

Contents

1. Mitigated Negative Declaration	1-1
1.1 Project Objectives	1-1
1.2 Introduction	1-2
1.3 Project Description	1-3
1.4 Initial Study	1-4
1.5 Applicant Proposed Measures and Mitigation Measures	1-4
2. Environmental Determination	2-1
2.1 Environmental Factors Potentially Affected	2-1
2.2 Environmental Determination	2-1
3. Introduction to the Initial Study	3-1
3.1 Proposed Project Overview	3-1
3.2 Environmental Analysis	3-2
3.2.1 CEQA Process	3-2
3.2.2 CEQA Lead Agency/Scope of CEQA Review	3-3
3.2.3 Initial Study	3-4
4. Project Description	4-1
4.1 Project Information	4-1
4.1.1 Project Title	4-1
4.1.2 Lead Agency Name and Address	4-1
4.1.3 Lead Agency Contact Person and Phone Number	4-1
4.1.4 Project Location	4-1
4.1.5 Project Sponsor's Name and Address	4-1
4.1.6 General Plan Designation	4-1
4.1.7 Zoning	4-2
4.1.8 Description of Project	4-2
4.1.9 Surrounding Land Uses and Setting	4-3
4.1.10 Permits and Approvals Required	4-3
4.1.11 California Native American Tribal Consultation	4-6
4.2 Project Capacity and Objectives	4-7
4.2.1 Project Capacity	4-7
4.2.2 Project Objectives	4-7
4.3 Project Location	4-8
4.4 Project Components – Overview	4-10
4.5 Project Components by System	4-12
4.5.1 Line-Related Work	4-13
4.5.2 Poles/Towers	4-15
4.5.3 Conductor/Cable	4-18
4.5.4 Mid-Line Series Capacitors	4-20
4.5.5 Modification to Existing Substations	4-23
4.5.6 Cathodic Protection of Natural Gas Transmission Pipelines	4-27
4.6 Right-of-Way Requirements	4-27
4.7 Construction	4-29
4.7.1 For All Project Components	4-29
4.7.2 Transmission Line Construction (Above Ground)	4-35
4.7.3 Below Ground Construction Related to Transmission Line ROW	4-43

4.7.4	Mid-Line Series Capacitor Construction.....	4-44
4.7.5	Fiber Optic Repeater Construction.....	4-46
4.7.6	Modifications at Other Facilities.....	4-47
4.7.7	Land Disturbance Summary.....	4-47
4.7.8	Construction Equipment and Workforce	4-50
4.7.9	Construction Schedule.....	4-51
4.8	Operation and Maintenance	4-52
4.8.1	Proposed Mid-Line Series Capacitors.....	4-52
4.8.2	Existing Substations	4-53
4.8.3	Transmission, Subtransmission, and Distribution Lines	4-53
4.8.4	Telecommunications Facilities.....	4-54
4.9	Applicant-Proposed Measures and Standard Practices.....	4-55
4.10	Electric and Magnetic Fields	4-62
4.11	References.....	4-64
Attachment 4.A – Discrepancy Work Areas		
Attachment 4.B – Tower Modifications Associated with Optical Ground Wire Installation		
Attachment 4.C – Construction Equipment and Workforce Estimates		
5.	Environmental Analysis.....	5-1
	Introduction	5-1
	Format of Environmental Resource Sections.....	5-1
5.1	Aesthetics.....	5-3
5.1.1	Environmental Setting.....	5-3
5.1.2	Regulatory Background.....	5-9
5.1.3	Applicant Proposed Measures.....	5-13
5.1.4	CEQA Significance Criteria.....	5-13
5.1.5	Methodology.....	5-13
5.1.6	Project Impacts and Mitigation Measures.....	5-22
5.1.7	References.....	5-29
Attachment 5.1A – Characterization Photographs		
Attachment 5.1B – BLM Visual Contrast Rating Worksheets		
Attachment 5.1C – Visual Simulations		
5.2	Agriculture and Forestry Resources.....	5-39
5.2.1	Environmental Setting.....	5-39
5.2.2	Regulatory Background.....	5-41
5.2.3	Applicant Proposed Measures.....	5-42
5.2.4	CEQA Significance Criteria.....	5-42
5.2.5	Methodology.....	5-43
5.2.6	Project Impacts and Mitigation Measures.....	5-43
5.2.7	References.....	5-46
5.3	Air Quality.....	5-47
5.3.1	Environmental Setting.....	5-47
5.3.2	Regulatory Background.....	5-50
5.3.3	Applicant Proposed Measures.....	5-52
5.3.4	CEQA Significance Criteria.....	5-53
5.3.5	Methodology.....	5-54
5.3.6	Project Impacts and Mitigation Measures.....	5-55
5.3.7	References.....	5-61

