STATE OF CALIFORNIA

Energy Resources Conservation
and Development Commission

Application for Certification for the IVANPAH SOLAR ELECTRIC GENERATING SYSTEM	))))	Docket No. 07-AFC-5

ATTACHMENT A

APPLICANT'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

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PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

IVANPAH SOLAR PROJECT

UNCONTESTED ISSUES

(Docket No. 07-AFC-5)

I. AIR QUALITY

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The proposed Ivanpah Solar Project is located within the jurisdiction of the Mojave Desert Air Quality Management District ("MDAQMD").
2. The District is classified as non-attainment for the California ozone ambient air quality standards.
3. CARB has designated MDAQMD as moderate ozone nonattainment based on a 110 ppb ozone design value, and the eastern portion of San Bernardino County, which includes the Project site, has been designated by the U.S. Environmental Protection Agency ("USEPA") as "unclassified/attainment" for the federal one-hour and eight-hour ozone standards.
4. San Bernardino County is nonattainment for the federal PM 10 standard, and MDAQMD is a nonattainment area for the state PM 10 standard.
5. MDAQMD meets applicable standards for all other criteria pollutants.
6. The only emission unit of the Ivanpah Solar Project is its boilers.
7. MDAQMD has determined that the emission unit of the Ivanpah Solar Project is not subject to best available control technology ("BACT").
8. MDAQMD has determined that the Ivanpah Solar Project is not subject to District offset requirements.
9. The District has issued an amended Final Determination of Compliance that finds the Ivanpah Solar Project will comply with all applicable District rules for Project operation.
10. The Commission has properly considered the analysis and comments of the MDAQMD in an area in which the MDAQMD has demonstrated expertise and jurisdiction.
11. The record establishes that Commission Staff has independently evaluated the MDAQMD analysis and determined that it is accurate.
12. The Ivanpah Solar Project's construction-related impacts are temporary and short-term in nature and are mitigated to below a level of significance by measures identified in the Conditions of Certification.
13. The record contains an adequate analysis of the Ivanpah Solar Project's contributions to cumulative air quality impacts.

14. The Project has no significant impacts on local air quality.
15. The Project's air impacts analysis confirms that there will be no significant local air quality effects.
16. Emissions from the Project are so low that MDAQMD'S BACT requirements are not triggered.
17. The Health Risk Assessment performed for the Project confirms that there are no adverse local air quality impacts.
18. The Project will have no significant impacts on regional air quality.
19. Implementation of the Conditions of Certification listed below ensures that the Ivanpah Solar Project will not result in any significant direct, indirect, or cumulative impacts to air quality.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Air Quality and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Air Quality as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Air Quality as identified in the pertinent portions of this Decision.

II. COMPLIANCE / GENERAL CONDITIONS

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Requirements contained in the Compliance Plan and in the specific Conditions of Certification are intended to be implemented in conjunction with one another.

CONCLUSIONS OF LAW

1. The Commission concludes that the compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code Section 25532.
2. The Commission concludes that the Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Ivanpah Solar Project will be designed, constructed, operated and closed in conformity with applicable law.
3. The Commission adopts the Compliance Monitoring and Closure Plan as part of this Decision.
4. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of General Conditions of Compliance and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.
5. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to General Conditions of Compliance as identified in the pertinent portions of this Decision.
6. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to General Conditions of Compliance as identified in the pertinent portions of this Decision.

III. FACILITY DESIGN

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project is currently in the preliminary design stage.
2. The evidentiary record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards.
3. The Conditions of Certification set forth below provide, in part, that qualified personnel will perform design review, plan checking, and field inspections of the proposed Project.
4. The Conditions of Certification set forth below are necessary to ensure that the Project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality as well as public health and safety.
5. The **GENERAL CONDITIONS,** included in a separate section of this Decision, establish requirements to be followed in the event of facility closure.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Facility Design and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Facility Design as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Facility Design as identified in the pertinent portions of this Decision.

IV. GEOLOGY, PALEONTOLOGY AND MINERALS

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Project is currently not used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals.

2. Sand and gravel resources are present at the site and could potentially be a source of salable resources; however, such materials are present throughout the regional area such that the Ivanpah Solar Project would not have a significant CEQA or NEPA impact on the availability of such resources.
3. Ground shaking is the main geologic hazard to the Ivanpah Solar Project.
4. The Ivanpah Solar Project is not located within a highly active seismic region, and no active faults are shown on published maps as crossing the boundary of construction for the Ivanpah Solar Project.
5. The possibility of geologic hazards affecting the operation of the Project during its practical design life is low.
6. The potential of surface rupture on a fault at the energy facility footprint is considered to be very low, since no faults are known to have ruptured the ground surface at the Project location.
7. Potential geologic hazards to the Project are effectively mitigated by standard engineering design and facility design measures as specified in this Decision.

8. Liquefaction, lateral spreading, dynamic compaction, hydrocompaction, ground subsidence, landslides, flooding, tsunamis, and seiches pose low or negligible Project risks.
9. No geologic resources of recreational or scientific value were identified in the vicinity of the Project site. There is no evidence of existing or potential geological or mineralogical resources at the Project site or along the linear alignments.
10. The Project owner will implement several mitigation measures to avoid impacts to paleontological resources including worker education, preparing a Paleontological Monitoring and Mitigation Plan, and having a Paleontologic Resource Specialist on-site during excavation or ground disturbance.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Geology, Paleontology and Minerals and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Geology, Paleontology and Minerals as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Geology, Paleontology and Minerals as identified in the pertinent portions of this Decision.

V. HAZARDOUS MATERIALS MANAGEMENT

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project will use hazardous materials during construction, including gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner.
2. The Ivanpah Solar Project will store and use sulfuric acid during operation.
3. The sulfuric acid that will be used at the Ivanpah Solar Project does not contain more than 100 pounds of sulfur trioxide or meet the definition of oleum.

4. The sulfuric acid that will be used at the Ivanpah Solar Project will not be stored in a container with flammable hydrocarbons.
5. Compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of sulfuric acid will reduce potential risks of accidental release to insignificant levels.
6. The Ivanpah Solar Project will use natural gas during operations.
7. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.
8. Potential impacts from the other hazardous substances used on-site are not considered significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.
9. There is no possibility of cumulative impacts originating from simultaneous releases of hazardous materials from the Ivanpah Solar Project because of the small amounts of hazardous materials to be stored at the facility.
10. No other existing or planned projects are close enough to the Ivanpah Solar Project to create a credible possibility of cumulative impacts from a simultaneous release of hazardous materials.
11. The analysis of record considered potential effects of a release of hazardous materials upon minority/low income populations and sensitive groups and found no disproportionately high and adverse impact on the minority and low-income populations.

CONCLUSIONS OF LAW

1. The Commission concludes that the use of sulfuric acid at the Ivanpah Solar Project is not subject to the RMP requirements under CalARP.
2. The Commission concludes that the storage, use, and transportation of hazardous materials associated with the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts.
3. The Commission concludes that the potential environmental justice impacts of the Project have been comprehensively analyzed and the evidence establishes that the Ivanpah Solar Project will not have a disproportionately high or adverse impact upon any minority or low-income populations.

4. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Hazardous Materials Management and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

5. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws,

ordinances, regulations, and standards relating to Hazardous Materials Management as identified in the pertinent portions of this Decision.

6. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Hazardous Materials Management as identified in the pertinent portions of this Decision.

VI. NOISE

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Construction and operation of the Ivanpah Solar Project will not significantly increase noise levels above existing ambient levels in the surrounding area.
2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible.
3. Operational noise from the Ivanpah Solar Project is predicted not to exceed 30 dBA in Primm, Nevada.
4. Operational noise of the Ivanpah Solar Project is predicted to be less than the County's residential daytime standard of 55 dBA at the golf course.
5. The project owner will implement measures to protect workers from injury if excessive noise levels should occur during either construction or operation.
6. The Ivanpah Solar Project will not create ground or air borne vibrations which will cause significant off-site impacts.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Noise and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Noise as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or

cumulative adverse public health and safety impacts relating to Noise as identified in the pertinent portions of this Decision.

VII. POWERPLANT EFFICIENCY

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project will collectively provide approximately 370 MW on a nominal basis or 392 MW on a gross basis of renewable, solar electrical power.

2. The evidentiary record demonstrates that the Ivanpah Solar Project will decrease reliance on fossil fuel, and will increase reliance on renewable energy resources.

3. The Ivanpah Solar Project will not create adverse effects upon local and regional energy supplies or resources.

4. The Ivanpah Solar Project will not deplete energy supply or capacity.

5. The Ivanpah Solar Project will not result in wasteful, inefficient and unnecessary consumption of fuel or energy.

CONCLUSION OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Powerplant Efficiency and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. No Federal, State, or local laws, ordinances, regulations, or standards apply to the efficiency of the Ivanpah Solar Project.
3. No Conditions of Certification are required for this topic area.

VIII. POWERPLANT RELIABILITY

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project is expected to achieve an equivalent availability factor of 92 to 98 percent.
2. Implementation of Quality Assurance/Quality Control (QA/QC) programs during design, procurement, construction, and operation of the plant, as well as adequate maintenance and repair of the equipment and systems, will ensure the Project is adequately reliable.
3. Appropriate Conditions of Certification included in the **FACILITY DESIGN** portion of this Decision ensure implementation of the QA/QC programs and conformance with seismic design criteria.
4. The Project's fuel and water supply will be reliable.
5. The Project will meet or exceed industry norms for reliability, including reliability during seismic events, and will not degrade the overall electrical system.

CONCLUSION OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Powerplant Reliability and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.
2. No federal, state, or local/county laws, ordinances, regulations and standards apply to the reliability of the Ivanpah Solar Project.
3. No Conditions of Certification are required for this topic area.

IX. PROJECT DESCRIPTION

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project will be located in the Ivanpah Valley, approximately 4.5 miles southwest of Primm, NV.

2. The Ivanpah Solar Project will consist of three co-located independent solar thermal electric generating facilities: Ivanpah 1, Ivanpah 2, and Ivanpah 3. The combined nominal net rating of the three facilities will be nominal 370 megawatts ("MW") or 392 MW on a gross basis.

