that are approximately the same diameter and appearance of the original wires; or,
- (c) modifications such as retro-installed concrete tower footings have been installed to ensure original tower stability and meet safety requirements.

To be an adverse effect an undertaking would have to cause changes to transmission lines that exceed the threshold established by the criteria above. Such adverse changes (whether such change is done incrementally or all at once) would entail any substantial alteration to the historic design or fabric of the towers; moving towers from their present location; or, substantially altering their setting, feeling, or association. Any such changes resulting in an adverse effect would affect the segment of the transmission line along which such change occurred, and would have to be of such magnitude that the change diminishes the integrity of the entire segment.

Integrity of Transmission Lines

The following guidelines will be used to measure change in the integrity of the transmission lines and for use in determining if such changes would be considered adverse. These guidelines consider each of the elements of integrity that contribute to the National Register significance of transmission lines.

Location – Because the Big Creek transmission system is comprised almost entirely of towers situated in their original locations, the dislocation of one or more towers would diminish the historical integrity of the segment along which a tower is located. There may be circumstances under which moving a tower cannot be avoided, such as when towers are undermined by erosion, or dislocated by landslides. It is foreseeable, too, that towers might be relocated to accommodate construction of other structures or facilities, such as roads and highways, residential or commercial property developments, or to address safety

concerns. Whatever the reason for removing a tower from its original location, such removal is considered an adverse effect.

Design—The original steel lattice towers are the most conspicuous elements of the transmission system features and substantially retain their original design and fabric. Repair and in-kind replacement of parts of these features does not necessarily diminish their historic integrity. Replacement of a tower or significant alteration of it would constitute an adverse effect if (1) the tower were replaced with one of a design different from the original Big Creek design for a standard or anchor tower; or (2) if an original tower were altered such that it no longer retained substantially the appearance of an original tower (for example, the cross-arms were replaced with cross-arms of a different design, or a tower were raised by inserting a lattice-steel segment of a different geometric design). Adding communications devices, grounding wires, vibration dampeners, or other similar devices would not constitute an adverse effect as long as whatever is added could be removed later without causing damage or significant permanent alteration to the original structure.

Setting—Alteration of the setting of the transmission lines is, over most of their distance, not caused by actions of SCE. Population growth and suburban and urban development that alters the rural landscape along most of the routes is not something that can be controlled by SCE. The setting of the transmission lines could be most directly and adversely affected if SCE or another utility were to construct a new transmission line adjacent to the existing Big Creek 1 & 2 lines. The Big Creek 3-Springville-Magunden-Antelope-Vincent-Eagle Rock transmission lines are already paralleled by the Big Creek 4 transmission lines built after the period of significance of the BCHSHD. The Big Creek 4 lines are, however, identical in design, materials, and workmanship to the Big Creek 3 lines. This perhaps contributes to a false sense of historical setting, but does not jarringly detract from the sense of setting, feeling or association of the Big Creek 3 lines. Thus, the integrity of setting of the Big Creek 3 lines is compromised but not to the point of being lost entirely. Constructed ca. 1951, the NRHP eligibility of the Big Creek 4 lines could be evaluated either independently or in the context of reconsidering the earlier evaluation of the BCHSHD. Construction of a new transmission line of a design different from the historic design of the original Big Creek lines and within the viewshed of any of the BCHSHD lines would be an adverse effect.

Materials—The original steel lattice towers mostly retain their historic materials. Some repairs have doubtless been made, and repairs will occur in future, but those made with in-kind materials do not affect the historic integrity of the towers. Repairs made using other than in-kind materials, and not consistent with the original design of a tower is considered an adverse effect.

Replacing conductors and insulators, as noted previously, is not considered an adverse effect as long as the materials used are in-kind and substantially mimic the original materials used.

Workmanship — The elements of the transmission system are, generally speaking, uniformly made according to a fixed design appropriate for the function of each type of tower. Thus, there are no artistic or idiosyncratic elements of workmanship that merit preservation. The manner of construction bears preservation, however, such that repairs made on towers, to the extent feasible and safe, should be made in the original manner, using nuts and bolts as opposed to welding or using other types of fasteners, for example. Conspicuous alteration of the appearance of a tower resulting from workmanship not consistent with the original materials and methods of tower assembly would be considered an adverse effect.

Feeling and association — Along the transmission line corridor one does retain a historical sense of feeling and association. Avoiding adverse effects in the other categories of historic integrity will maintain the sense of feeling and association for the transmission lines.

Treatment of Adverse Effects to Transmission Lines

The most likely events resulting in adverse effects to the Big Creek transmission lines will involve the substantial alteration or removal of historic towers. Whether towers are modified or replaced on an individual or collective basis, the net effect is the same: the historic Big Creek transmission system will be altered to the point that its historic integrity will be compromised and avoidance of such efforts is not realistic.

The original Big Creek transmission system has essentially three structural elements: steel lattice towers (of two types — standard and anchor); conductors (which are regularly repaired or replaced as necessary); and insulators (which are regularly repaired or replaced as necessary). It is the towers, then, that comprise what is left of the original historic fabric of the transmission system and it is these that should be the focus of any mitigation of adverse effects. *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, *The Secretary of the Interior's Standards for Architectural and Engineering Documentation* (Federal Register 68:43159-43162), and *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68) provide the regulatory basis and guidance for designing a treatment of the adverse effects to the BCHSHD transmission system. According to the regulations and guidance cited, appropriate treatment measures are development of a historic context for the transmission system, and documentation of the towers that will be adversely affected.

The historic context of the Big Creek Hydroelectric System has been prepared in numerous reports, including all those cited herein. Additional historic photo and engineering documentation exists in Edison archives and in the Huntington Library. Edison has committed to sponsor preparation of a formal nomination of the BCHSHD to the National Register as part of its relicensing of FERC Projects 67, 120, 2085 and 2175. Documentation of towers would be as defined in *The Secretary of the Interior's Standards for Architectural and Engineering Documentation* (Federal Register 68:43159-43162). Documentation of transmission towers will quickly become redundant, given that there are only two types of towers that were constructed and these were constructed according to a consistent design. Edison will confirm that this is the case and will document all tower structure types. A Level II HABS/HAER/HALS documentation of one example of each tower type will suffice.

The treatment plan will have two parts. The first is a single overview of the Big Creek 1 & 2-Rector-Magunden-Eagle Rock, and Big Creek 3-Springville-Magunden-Antelope-Vincent-Eagle Rock transmission lines, coupled with a detailed description of the two types of original Big Creek towers consisting of text, historic and modern photographic images, and engineering renderings prepared to HABS/HAER/HALS standards if needed. The second is a series of contextual documentation to HABS/HAER/HALS standards of each transmission line segment prepared at the time when that line segment is threatened by significant loss of integrity. Transmission line segments are defined by geographic expanses that from a land use or visual perspective appear homogenous, or are divided by extant substations. The overview will be cited in each segment record and not repeated.