5.4	Biological Resources.....	5-63
5.4.1	Environmental Setting	5-63
5.4.2	Regulatory Background.....	5-72
5.4.3	Applicant Proposed Measures	5-77
5.4.4	CEQA Significance Criteria.....	5-80
5.4.5	Methodology.....	5-81
5.4.6	Project Impacts and Mitigation Measures	5-83
5.4.7	References.....	5-122
5.5	Cultural Resources	5-125
5.5.1	Environmental Setting	5-125
5.5.2	Regulatory Background.....	5-128
5.5.3	Applicant Proposed Measures	5-133
5.5.4	CEQA Significance Criteria.....	5-134
5.5.5	Methodology.....	5-134
5.5.6	Project Impacts and Mitigation Measures	5-142
5.5.7	References.....	5-149
5.6	Energy.....	5-151
5.6.1	Environmental Setting	5-151
5.6.2	Regulatory Background.....	5-152
5.6.3	Applicant Proposed Measures	5-154
5.6.4	CEQA Significance Criteria.....	5-154
5.6.5	Methodology.....	5-154
5.6.6	Project Impacts and Mitigation Measures	5-155
5.6.7	References.....	5-157
5.7	Geology and Soils.....	5-159
5.7.1	Environmental Setting	5-159
5.7.2	Regulatory Background.....	5-175
5.7.3	Applicant Proposed Measures	5-180
5.7.4	CEQA Significance Criteria.....	5-181
5.7.5	Methodology.....	5-181
5.7.6	Project Impacts and Mitigation Measures	5-183
5.7.7	References.....	5-192
5.8	Greenhouse Gas Emissions.....	5-205
5.8.1	Environmental Setting	5-205
5.8.2	Regulatory Background.....	5-206
5.8.3	Applicant Proposed Measures	5-208
5.8.4	CEQA Significance Criteria.....	5-208
5.8.5	Methodology.....	5-208
5.8.6	Project Impacts and Mitigation Measures	5-209
5.8.7	References.....	5-211
5.9	Hazards and Hazardous Materials.....	5-213
5.9.1	Environmental Setting	5-213
5.9.2	Regulatory Background.....	5-220
5.9.3	Applicant Proposed Measures	5-225
5.9.4	CEQA Significance Criteria.....	5-225
5.9.5	Methodology.....	5-226
5.9.6	Project Impacts and Mitigation Measures	5-226
5.9.7	References.....	5-233

5.10	Hydrology and Water Quality	5-235
5.10.1	Environmental Setting	5-235
5.10.2	Regulatory Background.....	5-238
5.10.3	Applicant Proposed Measures	5-242
5.10.4	CEQA Significance Criteria	5-242
5.10.5	Methodology	5-242
5.10.6	Project Impacts and Mitigation Measures	5-243
5.10.7	References.....	5-249
5.11	Land Use and Planning	5-251
5.11.1	Environmental Setting	5-251
5.11.2	Regulatory Background.....	5-256
5.11.3	Applicant Proposed Measures	5-259
5.11.4	CEQA Significance Criteria	5-259
5.11.5	Methodology	5-259
5.11.6	Project Impacts and Mitigation Measures	5-259
5.11.7	References.....	5-263
5.12	Mineral Resources	5-267
5.12.1	Environmental Setting	5-267
5.12.2	Regulatory Background.....	5-272
5.12.3	Applicant Proposed Measures	5-273
5.12.4	CEQA Significance Criteria	5-273
5.12.5	Methodology	5-274
5.12.6	Project Impacts and Mitigation Measures	5-274
5.12.7	References.....	5-275
5.13	Noise.....	5-277
5.13.1	Environmental Setting	5-277
5.13.2	Regulatory Background.....	5-280
5.13.3	Applicant Proposed Measures	5-282
5.13.4	CEQA Significance Criteria	5-282
5.13.5	Methodology	5-283
5.13.6	Project Impacts and Mitigation Measures	5-284
5.13.7	References.....	5-290
5.14	Population and Housing	5-293
5.14.1	Environmental Setting	5-293
5.14.2	Regulatory Background.....	5-295
5.14.3	Applicant Proposed Measures	5-295
5.14.4	CEQA Significance Criteria	5-296
5.14.5	Methodology	5-296
5.14.6	Project Impacts and Mitigation Measures	5-296
5.14.7	References.....	5-298
5.15	Public Services.....	5-301
5.15.1	Environmental Setting	5-301
5.15.2	Regulatory Background.....	5-306
5.15.3	Applicant Proposed Measures	5-308
5.15.4	CEQA Significance Criteria	5-308
5.15.5	Methodology	5-309
5.15.6	Project Impacts and Mitigation Measures	5-309
5.15.7	References.....	5-312