3. The Ivanpah Solar Project will be owned by three LLCs: Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC. Ivanpah 2 will be owned by Solar Partners I, Ivanpah 1 will be owned by Solar Partners II, and Ivanpah 3 will be owned by Solar Partners VIII. Shared Facilities will be held by the three projects companies as tenants in common.

4. Each of the three facilities will consist of heliostat fields surrounding a power block. The power block will be located in the approximate center of the heliostat array.

5. Ivanpah 2 and 3 will have heliostat arrays consisting of approximately 60,000 heliostats. Ivanpah 1 will have about 53,500 heliostats.

6. The power block will include a single centralized solar power tower ("SPT"), a receiver boiler, a steam turbine generator (STG) set, air-cooled condensers, and other auxiliary systems.

7. The SPT is a metal structure designed specifically to support the boiler and efficiently move high-quality steam through a STG at its base. The SPT will be about 120 meters high (approximately 393 feet). The receiving boiler (which sits on top of the support structure) will be about 20 meters tall (approximately 66 feet) including the added height for upper steam drum and protective ceramic insulation panels. Overall, the tower height will be 140 meters (approximately 459 feet).

8. The height of the SPT allows heliostats from significant distances to accurately reflect sunlight to the receiving boiler.

9. The receiving boiler is a traditional high-efficiency boiler positioned on top of the SPT. The boiler converts the concentrated energy of the sun reflected from the heliostats into superheated steam. The boiler's tubes are coated with a material that maximizes energy absorbance.

10. The boiler has steam generation, superheating, and reheating sections and is designed to generate superheated steam at a pressure of 160 bars (approximately 2400 psig) and a temperature of 550 degrees Celsius (°C) (1000 degrees F).

11. The heliostats will automatically track the sun during the day and reflect the solar energy to the boiler on top of the SPT.

12. Each heliostat consists of two mirrors mounted on a single pylon, along with a computer-programmed aiming control system that directs the motion of the heliostat to track the movement of the sun. Each mirror is 7.2 feet high by 10.5 feet wide (2.20 meters by 3.20 meters) yielding a reflecting surface of 75.6 square feet (7.04 square meters).

13. The aiming control system and the layout of solar fields are optimally designed to focus sunlight on to the SPT in a manner that maximizes steam output. The aiming control system uses optimization software to instruct the solar field controller where each heliostat should aim to maximize solar energy collection and output.

14. The aiming control system factors in the differences between heliostats with respect to their tracking accuracy, the intensity of the beam they reflect (both of these factors depend mainly on the distance to the receiver), the shape of the beam, and other relevant aspects to compute the optimal aiming policy.

15. The optimization software will prevent the mirrors from being aimed toward the freeway or the golf club at an angle that will reflect sunlight near the ground surface.

16. The power block system proposed for this Project is the same as that used in traditional power-generation facilities to convert steam to electricity. The power block consists of a conventional Rankine-cycle STG with a reheat cycle, and auxiliary functions of heat rejection, water treatment, water disposal, and grid interconnection capabilities.

17. The integration of high-efficiency pre-existing turbine technologies provides performance warranties and enables the system to maximize thermal-to-electricity efficiencies.

18. The Ivanpah Solar Project will implement dry cooling and use air to cool the steam to minimize water use.

19. Each plant will have a backup diesel generator to provide power to operate boiler recirculation pumps, firewater pumps, and other small consumers in the event of an emergency when power might otherwise be unavailable.

20. The Project includes associated transmission, gas supply, and water supply lines.

21. Construction and operation of the Ivanpah Solar Project will occur in three project phases: Ivanpah 1 (nominal 120 MW), Ivanpah 2 (nominal 125 MW), and Ivanpah 3 (nominal 125 MW).

22. The Ivanpah Solar Project will affect approximately 3582 acres, inclusive of 90.4 acres of land usage by Southern California Edison for the El Dorado-Ivanpah Transmission Project.

23. The Project will contain a Construction Logistics Area ("CLA"), located in the common area between Ivanpah 1 and 2, comprised of approximately 377.5 acres. This area will be used during construction for staging, laydown, and temporary offices.

24. At least 50 acres of the CLA will be completely avoided, and up to 66 acres utilized as nurseries for succulents and plants. Portions of the 66 acres not utilized as nurseries will be avoided all together.

25. The Ivanpah Solar Project will implement a Low-Impact Development ("LID") approach. This approach focuses on preserving undeveloped land, minimizing stormwater generation, and preserving or mimicking natural hydrology.

26. The Project and its objectives are adequately described by the relevant documents contained in the record.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Project Description and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. No Conditions of Certification are required for this topic area.

X. PUBLIC HEALTH

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Risk assessment analyses for the Ivanpah Solar Project conducted by both Staff and Applicant demonstrate that there are no significant increases in human health risks associated with the Project.

2. The maximum individual excess lifetime cancer risk for emissions during operation of the Project is 0.013 in one million, well below the thresholds used by air agencies to define an insignificant cancer risk.

3. Using a very conservative methodology, conservative assumptions, and conservative comparison thresholds designed to substantially overstate human health risks, the risk assessment for the Ivanpah Solar Project conducted by Staff nevertheless confirms that there will be no significant health impacts from emissions at the Project.

4. The emissions from the Project will not result in other systemic health effects, such as non-cancer risks to the respiratory system or other organ systems

5. The Project will not result in any significant cancer risks. The maximum individual excess lifetime cancer risk for emissions during operation of the facility is 0.013 in one million, which is well below the thresholds used by air agencies to define an insignificant cancer risk.

6. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

7. Project emissions do not pose a significant direct, indirect or cumulative adverse public health risk.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Public Health and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Public Health as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Public Health as identified in the pertinent portions of this Decision.

XI. SOCIOECONOMICS

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The construction period for the Ivanpah Solar Project will last approximately 48 months.

2. Total construction personnel requirements will be approximately 6,654 person-months for Ivanpah 1, 6,584 person-months for Ivanpah 2, and 9,496 person-months for Ivanpah 3.

3. The estimated value of materials and supplies that will be purchased locally will be approximately $77 million.

4. Construction of the Project is expected to generate approximately $6 million in local sales tax revenue.

5. The Ivanpah Solar Project will draw upon the local labor force for construction and operation workers.

6. Sufficient housing is available in nearby Clark County, Nevada to accommodate workers for the Ivanpah Solar Project.

7. Existing local police, fire and medical services are adequate to accommodate the Ivanpah Solar Project.

8. The potential environmental justice impacts of the project have been comprehensively analyzed and the evidence establishes that the Ivanpah Solar Project will not have a disproportionately high or adverse impact upon any minority or low-income populations.

9. The weight of the evidence of record establishes that property values are not likely to decline due to the Ivanpah Solar Project.

CONCLUSIONS OF LAW

1. The Commission concludes that the potential environmental justice impacts of the project have been comprehensively analyzed and the evidence establishes that the Ivanpah Solar Project will not have a disproportionately high or adverse impact upon any minority or low-income populations.

2. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Socioeconomics and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

3. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Socioeconomics as identified in the pertinent portions of this Decision.
4. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Socioeconomics as identified in the pertinent portions of this Decision.

XII. SOIL AND WATER RESOURCES

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project's low impact development ("LID") design implements a stormwater control design that promotes sheet flow and greater infiltration, rather than channelization and concentration of stormwaters

2. The LID design will help maintain natural drainage patterns and features. The LID design impact reduces potential impacts to soil resources by using measures such as taking advantage of the natural permeability of the alluvium at the site, by minimizing

compaction and decompacting soils where necessary, and implementing a revegetation and rehabilitation program to accelerate the return of vegetation to temporarily disturbed areas

3. The Project will not substantially alter the existing drainage pattern of the site or surrounding area.

4. The Project will not create or contribute to runoff water that would exceed capacity of existing or planned storm water drainage systems.

5. The Project will not substantially degrade water quality**.**

6. During project operations, the Ivanpah Solar Project is estimated to require less than 100 acre-feet per year (AFY) of water.

7. The Ivanpah Solar Project will pump groundwater from the Ivanpah Valley Groundwater Basin.

8. Groundwater recharge estimates for the Ivanpah Valley watershed was estimated by Staff to be between 5,223, to 6,538 acre-feet per year.

9. Even with current pumping, Project pumping, and foreseeable future project pumping, there is still a net gain in recharge to the Ivanpah Valley Groundwater Basin.

10. The Project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

11. The analyses conducted confirm that the Project will not cause significant impacts to groundwater in the Ivanpah Valley Groundwater Basin.

12. The analyses conducted confirm that the Project's use of groundwater will not cause significant impacts to either surface water or groundwater resources.

13. The analyses conducted confirm that there will be no significant adverse environmental impacts associated with-water use during Project construction.

14. The analyses conducted confirm that the Project will not significantly impact groundwater uses at a local or cumulative level.

15. The Project will not result in substantial soil erosion or loss of topsoil.

16. Rehabilitation and revegetation will be conducted as soon as practical upon completion of the construction.

17. The Applicant will be required to prepare a Drainage, Erosion, and Sediment Control Plan.

18. The Drainage, Erosion, and Sediment Control Plan will reduce or eliminate soil loss due to erosion during construction and operation.

19. The Drainage, Erosion, and Sediment Control Plan, in combination with Applicant's Stormwater Pollution Prevention Plan ("SWPPP"), will ensure that any impacts to soils from Project operations are minimized or avoided.

20. Through the application of BMPs, the impact to soil and water resources from storm water drainage during construction will be reduced to a level that is less than significant.

21. Construction of the Ivanpah Solar Project will have no impact on and will not be adversely impacted by flows from the occurrence of a 100-year flood.

22. The Applicant will be required to install metering equipment and reporting of water use by the Project.

23. The Applicant will be required to ensure no significant water or soil related impacts will result from sanitary wastewater disposal.

24. There are no significant cumulative impacts in the site vicinity to soil and water resources that will result from operation of the Ivanpah Solar Project.

25. The Ivanpah Solar Project will not result in any unmitigated, significant project-specific or cumulative adverse impacts to Soil or Water Resources.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Soil and Water Resources and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Soil and Water Resources as identified in the pertinent portions of this Decision.

3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Soil and Water Resources as identified in the pertinent portions of this Decision.

4. The Commission concludes that the Project will not violate any water quality standards or waste discharge requirements.