5.16	Recreation.....	5-317
5.16.1	Environmental Setting	5-317
5.16.2	Regulatory Background.....	5-322
5.16.3	Applicant Proposed Measures	5-324
5.16.4	CEQA Significance Criteria	5-324
5.16.5	Methodology	5-325
5.16.6	Project Impacts and Mitigation Measures	5-325
5.16.7	References.....	5-326
5.17	Transportation	5-333
5.17.1	Environmental Setting	5-333
5.17.2	Regulatory Background.....	5-340
5.17.3	Applicant Proposed Measures	5-343
5.17.4	CEQA Significance Criteria	5-343
5.17.5	Methodology	5-343
5.17.6	Project Impacts and Mitigation Measures	5-344
5.17.7	References.....	5-351
5.18	Tribal Cultural Resources.....	5-363
5.18.1	Environmental Setting	5-363
5.18.2	Regulatory Background.....	5-370
5.18.3	Applicant Proposed Measures	5-372
5.18.4	CEQA Significance Criteria	5-372
5.18.5	Methodology	5-372
5.18.6	Project Impacts and Mitigation Measures	5-373
5.18.7	References.....	5-379
5.19	Utilities and Service Systems.....	5-381
5.19.1	Environmental Setting	5-381
5.19.2	Regulatory Background.....	5-383
5.19.3	Applicant Proposed Measures	5-384
5.19.4	CEQA Significance Criteria	5-384
5.19.5	Methodology	5-385
5.19.6	Project Impacts and Mitigation Measures	5-385
5.19.7	References.....	5-392
5.20	Wildfire.....	5-393
5.20.1	Environmental Setting	5-393
5.20.2	Regulatory Background.....	5-394
5.20.3	Applicant Proposed Measures	5-395
5.20.4	CEQA Significance Criteria	5-395
5.20.5	Methodology	5-396
5.20.6	Project Impacts and Mitigation Measures	5-396
5.20.7	References.....	5-399
5.21	Mandatory Findings of Significance.....	5-401
	Approach to Cumulative Impact Analysis	5-402
6.	Mitigation Monitoring Plan	6-1
6.1	Minor Project Refinements	6-1
6.2	Dispute Resolution.....	6-2

7. Responses to Comments.....	7-1
Introduction	7-1
Comment Set A1 – California Department of Transportation, District 8	7-3
Responses	7-5
Comment Set A2 – Bureau of Reclamation, Lower Colorado Regional Office	7-6
Responses	7-8
Comment Set A3 – California Department of Water Resources.....	7-10
Responses	7-12
Comment Set A4 – California State Lands Commission.....	7-13
Responses	7-17
Comment Set A5 – Nevada Department of Water Resources.....	7-19
Responses	7-20
Comment Set A6 – Nevada Division of State Lands.....	7-21
Responses	7-26
Comment Set A7 – CPUC Public Advocates Office.....	7-27
Responses	7-31
Comment Set B1 – Natural Resources Defense Council.....	7-33
Responses	7-37
Comment Set B2 – Wild Tree Foundation.....	7-38
Responses	7-56
Comment Set C1 – Colorado River Indian Tribes.....	7-66
Responses	7-81
Comment Set D1 – Southern California Edison.....	7-90
Responses	7-100

Tables

Table 4-1	Permits and Approvals that May Be Required for the Project.....	4-4
Table 4-2	Typical Transmission Structure Dimensions	4-16
Table 4-3	Typical Subtransmission Structure Dimensions.....	4-18
Table 4-4	Typical Distribution Structure Dimensions.....	4-18
Table 4-5	Underground Structure Dimensions	4-20
Table 4-6	Mid-Line Series Capacitor Cut and Fill Grading Summary	4-22
Table 4-7	Mohave Substation Cut and Fill Grading Summary	4-26
Table 4-8	Potential Staging Yard Locations.....	4-29
Table 4-9	Typical Laydown/Work Area Dimensions	4-31
Table 4-10	Transmission, Subtransmission, and Distribution Approximate Land Disturbance.....	4-40
Table 4-11	Mid-Line Series Capacitor Ground Surface Improvement Materials.....	4-45
Table 4-12	Mid-Line Series Capacitor Estimated Land Disturbance	4-45
Table 4-13	Fiber Optic Repeater Ground Surface Improvement Materials.....	4-46
Table 4-14	Fiber Optic Repeater Estimated Land Disturbance	4-46
Table 4-15	Proposed Project Estimated Land Disturbance	4-48
Table 4-16	Construction Equipment Description	4-50
Table 4-17	Proposed Construction Schedule.....	4-52
Table 4-18	Applicant-Proposed Measures.....	4-56
Table 5.1-1	Jurisdictions Crossed by the ELM Project	5-14
Table 5.1-2	Visual Resource Management (VRM) Scenic Quality Rating	5-15
Table 5.1-3	Amount of Use Classifications	5-16
Table 5.1-4	Distance Zones	5-16

Table 5.1-5	Visual Resource Management (VRM) Classification Matrix.....	5-17
Table 5.3-1	National and California Ambient Air Quality Standards.....	5-48
Table 5.3-2	Attainment Status for Mojave Desert Air Basin, San Bernardino County.....	5-48
Table 5.3-3	Ambient Air Quality Data for the Project Area	5-49
Table 5.3-4	MDAQMD Significant Emissions Thresholds.....	5-54
Table 5.3-5	Federal General Conformity Rule De Minimis Emissions Thresholds.....	5-54
Table 5.3-6	Overall Proposed Project Construction Emissions, without APMs or Mitigation.....	5-56
Table 5.3-7	Overall Proposed Project Construction Emissions, with APMs and Mitigation	5-56
Table 5.3-8	Annual Construction Emissions by State, with APMs and Mitigation.....	5-57
Table 5.3-9	Operation Emissions, Standby Generators	5-58
Table 5.4-1	Sensitive Natural Communities	5-65
Table 5.4-2	Estimated Acres of Ground Disturbance.....	5-84
Table 5.4-3	Jurisdictional Hydrologic Features to Be Impacted by the Proposed Project.....	5-119
Table 5.5-1	Eligible Resources in California Potentially Subject to Direct Impacts from the Proposed Project.....	5-138
Table 5.5-2	Eligible Resources in Nevada Potentially Subject to Direct Impacts from the Proposed Project.....	5-141
Table 5.6-1	Energy Sources of Electricity Supplied to Customers (Power Content).....	5-151
Table 5.6-2	Electricity Consumption for Load Served by SCE and LADWP	5-152
Table 5.7-1	Geologic Units Underlying Proposed Project Components and Work Areas.....	5-160
Table 5.7-2	Soils in the Proposed Project Area.....	5-162
Table 5.7-3	Significant Active and Potentially Active Faults in the Vicinity of the Proposed Project.....	5-168
Table 5.7-4	High or Undetermined Paleontological Sensitivity for Mapped Units within the Project Area.....	5-173
Table 5.8-1	Proposed Project GHG Emissions	5-210
Table 5.9-1	Typical Hazardous Materials Used for Construction.....	5-214
Table 5.9-2	Hazardous Material Sites Within 1 Mile of the Proposed Project.....	5-215
Table 5.9-3	FUDS Sites in the Vicinity of the Proposed Project.....	5-217
Table 5.10-1	Groundwater Basins Crossed by the ELM Project.....	5-237
Table 5.10-2	Groundwater Quality	5-238
Table 5.11-1	Land Use Designations Crossed by the Proposed Project.....	5-251
Table 5.11-2	Zoning Designations Crossed by the Proposed Project	5-252
Table 5.12-1	Mineral Resource Producers, Past Producers, and Prospects within 1 Mile of the Proposed Project.....	5-268
Table 5.13-1	Typical Sound Levels Measured in the Environment and Industry	5-279
Table 5.13-2	Existing Ambient Noise Levels.....	5-279
Table 5.13-3	Typical Noise Levels for Individual Construction Equipment.....	5-285
Table 5.14-1	Population, Housing, and Employment 2017	5-293
Table 5.14-2	Population Estimates, Projections, and Average Annual Growth Rates	5-294
Table 5.16-1	Recreational Areas within 1 Mile of the Proposed Project	5-317
Table 5.17-1	Intersection Level of Service Definitions	5-334
Table 5.17-2	Roadway Network in the Vicinity of the Proposed Project	5-334
Table 5.17-3	Level of Service at Traffic Study Intersections during Proposed Project Construction.....	5-337
Table 5.21-1	Cumulative Projects within 5 Miles of the Proposed Project	5-403
Table 6-1	Mitigation Monitoring Program.....	6-2