XIII. TRANSMISSION LINE SAFETY AND NUISSANCE

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project will deliver power from Ivanpah 1, 2 and 3 via three separate 115 kV transmission generation tie lines to each Project phase.

2. All three lines and related facilities would be designed, operated, and maintained in keeping with CPUC and SCE guidelines that ensure line safety and efficiency together with reliability and maintainability.

3. The evidentiary record includes analyses of potential impacts from the Ivanpah Solar Project's transmission line involving aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.

4. The available scientific evidence does not establish that EMF fields pose a significant health hazard to humans.

5. There are no residences along the route of the Project's generation tie lines or the SCE transmission lines.

6. The electric and magnetic fields generated by the Project's transmission line will be managed to the extent the CPUC considers appropriate, based on available health effects information.

7. The SCE El Dorado-Ivanpah transmission line will incorporate standard EMF-reducing measures established by the CPUC and implemented by SCE.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Transmission Line Safety and Nuisance and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Transmission Line Safety and Nuisance as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or

cumulative adverse public health and safety impacts relating to Transmission Line Safety and Nuisance as identified in the pertinent portions of this Decision.

XIV. TRANSMISSION SYSTEM ENGINEERING

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The California Independent System Operator is the entity legally designated to analyze downstream non-environmental transmission system impacts beyond the first point of a project's interconnection with the integrated system.

2. Southern California Edison Company performed a Detailed Facilities Study to analyze the potential reliability and congestion impacts likely to occur when the Ivanpah Solar Project interconnects to the grid.

3. The Ivanpah Solar Project will deliver power from Ivanpah 1, 2 and 3 via three separate 115 kV transmission generation tie lines.

4. Each transmission generation tie line will connect to its own 115 kV switchyard.

5. Each 115 kV switchyard will then connect to a substation, which will be located on an 850 feet by 850 feet parcel, located on 16 acres between Ivanpah 1 and 2.

6. The substation located on the Project site would connect the Project to the existing El Dorado-Baker-Cool Water Dunn siding-Mountain Pass 115 kV line owned by Southern California Edison.

7. The El Dorado-Baker-Cool Water Dunn siding-Mountain Pass 115 kV line will connect to an SCE owned 220 kV substation near the Nevada border.

8. The record includes a System Impact Study (SIS) which analyzes potential reliability and congestion impacts that could occur when the Ivanpah Solar Project interconnects to the grid.

9. To accommodate the Ivanpah Solar Project and five other planned renewable energy generation projects in the region, the California Independent System Operator has identified 36 miles of transmission line upgrades from 115 kV to double circuit 220 kV transmission lines.

10. Southern California Edison is developing a project proposal for transmission upgrades triggered by Ivanpah Solar Project and five other planned renewable energy generation projects.

11. The transmission outlet for the Ivanpah Solar Project is safe and reliable.

CONCLUSIONS OF LAW

1. The Commission concludes that the Southern California Edison project proposal for 36 miles of transmission line upgrades to serve Ivanpah Solar Project and five other renewable energy projects is subject to California Environmental Quality Act review by the California Public Utilities Commission.

2. The Commission concludes that the CPUC will also determine compliance with other laws ordinances regulations and standards for the Southern California Edison project proposal.

3. The Commission concludes that the proposed interconnection facilities are in accordance with NESC standards, GO-95 Rules and good utility practices, and are acceptable according to engineering laws, ordinances, regulations and standards contained in this Decision.

4. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Transmission System Engineering and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

5. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Transmission System Engineering as identified in the pertinent portions of this Decision.
6. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Transmission System Engineering as identified in the pertinent portions of this Decision.

XV. WASTE MANAGEMENT

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Project will generate hazardous and nonhazardous wastes during construction and operation.

2. During facility operation, the primary waste generated will be nonhazardous solid waste. The majority of nonhazardous waste will be sanitary sewer sludge, from the small sewage treatment unit, that will be shipped offsite to landfill and water treatment filters (granular activated carbon [GAC] vessels), mixed bed vessels, and the de-ionization trailer from the onsite water treatment unit.
3. Nonhazardous wastes that cannot be recycled will be deposited at a Class III landfill.
4. Hazardous waste generated at the Ivanpah Solar Project will be stored at that facility for less than 90 days.
5. Hazardous wastes will be transported from the Ivanpah Solar Project by a licensed hazardous waste transporter to a TSD facility.
6. Disposal of Project wastes will not result in any significant direct or cumulative impacts to existing waste disposal facilities.
7. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the Soil and Water Resources section of this Decision.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Waste Management and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Waste Management as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Waste Management as identified in the pertinent portions of this Decision.

XVI. WORKER SAFETY AND FIRE PROTECTION

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. To protect workers from job-related injuries and illnesses, the Project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the Project.
2. The Project will employ an on-site professional Safety Monitor during construction and operation.
3. The Ivanpah Solar Project will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.
4. The San Bernardino County Fire Department is adequately equipped and will provide fire protection and emergency response services to the Project.
5. Existing fire and emergency service resources are adequate to meet Project needs.
6. The Ivanpah Solar Project will not cause cumulative adverse impacts upon the fire and emergency response capabilities of the San Bernardino County Fire Department.
7. The Project owner will maintain an automatic defibrillator on-site to provide immediate response in the event of a medical emergency.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Worker Safety and Fire Protection and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Worker Safety and Fire Protection as identified in the pertinent portions of this Decision.

   The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Worker Safety and Fire Protection as identified in the pertinent portions of this Decision.

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

IVANPAH SOLAR PROJECT

CONTESTED ISSUES

(Docket No. 07-AFC-5)

I. CEQA OVERRIDE

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Public Resources Code Section 25500 gives the Commission the authority to issue a certificate that preempts all local laws.

2. The Commission has the authority under Public Resources Code Section 21080.5 to approve a project notwithstanding potentially significant environmental effects through a statement of overriding considerations.

3. The FSA alleges that the Project will have a potentially significant adverse effect on visual resources, and a potentially significant cumulative effect on visual resources and traffic.

4. Notwithstanding these FSA conclusions, however, the record supports findings of no significant environmental effects of any kind, in general, and in particular, no significant effects from the project as mitigated for (1) Land Use on a cumulative basis, as the project will not combine with other reasonably foreseeable projects, as discussed in the Land Use section of Applicant's Opening Brief, (2) Traffic and Transportation on a cumulative basis related to the temporary, short-term, construction-related traffic impact on Fridays only on Interstate 15, as discussed in the Traffic section of Applicant's Opening Brief, or (3) Visual Resources on a direct, indirect, or cumulative basis, given that the Project will not be clearly visible or dominant from the Key Observation Points at issue and the viewer sensitivity is moderate to low, as discussed in the Visual Resource section.

5. Assuming for the sake of argument, that the Commission found the Project could have a potentially significant environmental effect, the Commission has the authority under Public Resources Code Section 21080.5 to approve the Project notwithstanding any potentially significant environmental effect.

6. Prior to approving a project for which the Commission's certified regulatory program has identified one or more significant environmental impacts, the Commission must make

one or more of the following findings, accompanied by a brief explanation of the rationale, pursuant to Section 15091 of the CEQA Guidelines, for each identified significant impact:

- Changes or alterations have been required in, or incorporated into, such project which avoid or substantially lessen the significant environmental effect as identified in the final environmental impact report.
- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency, or can and should be adopted by such other agency.
- Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

7. Section 15092 of the CEQA Guidelines states that after consideration of an EIR, and in conjunction with the Section 15091 findings identified above, the lead agency may decide whether or how to approve or carry out the project. The lead agency may approve a project with unavoidable adverse environmental effects when specific economic, legal, social, technological, or other considerations outweigh those effects. Section 15093 requires the lead agency to document and substantiate any such determination in a "statement of overriding considerations" as a part of the record.
8. Changes have been incorporated into the Project that substantially lessen the significant environmental effects identified in the FSA.
9. The FSA asserts that there is a significant cumulative traffic impact on northbound I-15 traffic on Fridays only during the short-term, temporary peak construction. To substantially lessen this impact, the Project owner will, among other measures set forth in the Conditions of Certification, implement a Transportation Control Plan (TCP) to address workers' trips on Friday afternoons and minimize impacts to northbound I-15 traffic.
10. The specific TCP elements should include provisions for staggering shifts and worker departure times, buses for workers, and provisions for monitoring.
11. With the implementation of appropriate TCP measures and other measures set forth in the Conditions of Certification, the cumulative short-term impact on I-15 traffic will be reduced to a less-than-significant level.
12. The FSA asserts that the Project will have a significant impact on visual resources from select KOPs including I-15, the Mojave National Preserve and the Stateline Wilderness Area. To substantially lessen this impact, the Applicant will incorporate the Biological

Mitigation Proposal, also known as "Mitigated Ivanpah 3." This Biological Mitigation Proposal reduces the Project footprint, reduces the number of solar towers from seven to three and thereby reduces the Project's impacts on visual resources, particularly the impacts on views from the CEC's KOPs 9 (north of Ivanpah 3) and 10 (Benson Mine vicinity).

13. The potential for receiver unit glare impacts to travelers on I-15 will be substantially reduced because the number of solar towers topped by receiver units will be reduced from seven to three as a result of Applicant's Biological Mitigation Proposal.

14. The reduction of the area occupied by Ivanpah 3 will result in the relocation of the northern boundary of Ivanpah 3 to a point farther south, which increases the distance between the Ivanpah Solar Project and the Stateline Wilderness Area to 1.57 miles at its closest point. The closest power tower will be more than two miles from the State Wilderness Area boundary. With the reduction in the number of solar towers at Ivanpah 3 from five to one, the area from which the Project has the potential to be visible will be significantly less than under the original design.

15. The effect of the Project on views from KOP 9 and 10, which were less than significant as demonstrated in the Applicant's brief, will be even less than before based on the following facts: the northern edge of Ivanpah 3 under the Mitigated Ivanpah 3 design will be farther from KOP 9; the Project will occupy a smaller area; the Project, as mitigated, will have about 24,500 fewer heliostats; and the total number of solar towers and associated receiver units are reduced from seven to three.

16. The potential impacts to Visual Resources are lessened to a less than significant level as a result of the following aspects of the Biological Mitigation Proposal: a reduced Project footprint; the reduction of the Ivanpah 3 towers from five towers to one; the beneficial effects on travelers along I-15 associated with fewer towers and a reduced footprint, and the increased distance between the Project, the Stateline Wilderness Area and the Mojave National Preserve.

17. The FSA asserts that there will be a cumulative visual impact within the Project viewshed. To substantially lessen this impact, the Applicant will incorporate the Biological Mitigation Proposal.

18. The Biological Mitigation Proposal will reduce the Project footprint, reduce the number of heliostats by 24,000 and reduce the number of towers from seven to three.

19. The geographic boundary of cumulative analysis is the area in which the effects of the Project can combine with the effects of other closely related past, present, and reasonably foreseeable probable future projects. In the case of Visual Resources, the geographic

scope of cumulative impacts should be limited to the natural boundaries of the resource, the viewshed.

20. All of these changes will be incorporated into the Project and will combine to result in cumulative visual impacts that are less than significant.

21. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

22. Apart from the above described mitigation measures that will be incorporated into the Project, there are no other mitigation measures that have been proposed to mitigate the three significant impacts described in the FSA.

23. CEQA requires the consideration of a reasonable range of alternatives to the project that would feasibly obtain most of the basic project objectives, but also avoid or substantially lessen any significant effects of the project. Furthermore, CEQA provides that alternatives that (1) are infeasible; (2) fail to avoid or substantially lessen any of the significant effects of the project; or (3) fail to meet most of the basic project objectives are not within the range of reasonable alternatives and may be eliminated from detailed consideration.

24. The Commission has found that alternatives that (1) are infeasible; (2) fail to avoid or substantially lessen any of the significant effects of the project; or (3) fail to meet most of the basic project objectives are not within the range of reasonable alternatives, and on that basis can be eliminated from further consideration.

25. From an economic and social perspective, the Ivanpah Solar Project will contribute significantly to the improvement of the environment, in furtherance of California's greenhouse gas emission reduction and Renewable Portfolio Standard goals.

26. According to the International Energy Agency, to stabilize CO_2 in the atmosphere at 450 ppm - the consensus target adopted by the scientific community – the equivalent of 4,900 gigawatts of new carbon free power plants must be built over the next 20 years.

27. Addressing climate change will require renewables at scale.

28. Governor Schwarzenegger recently signed an Executive Order requiring California's utilities to obtain one third of their energy from renewable resources.

29. For California to meet its goals, it must rely on central station solar power and distributed PV and many other resources.

30. The Ivanpah Solar Project and other central-station solar power utilize scheduling coordinators to forecast operations, including weather impacts, to ensure that the grid operator is constantly informed of facility's output, and can maintain grid reliability.

31. Solar-thermal generation projects like the Ivanpah Solar Project are not as volatile as other resources or technologies due to thermal mass, possible storage capabilities, and if necessary, supplemental gas firing.

32. As a central station plant, the Ivanpah Solar Project provides the transmission system operator with flexibility to move the power where needed on an integrated utility system.

33. Central station plants, including solar thermal plants, are necessary for reliable system operation for many reasons, including the contribution of real power (in MWH) and reactive power, voltage and frequency support, energy reserves, and other such requirements.

34. As the penetration of variable (or "intermittent") resources increases in the electrical system, reliability can only be maintained either through multiple renewable technologies in multiple geographic locations reinforcing each other, or through conventional peaker plants, often located in low income areas where environmental justice is a concern.

35. The Ivanpah Solar Project provides reliability benefits by load following and by being available on peak. The Project's generation is "peak coincident," delivering power when large air conditioners and other loads require additional generation resources.

36. The Ivanpah Solar Project will avoid more than 13 million tons of CO_2 emissions over the lifecycle of the Project, as well as 85 percent of the air emissions from an equally-sized natural gas plant.

37. Electricity produced by the Ivanpah Solar Project will displace fossil-fuel derived power and reduce the need to operate peaking power plants.

38. The plants will employ dry-cooling, which will reduce water usage by 90 percent, allowing the Ivanpah Solar Project to use approximately 30 times less water than competing technologies using wet cooling.

39. The Low Impact Design utilizes BrightSource's proprietary hanging heliostats, which minimize the need for grading and concrete pads required for competing technologies.

40. The BrightSource Energy Luz Power Tower 550 (LPT 550) technology has been proven at the demonstration facility in Israel. This technology is reliably producing the world's highest temperature steam for solar energy, and has been validated by an independent engineering firm.

41. The Ivanpah Solar Project will provide substantial economic benefits during both construction and operation of the Project.

CONCLUSIONS OF LAW

1. Changes have been incorporated into the Project that substantially lessen all of the potentially significant environmental effects identified in the FSA to a level of less than significant.

2. The Commission concludes that the Project as mitigated will not have significant adverse environmental effects and thus should be constructed and operated.

3. Pursuant to Section 15092 of the CEQA Guidelines and in conjunction with the Section 15091 findings identified above, the Commission has the authority to approve a project with unavoidable adverse environmental effects when specific economic, legal, social, technological, or other considerations outweigh those effects. Section 15093 of the CEQA Guidelines requires the Commission to document and substantiate any such determination in a "statement of overriding considerations" as a part of the record as the Commission has done in this Decision.

4. If any of the effects had been found to be significant and unmitigable, the Commission shall exercise its authority under Public Resources Code Section 21080.5 to approve the Project notwithstanding any potentially significant environmental effect.

5. Pursuant to Section 15091 of the CEQA Guidelines, changes or alterations have been required in, or incorporated into, the Ivanpah Solar Project which avoid or substantially lessen the significant environmental effects associated with the Project, as identified in the final environmental impact report.

6. Pursuant to Section 15091 of the CEQA Guidelines, the Commission considered specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, which make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

7. Apart from the above described mitigation measures that will be incorporated into the Project, there are no other mitigation measures that have been proposed to mitigate the significant impacts alleged in the FSA.

8. All of the Ivanpah Solar Project's potential adverse environmental impacts will be mitigated to a level below the threshold of significance. Where significant impacts are alleged, no feasible alternatives have been identified that can avoid or significantly reduce the impacts of the Ivanpah Solar Project in these areas.

9. The Ivanpah Solar Project will have, among others, the following benefits: avoidance of more than 13 million tons of CO_2 emissions over the lifecycle of the Project; displacement of fossil-fuel derived power; reduced reliance on peaking power plants; and economic benefits in the form of job creation and tax revenues, during the construction and operation of the Project.

10. The Commission concludes that the weight of the evidence conclusively establishes that the benefits of the Ivanpah Solar Project, outweigh any unavoidable environmental impacts of the Project. Therefore, the Commission concludes by the weight of the evidence of record that the Ivanpah Solar Project provides, on balance, a level of benefits sufficient to support findings of "overriding considerations."

II. ALTERNATIVES

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Key project objectives for the Ivanpah Solar Project include:

   - To safely and economically construct and operate a nominal 370-MW, solar generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities.

   - To demonstrate the technical and economic viability of BrightSource's technology in a commercial-scale project.

   - To locate the facility in areas of high solarity with ground slope of less than 5 percent.

- To minimize infrastructure needs and reduce environmental impacts by locating the plant near existing and planned infrastructure, including: CAISO transmission lines, a source of natural gas, and an adequate water supply.

- To avoid siting the plant in areas that are highly pristine or biologically sensitive (e.g., a Desert Wildlife Management Area).

- To locate the project consistent with existing land use plans. If on public land, to comply with the multiple use objectives of the Federal Land Policy and Management Act (FLPMA), which includes renewable energy development, and the objectives of the California Desert Conservation Area (CDCA) Resource Management Plan (RMP), which allows for solar energy development in some areas.

- To assist California in repositioning its generation asset portfolio to use more renewable energy in conformance with State Policy, including the policy objectives set forth in Senate Bill (SB) 1078 (California Renewable Portfolio Standard Program) and Assembly Bill (AB) 32 (California Global Warming Solutions Act of 2006).

- To comply with provisions of the power sales agreement that has been executed with PG&E and SCE.

- To qualify for and obtain federal stimulus benefits for the Project and for California under the 2009 American Recovery and Reinvestment Act (ARRA).

2. The FSA's Alternative's Analysis is extremely detailed and rigorous, and evaluated twenty-three (23) alternatives. Most of the alternatives were "eliminated from further consideration" after a full analysis illustrated that most of the Applicant's basic project objectives would not be met, impacts of the Project would not be avoided or minimized, or the alternative would cause significant environmental impacts in areas where impacts from the Ivanpah Solar Project are less than significant.

3. The evidence of record contains a sufficient analysis of a reasonable range of alternatives to the Ivanpah Solar Project, including alternative site locations, generation alternatives, and the No Project alternative.

4. The I-15 Alternative would be more visible to traffic along I-15, potential effects from light would also be the same or greater than the Project, the level of solar radiation would be greater for the I-15 alternative than for the Project, and the level of impacts to visual resources would be greater from this location than from the Project.

5. The I-15 Alternative would be located on the same quality of habitat for desert tortoises as the Project site habitat and would not reduce the impact to special-status plant species. The I-15 Alternative would have impacts on biological resources similar to or greater than that of the Project.

6. Assuming that the Ivanpah Solar Project would have a significant effect on visual resources and traffic, the I-15 Alternative is not a reasonable alternative to the Ivanpah Solar Project because it does not avoid or substantially lessen any of the alleged significant effects of the Project.

7. The Private Lands alternative would be located on private land with a few BLM parcels included, and would potentially require removal of houses or other structures.

8. To implement the Private Lands alternative, approximately 70 parcels of land would have to be acquired from multiple landowners.

9. It is infeasible, in terms of economic viability and burden on the Applicant, to acquire the land necessary for the Private Lands alternative, especially because the Applicant does not have the power of eminent domain.

10. The Private Lands alternative would require the conversion of active farmland to a non-agricultural use, which is a potentially significant impact to agriculture under CEQA.

11. None of the site location alternatives to the Ivanpah Solar Project offer a superior alternative in terms of feasibly meeting Project objectives or of reducing any significant potential environmental impacts.

12. The Private Lands alternative is not a reasonable alternative to the Ivanpah Solar Project as it is infeasible, and would result in significant impacts in an area where the Project's impacts are less than significant.