Figures

Figure 4-1	Proposed Project Regional Overview Map	4-65
Figure 4-2	Project Overview.....	4-67
Figure 4-3	Ludlow Series Capacitor Detail	4-91
Figure 4-4	Newberry Springs Series Capacitor Detail	4-93
Figure 4-5	Ludlow–Newberry Springs Distribution/Telecom Detail	4-95
Figure 4-6	Barstow Repeater Detail.....	4-97
Figure 4-7	Kelbaker Repeater Detail.....	4-99
Figure 4-8	Lanfair Repeater Detail	4-101
Figure 4-9	Underground Telecommunication Line Detail	4-103
Figure 4-10	Lugo Substation Detail.....	4-105
Figure 4-11	Mohave Substation Detail	4-107
Figure 4-12	Eldorado Substation Detail	4-109
Figure 4-13	Typical Site Plan for the Fiber Optic Repeater Sites	4-111
Figure 4-14	Typical Elevation for the Fiber Optic Repeater Sites.....	4-112
Figure 4-15	Typical Single-circuit 500 kV Dead-End Tower.....	4-113
Figure 4-16	Typical Single-circuit 500 kV Suspension Tower.....	4-114
Figure 4-17	Typical Tubular Steel Pole.....	4-115
Figure 4-18	Use of a Body Extension to Raise a Tower	4-116
Figure 4-19	Use of Ground Wire Peak (GWP) and Body Modifications to Support OPGW Installation.....	4-117
Figure 4-20	Typical Subtransmission Structures.....	4-118
Figure 4-21	Typical Telecommunication Duct Bank.....	4-119
Figure 4-22	Typical Manhole.....	4-120
Figure 4-23	Typical Mid-line Series Capacitor Layout.....	4-121
Figure 4-24	Typical Mid-line Series Capacitor Profile	4-122
Figure 5.1-1	Devers–Red Bluff 500 kV Mid-Line Capacitor	5-30
Figure 5.1-2	Viewpoint Locations	5-31
Figure 5.1-3	BLM Visual Resource Management Classes	5-38
Figure 5.7-1	Geological Formations in the Proposed Project Area	5-194
Figure 5.7-2	Active and Potentially Active Faults in the Proposed Project Area.....	5-203
Figure 5.11-1	Primary Land Jurisdictions Along the Proposed Project.....	5-264
Figure 5.15-1	Public Services within the Vicinity of the Proposed Project.....	5-315
Figure 5.16-1	Recreational Facilities Within 1 Mile of the Proposed Project	5-327
Figure 5.17-1	Roadway Network in the Vicinity of the Proposed Project	5-353
Figure 5.20-1	Fire Risk	5-400
Figure 5.21-1	Cumulative Projects within 5 Miles of the Proposed Project	5-425

Appendices

Appendix A	List of Preparers
Appendix B	Native American Consultation
Appendix C	Air Quality-Greenhouse Gas Emissions Data
Appendix D	California Local Regulations