13. Substituting a PV technology for the Ivanpah Project would require a similar Project footprint, and would likely result in similar environmental impacts.

14. Rooftop PV and other distributed technologies can result in or exacerbate a variety of reliability problems, and require increased levels of operating reserves.

15. Alternative fuels and generation technologies are not capable of meeting Project objectives.

16. The No Project alternative would not avoid or substantially lessen potentially significant impacts as current uses of the Project; cattle grazing and off-road vehicle use would continue.

17. The No Project alternative would not avoid or substantially lessen potentially significant impacts, as the predictable and practical result of the No Project Alternative is the construction of other renewable or gas-fired power plants, or other development or uses allowed in BLM Class L or Class M lands.

18. The No Project alternative would not provide the following benefits: reduced greenhouse gas emissions, increased electric reliability, economic benefits, and lowered consumer costs for renewable resources.

CONCLUSIONS OF LAW

1. CEQA requires the consideration of a reasonable range of alternatives to a project that would feasibly obtain most of the basic project objectives, but also avoid or substantially lessen any significant effects of the project.

2. Alternatives that are infeasible, fail to avoid or substantially lessen any of the significant effects of the project, or fail to meet most of the basic project objectives are not within the range of reasonable alternatives, and may be eliminated from detailed consideration.

3. CEQA does not require that a specific number of alternatives be considered or proposed, or that every conceivable alternative be identified and analyzed.

4. CEQA does not require the examination of alternatives that are so speculative, contrary to law, or economically catastrophic as to exceed the realm of feasibility.

5. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

6. The Ivanpah Solar Project's potential adverse environmental impacts will be mitigated to a level below the threshold of significance; therefore, detailed analysis of the feasibility of the alternatives discussed in the record is not necessary, since no alternative could avoid or minimize potential impacts.

7. All of the Ivanpah Solar Project's potential adverse environmental impacts will be mitigated to a level below the threshold of significance. Where significant impacts are

alleged, no feasible alternatives have been identified that can avoid or significantly reduce the impacts of the Ivanpah Solar Project in these areas.

8. The No Project alternative is not preferred as the substantial benefits associated with the Ivanpah Solar Project would not be realized.

III. BIOLOGICAL RESOURCES

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project site is located on federal, previously disturbed and undeveloped land within the California Desert District managed by the Bureau of Land Management.

2. The Ivanpah Solar Project site is located in a Renewable Energy Transmission Initiative (RETI) zone that received favorable environmental and economic ratings.

3. The Ivanpah Solar Project site is not located in an area that RETI identified as either inappropriate for renewable energy development (a prohibited, or "black" area), nor one where policy would limit or restrict renewable energy development (a restricted, or "yellow" area).

4. Current uses of the Project site include cattle grazing (as part of the Clark Mountain Grazing Allotment), off-road vehicle racing, and as a transmission corridor.

5. Dirt roads and trails traverse the Project site. These roads and trails will be re-routed and improved by Applicant to ensure continued public access to the Clark Mountains and recreational areas.

6. The Project site is located adjacent to or near the following developments: the Primm Valley Golf Club; Buffalo Bill's Resort and Casino; Primm Valley Resort and Casino; Whiskey Pete's Hotel and Casino; three 500 kV transmission lines; the Kern River Natural Gas Line Corridor; I-15; abandoned mining establishments; Reliant's Bighorn Generating Station; an outdoor amusement park; and Primm Outlet Mall.

7. Public lands within the California Desert District are managed by the BLM in accordance with the California Desert Conservation Area Plan of 1980 ("CDCA"), as amended.

8. In the final EIS for the North and Eastern Mojave Desert Management ("NEMO") Plan amendment to the CDCA, the BLM designated the Ivanpah Solar Project site as Category III.

9. The Ivanpah Solar Project site is not located within an Area of Critical Environmental Concern, critical habitat, wilderness area, or a Desert Wildlife Management Area. The Project site was specifically excluded from inclusion to the Ivanpah Desert Wildlife Management Area.

10. The Ivanpah Solar Project site is not located within critical habitat or within one of the last habitats of any endangered species.

11. The BLM's Final EIS for the NEMO calls for a 1:1 mitigation ratio for the Ivanpah Solar Project site, indicating the lowest quality habitat. "Compensation shall be required by BLM for disturbances of Desert Tortoise habitat at the rate of 1 acre for each acre disturbed [a 1:1 ratio]; this is the same as the current requirement in BLM's Desert Tortoise Statewide Management Policy. Funds collected from project proponents shall be directed to habitat enhancement, rehabilitation or acquisition in the Eastern Mojave Recovery Unit."

12. In addition to the legally binding effect of the 1:1 mitigation ratio in the Final EIS, for the NEMO, a designation of Category III classifies the Project site as having the lowest quality habitat value, and fixes the mitigation ratio for the Project site at 1:1 for endangered species.

13. The only wildlife species present on the Project site that is jointly listed and protected by the Federal Endangered Species Act and the California Endangered Species Act as a threatened species is the Desert Tortoise.

14. The Ivanpah Solar Project does not contain a dense population of Desert Tortoises within its boundary and has a density of less than 5 tortoises per square mile.

15. Mitigation for impacts to the Desert Tortoise under the Endangered Species Act will comprise of an in lieu fee based on the mitigation ratio of 1:1 mandated by the CDCA, and administered through the BLM's In Lieu fee program.

16. Mitigation under CESA for impacts of the authorized take of Desert Tortoise will fully mitigate the impacts, be roughly proportional to the impact of the authorized taking on the species, and capable of successful implementation. As the BLM's authorization for the incidental take of the Desert Tortoise is consistent with the requirements of CESA,

the 1:1 to mitigation ratio is the appropriate mitigation ratio for impacts to the Desert Tortoise under both the ESA and CESA.

17. BLM will use the Applicant's In Lieu mitigation fees in furtherance of the Recovery Actions specified in the 1994 Desert Tortoise (Mojave population) Recovery Plan. Recovery Actions include restoration of disturbed areas, signage and fencing for DWMAs, controlled use of landfills and sewage ponds by Desert Tortoise predators, and controlled vehicle use in DWMAs.

18. The CDFG has made further recommendations as to how the Applicant's In Lieu mitigation fees should be utilized. These recommendations include the acquisition of private parcels containing Desert Tortoise habitat in the Ivanpah Valley or Shadow Valley portions of the BLM DWMA, or of private in-holdings in critical habitat portions of the Mojave National Preserve, installation of Desert Tortoise fencing near the Project site, habitat restoration, and the retirement of grazing allotments.

19. The evidence of record does not show that the proposed mitigation measure of acquisition of 8,000 acres of privately owned, Desert Tortoise habitat is capable of successful implementation.

20. With respect to plant species, an Incidental Take Permit is not required under the CESA or the ESA for rare plants or species of special concern. CESA is only applicable to plants that are listed as threatened or endangered under the federal ESA or CESA.

21. There are no plant species on the Project site designated as threatened or endangered under either the federal ESA or CESA.

22. To determine whether a plant qualifies as rare under CEQA, the appropriate scope to consider is the range of the species; for example, whether the species is endemic to California or has a regional distribution.

23. There is only one plant species located on the Ivanpah Solar Project site that arguably satisfies the CEQA definition of "rare"- Rusby's desert mallow.

24. Rusby's desert mallow is a California endemic categorized by the BLM as a sensitive species.

25. The CNDDB classifies the Rusby's desert mallow as uncommon, but not rare.

26. Potential impacts to Rusby's desert mallow will be avoided through Applicant's proposed avoidance strategy, which will avoid 100% of the Rusby's desert mallow.

27. Other plant species found on the Project site are the Mojave milkweed, the desert pincushion, the small-flowered androstephium, nine-awned pappus grass, and Parish's club cholla.

28. The Mojave milkweed is classified by the CNPS as more common elsewhere (throughout the rest of the plant's range). The CNDDB classifies Mojave milkweed as uncommon, but not rare.

29. The desert pincushion is classified by the CNPS as more common elsewhere throughout the rest of its range.

30. The small-flowered androstephium is classified by the CNPS as more common elsewhere throughout the rest of its range.

31. The nine-awned pappus grass is classified by the CNPS as more common elsewhere throughout its range.

32. Parish's club cholla is classified by the CNPS as more common elsewhere throughout its range.

33. The evidence of record does establish that the Mojave milkweed, the desert pincushion, the small-flowered androstephium, nine-awned pappus grass, and Parish's club cholla are not endangered and are common throughout their ranges. These plants are not considered rare under CEQA, and mitigation for these plants is not required.

34. Potential impacts to Rusby's desert mallow will be avoided through Applicant's Plant Avoidance and Minimization Plan, which will avoid 100% of the Rusby's desert mallow. Applicant's Plant Avoidance and Minimization Plan will also ensure that impacts to the Mojave milkweed, the desert pincushion, the small-flowered androstephium, nine-awned pappus grass, and Parish's club cholla, although not rare, are less than significant.

35. The record contains an exhaustive analysis of potential impacts of the Ivanpah Solar Project upon the Desert Tortoise, rare plants, and other plant species.

36. Potential impacts to the Desert Tortoise will be mitigated to a less than significant level through payment of the BLM's in lieu mitigation fees, implementation of the Desert Tortoise Translocation Plan, and a variety of other impact minimization and avoidance measures set forth in the Conditions of Certification.

37. Potential impacts to Rusby's desert mallow and other plant species will be avoided or minimized through implementation of Applicant's Plant Avoidance and Mitigation Plan,

and other impact minimization and avoidance measures set forth in the Conditions of Certification.

38. The Ivanpah Solar Project's low-impact development ("LID") design will further mitigate potential impacts to the biological resources by protecting existing Desert Tortoise habitat, in addition to minimizing ground disturbance, erosion potential, and storm water pollution.

39. The LID design preserves natural storm water flows and ensures that Waters of the State are not lost as a result of the construction and operation of the Ivanpah Solar Project.

40. There are no federal "Waters of the United States" associated with the Ivanpah Solar Project.

41. Construction and operation of the Project will not result in the loss of Waters of the State, as those Waters will continue to exist after construction of the Project.

42. As Waters of the State will not be lost as a result of the Project, mitigation or compensation for loss of Waters of the State is not necessary.

43. The purpose of the LSAA process is to protect fish and wildlife resources. The scope of fish and wildlife resources protected does not include plant or botanical values.

44. Pursuant to the express language of Subdivision 1602(a)(1)(D) of the California Fish & Game Code the LSAA process cannot begin until a CEQA-equivalent document has been issued by the Commission.

CONCLUSIONS OF LAW

1. By virtue of the duties imparted by Public Resources Code Sections 25500 *et seq*., the Commission is responsible for implementing the Lake and Streambed Alteration Agreement ("LSAA") process pursuant to Sections 1600 *et seq*. of the California Fish & Game Code.

2. Pursuant to the provisions of California Fish & Game Code Sections 1600, *et seq.*, the Lake and Streambed Alteration Agreement process will begin post-certification of the Ivanpah Solar Project.

3. Pursuant to Section 20801.1(a) of the California Fish & Game Code, Federal authorization for the incidental take of the desert tortoise is consistent with the requirements of the California Endangered Species Act, and a 1:1 mitigation ratio is the appropriate mitigation ratio for impacts to the Desert Tortoise.

4. The Commission concludes that mitigation for impacts to the Desert Tortoise under the federal Endangered Species Act will comprise of an in lieu fee based on the mitigation ratio of 1:1 mandated by the CDCA, and administered through the BLM's In Lieu fee program. The Commission further concludes that mitigation for impacts to the Desert Tortoise under the federal Endangered Species Act is full mitigation under CESA

5. CESA does not require mitigation for plants classified as rare under the Native Plant Protection Act or in the California Natural Diversity Database ("CNDDB"). A plant is considered rare pursuant to CEQA only if the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.

6. CEQA does not require mitigation for impacts to plant species that are not endangered or threatened. Impacts to the Rusby's desert mallow, to the extent it qualifies as rare under CEQA, will be mitigated to a level below the threshold of significance through the implementation of Applicant's Plant Avoidance and Mitigation Plan, which provides for the avoidance of 100% of the Rusby's desert mallow.

7. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Biological Resources as identified in the pertinent portions of this Decision.

8. The proposed Project's potential adverse impacts to biological resources will be mitigated to a level below the threshold of significance through the implementation of Applicant's Plant Avoidance and Mitigation Plan and the following Conditions of Certification.

9. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse impacts relating to Biological Resources as identified in the pertinent portions of this Decision.

10. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Biological Resources and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

IV. CULTURAL RESOURCES

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The CEQA Guidelines, 14 C.C.R. § 1500 et seq., Appendix G Section V Cultural Resources, identify the main areas that that the Commission must consider to determine whether a project will have impacts to cultural resources: (1) historical resources; (2) archaeological resources; and (3) human remains, whether or not interred in a formal cemetery.

2. The CEQA Guidelines, 14 C.C.R. § 1500 et seq., Appendix G Section V Cultural Resources, further provide that the Commission must evaluate whether the project will cause a substantial adverse change in the significance of the historical or archaeological resource, and whether the project would disturb any human remains.

3. The full scope of resources that can be considered "historical resources" under CEQA are outlined in 14 C.C.R. § 15064.5 and include resources listed in, or determined to be eligible for listing in the California Register of Historical Resources ("CRHR") or the National Register of Historic Places ("NRHP").

4. Public Resources Code § 21083.2(g) provides that unique archaeological resources include archaeological artifacts, objects, or sites, that under the "current body of knowledge," can be clearly demonstrated as (1) containing "information needed to answer important scientific research questions and that there is a demonstrable public interest in that information"; (2) "has a special and particular quality such as being the oldest of its type or the best available example of its type"; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

5. The CEQA Guidelines at 14 C.C.R. § 15064.5 provide that unique archaeological resources, or archaeological resources that fall within the definition of a historical resource, are protected under CEQA. If an archaeological resource is neither a unique archaeological resource nor an historical resource, any potential effects from a project on those resources "shall not be considered a significant effect on the environment."

6. Applicant and Staff conducted, in addition to other research and surveys, consultations with local Native American communities, archival research, reconnaissance surveys, and surface pedestrian surveys. Specifically, searches were conducted at both the Central California Information Center of the California Historical Resources Information System

and the Native American Heritage Commission Sacred Lands file, which indicated that there were no Native American Cultural resources in the immediate Project area.

7. A list of Native American contacts representing the nearest tribes that potentially had knowledge of cultural resources in the Project area was provided to the Applicant by the Native American Heritage Commission.

8. Native American groups on that list were contacted by both Applicant and the BLM to ascertain whether the Project area had traditional cultural value or properties, or if there were any concerns about the Project.

9. A geoarcheological study was conducted to determine the prehistoric archaeological potential of the Project area.

10. The Conditions of Certification include several monitoring and mitigation measures to be followed during the construction of the powerplant and related linear facilities to ensure that there will be no significant adverse impacts to significant cultural resources during Project construction.

11. The Ivanpah Solar Project will not have any direct or indirect impacts on cultural resources

12. The Ivanpah Solar Project will be in compliance with all applicable LORS.

13. The cumulative analysis focused on the potential for the Project's cumulative impacts to two types of cultural resources: known cultural resources and unknown cultural resources.

14. The Commission's approach to cumulative Cultural Resource analysis has been to limit the cumulative cultural assessment to impacts of the project in combination with other closely related past, present, and reasonably foreseeable probable future projects in the project vicinity. Furthermore, project proponents for future projects in the area can mitigate impacts to as yet undiscovered subsurface archaeological deposits to less than significant by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated as significant (eligible for the CRHR or NRHP).

15. The adoption of Conditions of Certification CUL-8 and CUL-9 ensures that any potential local cumulative effects of the Ivanpah Solar Project on the one known cultural resource remain less than cumulatively considerable.

16. The Project will not have a regional cumulative effect on known cultural resources, or contribute to cumulative impacts on a local or regional level to unknown cultural resources. Potential impacts from the Project will not contribute to cumulative impacts on cultural resources.

17. With the implementation of Conditions of Certification CUL-8 and CUL-9, the Project will not have cumulative impacts, on either a local or regional level, to known and unknown cultural resources.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Cultural Resources and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Cultural Resources as identified in the pertinent portions of this Decision.

3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse impacts relating to Cultural Resources as identified in the pertinent portions of this Decision.

V. CUMULATIVE IMPACTS

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. Section 15355 of the CEQA Guidelines defines "cumulative impacts", in pertinent part, as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."

2. Section 15355 of the CEQA Guidelines further provides that "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects."

3. Although Subsection (a) of Section 15355 of the CEQA Guidelines seems to suggest on its face that a single project may result in cumulative impacts, case law confirms that cumulative impacts under CEQA involve the potential interrelationships of two or more projects, not the impacts from a single project.

4. Under Section 15130 of the CEQA Guidelines, an EIR is required to discuss cumulative impacts when the project's incremental effect is "cumulatively considerable." Section 15065(a)(3) defines "cumulatively considerable" as meaning "that the incremental effects of an individual project are significant when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects."

5. The appropriate geographic scope for each discipline is the potential area in which the impacts of the Ivanpah Solar Project could combine with those of other closely related past, present, and reasonably foreseeable probable future projects.

6. EPA guidance provides that the selection of geographic boundaries should be based on the natural boundaries of the resources of concern to ensure that data and analytical requirements are not extended to areas beyond those relevant to decision making.

7. EPA Guidance expressly advises "the geographical boundaries should not be extended to the point that the analysis becomes unwieldy and useless for decision-making. In many cases, the analysis should use an ecological region boundary that focuses on the natural units that constitute the resources of concern."

8. BLM's NEPA Guidelines provides that the geographic scope for consideration of cumulative impacts is generally based on the natural boundaries of the resource affected, rather than jurisdictional boundaries. For example, if a proposal affects water quality and air quality, the appropriate cumulative effects analysis areas may be the watershed and the airshed.

9. CalTrans Guidance for Preparers of Cumulative Impact Assessments explains that "To determine the appropriate geographic boundary for cumulative effects on a particular resource, think about how far an effect can travel. For example, watercourse sedimentation from construction activities can travel long distances downstream, while the impact of construction-period vibration is typically restricted to nearby development."

10. CEQA requires an analysis, of both (1) whether another project that may result in cumulative effects is a "reasonably foreseeable probable future project" and (2) whether the effect of the "reasonably foreseeable probable future project" may "combine" with the effects of the Ivanpah Solar Project.

11. A project should not be included in the cumulative impacts analysis for the Ivanpah Solar Project unless it is both reasonably foreseeable and has the potential to have effects that "combine" with that of the Project.

12. CEQA requires the Committee to make a determination as to whether the Project may have an incremental impact "when added to other closely related past, present, and reasonably foreseeable probable future projects." The FSA has made no such determination as to whether the Project may have an incremental impact "when added to other closely related past, present, and reasonably foreseeable probable future projects." Instead, the FSA assumes that all indentified projects are "reasonably foreseeable."

13. CEQA requires an analysis of reasonable foreseeability and an analysis of the potential for effects to "combine," not an assumption.

14. The geographic scope of cumulative impacts should be limited to the natural boundaries of the resource - such as the airshed, watershed, range of the species, or viewshed.

15. The geographic boundary of cumulative analysis is the area in which the effects of the project can combine with the effects of other closely related past, present, and reasonably foreseeable probable future projects.

16. The key question in any cumulative impacts analysis is how the effects of the proposed project combine with the effects of other closely related past, present, and reasonably foreseeable probable future projects. To properly undertake this analysis, the geographic scope of cumulative analysis should be no larger than the area in which the effect of the project can travel.

17. The Noise and Traffic and Transportation sections of the FSA properly limit the geographical boundary of cumulative noise and traffic analysis to the area in which the project will be heard or traffic affected.

18. The Visual Section of the FSA improperly expands the geographical boundaries of the cumulative visual analysis beyond the natural boundary of the resource.

19. The FSA proposes that the geographical boundary of the cumulative visual analysis be the entire Southern California Mojave Desert or the entire California Desert Conservation Area (CDCA) The CDCA is a vast and diverse area of more than 25 million acres, almost 1/4 of the state of California. Such a vast area plainly exceeds the permissible geographic boundaries for cumulative visual analysis.

20. Just as noise impacts cannot combine with noises beyond the audible range of the Project and just as traffic impacts from the Project cannot combine with traffic impacts hundreds of miles away, the visual impacts cannot combine with effects beyond the viewshed of the Project.

21. The natural boundary of a visual resource is the area (viewshed) in which the Project will be seen.

22. The geographic boundary of cumulative analysis must be large enough to allow meaningful analysis, but not so large as to be impractical or unwieldy.

23. While the Commission has discretion to set the appropriate geographic boundaries for each of the cumulative analysis of each resource, that discretion is guided by the requirements of CEQA and case law. The boundary must be large enough to allow meaningful analysis, but not so large as to be impractical or unwieldy.

24. The United States Supreme Court in *Kleppe* addressed the selection of an assessment area in the coal mining context and determined that the appropriate scope of comprehensive impact statements should be based on basins, drainage areas, and other factors: "The determination of the region, if any, with respect to which a comprehensive statement is necessary requires the weighing of a number of relevant factors, including the extent of the interrelationship among proposed actions and practical considerations of feasibility."

25. Similarly, in *Ebbetts Pass Forest Watch v. Department of Forestry*, the Court of Appeals rejected the argument that the biological assessment area for a timber harvesting plan must be defined to include the entire Sierra Nevada ecosystem. The same considerations, which caused the Department of Forestry to reject a proposal to consider the cumulative impacts of the entire Sierra Nevada, apply with equal force to the FSA's proposal to consider the cumulative visual impacts of the entire Southern California Mojave Desert. A broad assessment of the entire Southern California Mojave Desert is neither practical nor reasonable in a cumulative impacts analysis of visual resources.

26. A "regional" approach to a cumulative visual impact assessment that encompasses 1/4 of the State of California is improper and unprecedented. The Commission knows of no project EIR or EIS that has ever assessed the cumulative visual impacts of a project within such a vast region as the Southern California Mojave Desert or the entire CDCA.

27. The record in this proceeding demonstrates that no expert witness who testified on cumulative impacts could cite an EIR or EIS that has analyzed the scope cumulative impacts on visual resources on a regional basis.

28. Consistently, over the past 35 years, the Commission has limited the geographical boundaries of the cumulative visual analysis to the project's viewshed, focusing on the combined effect of the project with nearby projects within the viewshed.

29. A "regional" approach to cumulative land use impact assessment encompassing the entire Mojave Desert in three states, is also improper and unprecedented.

30. Cumulative land use impacts of a power plant project are typically assessed by the Commission based on two considerations: (1) whether the incremental effects of the proposed project on land uses, together with other closely related past, present, and reasonably foreseeable probable future projects within the vicinity of the project site, compound or increase the incremental effects of the proposed project and, (2) whether the proposed project will make a significant contribution to regional impacts related to new development and growth (population immigration), and the resultant increase demand for public services, and expansion of public infrastructure.

31. In contrast to the typical approach to cumulative land use assessment, the FSA in this case does not stop with an analysis of the cumulative land use impacts in the vicinity of the Project. The FSA also states that an "analysis of cumulative effects for land use includes consideration of the numerous solar and wind development applications in the southern California, Arizona, and Nevada Mojave Desert." Whatever the effects of the Project on land use may be, they cannot combine with the effects of projects which are not closely related and which are hundreds of miles away.

32. A "regional" approach to a cumulative cultural impact assessment on unknown cultural resources, encompassing the entire Mojave Desert in three states, is improper and unprecedented.

CONCLUSIONS OF LAW

1. "Cumulative impacts" may result when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

2. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

3. The Commission's Decision is required to discuss cumulative impacts when the project's incremental effect is "cumulatively considerable," meaning that "the incremental effects of an individual project are significant when viewed in connection with the effects of

other closely related past projects, the effects of other current projects and the effects of probable future projects."

4. CEQA requires an analysis of both (1) whether another project that may result in cumulative effects is a "reasonably foreseeable probable future project" and (2) whether the effect of the "reasonably foreseeable probable future project" may "combine" with the effects of the Ivanpah Solar Project. Conversely, a project should not be included in the cumulative impacts analysis for the Ivanpah Solar Project unless it is both reasonably foreseeable and has the potential to have effects that "combine" with that of the Project.

5. CEQA requires an *analysis* of reasonable foreseeability and an *analysis* of the potential for effects to "combine," not an *assumption*. An analysis that simply assumes foreseeability or combination of effects is legally deficient.

6. The geographic scope of cumulative impacts should be limited to the natural boundaries of the resource - such as the airshed, ecological region boundary, range of the species, watershed or viewshed.

7. The geographic boundary of cumulative analysis is the area in which the effects of the project can combine with the effects of other closely related past, present, and reasonably foreseeable probable future projects.

8. The geographic boundary of cumulative analysis must be large enough to allow meaningful analysis, but not so large as to be impractical or unwieldy.

9. A "regional" approach to a cumulative visual impact assessment that encompasses 1/4 of the State of California is improper and unprecedented.

10. A "regional" approach to a cumulative land use impact assessment encompassing the entire Mojave Desert in three states, is also improper and unprecedented.

11. A "regional" approach to a cumulative cultural impact assessment, encompassing the entire Mojave Desert in three states, is also improper and unprecedented.

12. The Commission concludes that the evidence of record contains a sufficient, thorough, and highly detailed analysis of Cumulative Impacts and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

13. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any cumulative adverse impacts in any resource area as identified in the pertinent portions of this Decision.

VI. LAND USE

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project is located entirely on public land and under federal jurisdiction.

2. The Ivanpah Solar Project will not disrupt or divide the physical arrangement of an established community, or create a physical barrier dividing a community.

3. The Ivanpah Solar Project does not conflict with any habitat conservation plan or natural community conservation plan, and is not within designated critical habitat for any species.

4. The land use policies, plans, and regulations applicable to the Ivanpah Solar Project are the California Desert Conservation Area Plan of 1980 ("CDCA Plan") and Title 43 of the Code of Federal Regulations.

5. The CDCA Plan provides guidance for the management of the public lands of the California Desert by the BLM, creates different classes of land use, and designates specific permitted uses of lands located within a specific land class.

6. The Ivanpah Solar Project site is located within lands classified as Multiple Use Class L and Multiple Use Class M.

7. Permitted uses in both Class L and Class M lands include electrical generation facilities, transmission facilities, distribution facilities, fire management, vegetation harvesting, livestock grazing, motorized vehicle access and transportation (including railroads and airports), and organized competitive vehicle events.

8. Solar power generation facilities, such as the Ivanpah Solar Project, are expressly permitted by the CDCA Plan for areas designated as Class L and Class M. As a new facility, the Ivanpah Solar Project must be added to the CDCA through the CDCA Plan Amendment process.

9. The CDCA Plan does not require that areas designated for multiple uses maintain the ability to accommodate all permitted uses allowed in the class designation. The CDCA Plan recognizes particular uses allowed in a given area will be mutually exclusive, and that at times a tradeoff between certain uses will be required.

10. The Ivanpah Solar Project will not result in a demand for public services or the expansion of public infrastructure or contribute to regional growth.

11. Contributions of the Ivanpah Solar Project to regional development will be in a manner fully consistent with all applicable land use plans and policies.

12. The Ivanpah Solar Project will comply with all applicable land use policies, plans, ordinances, regulations and standards.

CONCLUSIONS OF LAW

1. The San Bernardino County General Plan is not a law, ordinance, regulation, or standard applicable to the Ivanpah Solar Project site.

2. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Land Use and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

3. The Ivanpah Solar Project will not cause significant impacts to land use as the Project will not disrupt or divide the physical arrangement of an established community, will not create a physical barrier dividing a community, will not conflict with any habitat conservation plan or natural community conservation plan, and is not within designated critical habitat for any species.

4. The Commission concludes that the Ivanpah Solar Project complies with all applicable laws, ordinances, regulations, and standards relating to Land Use as identified in the pertinent portions of this Decision.
5. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse impacts relating to Land Use as identified in the pertinent portions of this Decision.

VII. RECREATION

FINDINGS OF FACT

Based upon the evidence of record, Applicant requests that the Commission find and conclude as follows:

1. The Ivanpah Solar Project site is not specifically permitted, used, or designated for any recreational activity.

2. The Ivanpah Solar Project will not impair public access to recreational lands.

3. The Ivanpah Solar Project site represents a small portion of the overall area available for recreation in the Mojave Desert.

4. Construction and operation of the Ivanpah Solar Project will not damage recreational facilities or require the construction or expansion of recreational facilities which could impact the environment.

5. The evidence of record establishes that the Ivanpah Solar Project site will not cause significant impacts to Recreation.

6. The legislative history of the enactment of Public Resources Code Section 25529 establishes that there was no legislative intent to extend the provisions of Section 25529 beyond the coastal zone to any non-coastal region that might have recreational, scenic or historic value.

7. The Commission has not required the dedication of land for public use under Section 25529 for any projects outside the coastal zone.

8. The Applicant will pave and re-route Colosseum Road and will improve and re-route various other hiking trails in the vicinity of the Project site; thereby ensuring and enhancing public access in the vicinity of the Project.

9. Location of a visitor or interpretive center immediately between Units 1 and 2 of the Ivanpah Solar Project is not consistent with the need to ensure the security of the facility.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Recreation and complies with the requirements

of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. Pursuant to Public Resources Code Section 25529, the Commission is required to ensure that an area is established for public use when a generation facility is proposed to be located in a coastal zone or any other area with recreational, scenic, or historic value, to ensure continued public access and use.

3. The provisions of Public Resources Code Section 25529, requiring the establishment of an area for public use, is inapplicable to projects in non-coastal regions.

4. In the alternative, if Public Resources Code Section 25529 is applicable to this Project, the Applicant's commitment to paving and re-routing Colosseum Road and improving and re-routing various other hiking trails, affords continued and improved public access in conformance with the requirements of Section 25529.

5. The Commission concludes that the Ivanpah Solar Project complies with all applicable laws, ordinances, regulations, and standards relating to Recreation as identified in the pertinent portions of this Decision.
6. The Commission concludes that the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative impacts relating to Recreation as identified in the pertinent portions of this Decision.

VIII. TRAFFIC AND TRANSPORTATION

FINDINGS OF FACT

1. Analyses were conducted by both Applicant and Staff examining the potential transportation and traffic impacts related to the Ivanpah Solar Project, specifically in relationship to the potential impacts on the local roadway system and on I-15.

2. The operational workforce for all three phases, which is projected to be 90 people, will not result in a significant adverse traffic impact on local roads or I-15.

3. Traffic impacts during construction of the Ivanpah Solar Project will be reduced by Applicant's provision of bus and van services for workers who can make use of it.

4. As a general rule, the Commission has found temporary construction impacts not to be cumulatively considerable, even when the project adds construction traffic to roadways

which have either a pre-existing LOS F, or which become LOS F during either the morning or evening commute hours with the addition of project traffic.

5. During peak construction of the Project, approximately 174 vehicles will travel northbound on I-15 on Friday afternoons. The temporary addition of 174 cars on Friday afternoons will not change the level of service ("LOS") rating during this time, nor will these few cars measurably decrease traffic flow rates.

6. There is no evidence in the record that the construction of the Ivanpah Solar Project will overlap with the construction of other potential projects in the Ivanpah Valley.

7. The Project will not have significant cumulative traffic impacts on any local roads or on I-15 traffic at any time during either construction or operation of the facility.

8. Analyses of the potential of light sources to impact aviation, traffic and persons who may transit the area in the vicinity of the Project site were conducted by both Staff and Applicant. These analyses demonstrate that light from the Project will not have an adverse effect on public health and safety.

9. Although the evidence of record establishes that the likelihood of a risk to public health or safety from a misaligned heliostat is highly improbable, Applicant will prepare a Heliostat Positioning Plan in order to ensure that heliostat positioning does not pose any risk to aircraft, vehicles or any persons in the vicinity of the Project.

10. The Heliostat Positioning Plan will explain the operation of the heliostats, including operating and positioning methodology, and alarms that are provided to plant operators in the event that a heliostat malfunctions.

11. Applicant's design of the facility, together with the Heliostat Positioning Plan that will be implemented, ensures that the Project will not be a threat to public health or safety or a significant source of light and glare.

12. As the intensity of solar radiation expected to be experienced by pilots flying over the project site attributable to the power tower receivers would be approximately 0.009 kw/m2, which is well below the MPEs for momentary and continuous exposure, solar radiation reflected from Project power tower receivers is not expected to pose a health and safety hazard to motorists, pilots or passengers in aircraft flying over the site.

13. The intensity of energy reflected from the power tower receiver as experienced at the ground surface (120 meters below) would be approximately 0.048, which is well below

the 10 kw/m2 and 1 kw/m2 MPEs for momentary and continuous exposure, respectively. Motorists or hikers on adjacent roadways or trails would experience lower levels of solar radiation as they would be located even further from the light source than at ground surface.

CONCLUSIONS OF LAW

1. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Traffic and Transportation and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

2. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws, ordinances, regulations, and standards relating to Traffic and Transportation as identified in the pertinent portions of this Decision.
3. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse impacts relating to Traffic and Transportation as identified in the pertinent portions of this Decision.

IX. VISUAL RESOURCES

FINDINGS OF FACT

1. Staff and Applicant analyzed ten KOPs to determine whether the Ivanpah Solar Project might have a significant impact on visual resources.
2. From each of the five KOPs representing the most heavily utilized public access points within the Project viewshed where there are public facilities or recreational activities (the town of Primm, the Primm Golf Course and the Ivanpah Lakebed) the visual impacts of the Ivanpah Solar Project, with proposed mitigation, will be less than significant.
3. There are no significant visual impacts associated with KOPs 3, 4 and 5 (views of the Project site from I-15) because the visual quality from I-15 is moderately low to moderate and the level of visual sensitivity is low to moderate.
4. KOP 3 was taken from a fixed location near a freeway exit and is rotated away from the driver's actual cone of vision to capture the view of Ivanpah 2 and 3 in relation to the prominent rock outcropping. Similarly, KOP 4 is rotated to the left to capture the view of adjoining Ivanpah 1. The two photographs together are intended to represent views of drivers who exit the freeway. The photos do not represent what a driver would see traveling at interstate speeds along I-15.

5. The recreational destination for the majority of I-15 motorists is Las Vegas rather than the Mojave Desert; thus the level of concern with scenic quality of a majority of I-15 motorists is likely to be moderate or low. The majority of motorists on I-15 are not highly concerned with the scenic quality of the setting.
6. Many viewers are likely to find the solar power plant to be a point of interest, and will view the Ivanpah Solar Project with positive connotations as an expression of a concrete step toward renewable energy and energy independence. Many viewers will find the Project attractive and interesting.
7. The length of viewer exposure of I-15 drivers to the Ivanpah Solar Project is limited as there are only 4.8 minutes of elapsed time from the Nipton Road off ramp to the Primm Valley Golf Club, when traveling at Interstate speeds. There are no parking lots, no pull outs, and no vista point viewing areas in the area along this stretch of I-15 that permit travelers to stop to view the area.
8. A foreground view of the Project is not provided when driving on I-15 because the Project is located more than 0.5 mile from I-15.
9. The Bighorn Electric Generating Station, the town of Primm at the north end of the valley, the Primm Golf Course, existing high-voltage power lines, several unpaved vehicular trails and Highway I-15 intrude on the valley's scenic intactness. Existing views across the Project site from I-15 are not pristine.
10. Low to moderate viewer concern, low to moderate viewer exposure and moderate visual quality, result in a moderately low degree of overall visual sensitivity of drivers along the I-15 corridor.
11. While the Project is located within a near-middle-ground viewpoint for a very short distance along I-I5, the Project is not within the driver's cone of vision at middle-ground distance.
12. The natural landscape in the vicinity of I-15 and at near middle-ground distances is not intact. At this location, the Golf Course, not the Project, dominates the foreground view. Because the landscape is not intact at middle-ground and near middle-ground distances, the more distant views of the Project represent, at most, moderate change.
13. Based on the typical viewer activity along this busy interstate highway, application of an urban frame of reference will lead to the conclusion that the Project will represent, at most, a moderate degree of visual change along I-15.
14. The Project would not obstruct views toward the Clark Mountains in the background because of the low height of the mirror fields and the relatively large distances between the vertical towers.
15. The intensity of energy reflected from the power tower receiver as experienced at the ground surface (120 meters below) would be approximately 0.048, which is well below

the 10 kw/m2 and 1 kw/m2 MPEs for momentary and continuous exposure, respectively. Motorists or hikers on adjacent roadways or trails would be located even farther from the light source and would experience even lower levels of solar radiation.

16. The degree of viewer sensitivity is low to moderate. The quality of views where I-15 is closest to the Project is at most moderate. Weighing these factors together, the evidence demonstrates that the overall impact on the views of travelers on I-15 (KOPs 3, 4 and 5) will be less than significant.

17. KOP 9 represents a viewpoint at near middleground distance and is located outside the Stateline Wilderness Area.

18. KOP 9 is not representative of a sensitive recreational viewpoint and is not representative of views from within the Wilderness Area. Instead, KOP 9 is representative of near middle-ground view of the Project from roads and powerlines that run above the northern boundary of the Project.

19. The Project will be visible from only a small portion of the Stateline Wilderness Area, which consists largely of inaccessible ridges and hillsides.

20. The entire Stateline Wilderness Area is used by an average of one visitor per day, or no more than 365 users per year. Most of this use is concentrated in areas where the Ivanpah Solar Project is not visible, for example, in the eastern and northern areas of the wilderness.

21. Because few users of the Stateline Wilderness Area would have views of the Project, the visual impacts of the Project from the Stateline Wilderness Area are less than significant.

22. KOP 10, as directed by the Staff, is taken from the top of a very steep, trail-less, virtually inaccessible shale, rocky ridge adjacent to the Benson Mine.

23. There is no evidence that anyone, other than Applicant's visual resource experts, has ever visited this location.

24. There is no evidence of record that the Mojave National Preserve has significant views of the Project site, or that the Project might significantly impact these views. Overall, the Project will simply not be visible from most points within the Mojave National Preserve. At most, the Project may be visible in the distant background.

25. There are on average one or two vehicles per day in this area during most of the year, and perhaps up to 20 to 30 vehicles during the spring and fall months.

26. KOP 10 is in the vicinity of sites of past mining activity, where there are roads, excavations, and derelict structures in the immediate foreground of the views that visitors experience. These remnants of the old mines and related industrial activities may be part of what attracts visitors to these areas.

27. The Project's impact on Visual Resources from the Mojave National Preserve is less than significant.

28. There are no significant construction related visual impacts associated with the Ivanpah Solar Project.

29. The cumulative impact of the transportation, development, and energy projects in combination with the Ivanpah Solar Project would not be substantial.

30. Two independent analyses of the combined effects of the Ivanpah Solar Project with other past, present and probable future projects within the viewshed, the AFC and the DesertXpress Draft EIS, conclude that the impacts will not be cumulatively significant.

31. The mere filing of a BLM Form 299 and submission of a first draft of the Plan of Development are not a commitment of resources. A Plan of Development submission is not an "application" and the Plan of Development will change as the project evolves.

32. No designated scenic vistas were identified in the Project area. The Project would not have a substantial adverse effect on a scenic vista.

33. The Project will not substantially damage any scenic resource.

34. The Project will not substantially degrade the existing character or quality of the site and its surroundings.

35. The Project will not result in significant light and glare.

36. Along Interstate 15 from the golf course and at all distances more than 1/4 mile from the Project, the heliostats will not produce glare that would create discomfort or nuisance. At a distance of four miles, the Benson Mine KOP, the reflectivity from the receivers will be less than that of a lake.

CONCLUSIONS OF LAW

1. CEQA does not authorize an assessment of cumulative visual impacts outside the viewshed.

2. The environmental assessment of cumulative impacts must consider only those past, present and future projects which are reasonably foreseeable.

3. The Commission concludes that the evidence in the hearing record contains a sufficient, thorough and highly detailed analysis of Visual Resources and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

4. The Commission concludes that the implementation of the Conditions of Certification will ensure that the Ivanpah Solar Project will comply with all applicable laws,

ordinances, regulations, and standards relating to Visual Resources as identified in the pertinent portions of this Decision.

5. The Commission concludes that with the implementation of the Conditions of Certification the Ivanpah Solar Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts relating to Visual Resources identified in the pertinent portions of this Decision.