

US EPA ARCHIVE DOCUMENT



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105**

February 10, 2012

Ms. Liana Reilly, NEPA Document Manager
Western Area Power Administration
P.O. Box 281213,
Lakewood, Colorado 80228-8213

Subject: Draft Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed Yuma Field Office Resource Management Plan Amendment, La Paz County, Arizona (CEQ# 20110381)

Dear Ms. Reilly:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed Yuma Field Office Resource Management Plan Amendment, La Paz County, Arizona. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act.

EPA supports increasing the development of renewable energy resources in an expeditious and well planned manner. Using renewable energy resources such as solar power can help the nation meet its energy requirements while minimizing the generation of greenhouse gases. While renewable energy facilities offer many environmental benefits, they are not without the potential for adverse impacts. Appropriate siting and design of such facilities is of paramount importance if the nation is to make optimum use of its renewable energy resources without unnecessarily depleting or degrading its water resources, wildlife habitats, recreational opportunities, and scenic vistas.

We have rated the DEIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed “*Summary of EPA Rating Definitions*”). We have concerns about the potential impact of the proposed Project to aquatic resources and sensitive species. The EPA recommends the Final EIS include additional analysis and mitigation measures to address direct and cumulative impacts to aquatic, air and biological resources. Our enclosed detailed comments provide more information regarding these concerns and recommendations.

We appreciate the opportunity to review this DEIS and are available to discuss our comments. Please send one hard copy and one CD ROM copy of the FEIS to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at (415) 972-3521, or contact Scott Sysum, the lead reviewer for this Project, at (415) 972-3742 or sysum.scott@epa.gov.

Sincerely,

/s/

Kathleen Martyn Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

cc: Mr. Eddie Arreola
Supervisory Project Manager, Bureau of Land Management

Enclosures:

- (1) Summary of EPA Rating Definitions
- (2) EPA's Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement.

ENVIRONMENTAL IMPACT OF THE ACTION

“LO” (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

“EC” (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

“EO” (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

“EU” (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. The EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality.

ADEQUACY OF THE IMPACT STATEMENT

Category “1” (Adequate)

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category “2” (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category “3” (Inadequate)

The EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

US EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE QUARTZSITE SOLAR ENERGY PROJECT AND PROPOSED YUMA FIELD OFFICE RESOURCE MANAGEMENT PLAN AMENDMENT, LA PAZ COUNTY, ARIZONA, FEBRUARY 10, 2012

Aquatic Resources

Geographic Extent of Waters of the United States

The Draft Environmental Impact Statement does not fully assess potential impacts to wetlands and surface water resources. The DEIS states that, in accordance with the U.S. Army Corp of Engineers Regulatory Guidance Letter Number 08-02, a preliminary jurisdictional delineation of washes that traverse the Project area was conducted April 13 to 15, 2010 (p. 3-69); however, the DEIS does not reference the delineation nor provide the name of the consultant or agency that conducted it. While the DEIS states that the preliminary jurisdictional delineation identified surface hydraulic features of the site which are poorly developed and consist of very shallow, narrow, and commonly vegetated, braided drainages, it does not include a detailed description of the extent of, or impacts to, waters of the U.S. (WUS), nor does it confirm whether USACE has asserted jurisdiction. The DEIS states that, based on the initial engineering design, total acre loss of waters of the U.S. resulting from Project development is estimated at approximately 0.023 acre (p. 4-74), but it is unclear if this determination was the result of the preliminary jurisdictional delineation performed.

Recommendation:

The U. S. Environmental Protection Agency encourages the Western Area Power Administration to include the results of a jurisdictional determination in the Final EIS. A jurisdictional determination must be approved by the USACE. Additionally, the FEIS should list the acres of jurisdictional waters impacted by each alternative.

If a CWA Section 404 permit is determined to be needed, the FEIS should discuss and demonstrate compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230) (Guidelines), promulgated pursuant to Section 404(b)(1) of the CWA.

Drainages, Ephemeral Washes, and Floodplains

Natural washes perform a diversity of hydrologic, biochemical, and geochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions. The potential damage that could result from disturbance of flat-bottomed washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems, such as adequate capacity for flood control, energy dissipation, and sediment movement; as well as impacts to valuable habitat for desert species.

Recommendations:

To the extent any aquatic features that could be affected by the Project are determined not to constitute WUS, the EPA recommends that the FEIS characterize the functions of such features and discuss potential mitigation.

To avoid and minimize direct and indirect impacts to desert washes (such as erosion, migration of channels, and local scour):

- Utilize existing natural drainage channels on site and more natural features, such as earthen berms or channels, rather than concrete-lined channels.
- Commit to the use of natural washes, in their present location and natural form and including adequate natural buffers, for flood control to the maximum extent practicable.
- Reconfigure the Project layout, roads, and drainage channels, as appropriate, to avoid ephemeral washes, including desert dry wash woodlands within the Project footprint.
- Minimize the number of road crossings over washes and design necessary crossings to provide adequate flow-through during storm events.

Air Quality

The DEIS describes and estimates air emissions from the proposed Project, including potential construction and maintenance activities, as well as proposed mitigation measures to minimize those emissions. Although we understand that the area where the Project will be implemented is in attainment for NAAQS, it is important to minimize impacts, whenever possible, for the protection of human health and the environment. Implementation of additional mitigation measures could reduce the Project's emissions.

The DEIS states that the particulate emission contributions from earthmoving and vehicle travel within the Project area were determined using emission factors from the URBEMIS Version 9.2.4 program (an urban emissions software program) and that South Coast Air Quality Management District factors were used as a tool for off-road vehicle and diesel-engine powered construction emissions analyses (p. 4-34). The URBEMIS program incorporates the Emission Factor or EMFAC model, which should only be used in California.

Recommendations:

The EPA recommends the applicant use the Motor Vehicle Emission Simulator or MOVES to estimate emissions from cars, trucks and motorcycles in Arizona (<http://www.epa.gov/otaq/models/moves/index.htm>). For nonroad engines, equipment, and vehicles, the EPA recommends the NONROAD Model (<http://www.epa.gov/otaq/nonrdmdl.htm>).

The EPA recommends the FEIS include the following additional measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics).

- *Construction Emissions Mitigation Plan* – The FEIS should include a Construction Emissions Mitigation Plan. In addition to all applicable local, state, or federal requirements, the EPA recommends that the following mitigation measures be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter and other toxics from construction-related activities:
 - *Fugitive Dust Source Controls:* While the DEIS does identify the need for a Fugitive Dust Control Plan (p 2-43), we recommend that in the FEIS the plan also include these additional general commitments:
 - Vehicle Speed
 - ◆ Limit speeds to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
 - ◆ Limit speeds to 10 miles per hour or less on unpaved areas within construction sites on unstabilized (and unpaved) roads.
 - ◆ Post visible speed limit signs at construction site entrances.
 - Sweep the first 500 feet of paved roads exiting construction sites, other unpaved roads en route from the construction site, or construction staging areas whenever dirt or runoff from construction activity is visible on paved roads, or at least twice daily (less during periods of precipitation).
 - Stabilize disturbed soils (after active construction activities are completed) with water, a non-toxic soil stabilizer, soil weighting agent, or other approved soil stabilizing method.
 - Provide vehicles (used to transport solid bulk material on public roadways and that have potential to cause visible emissions) with covers. Alternatively, sufficiently wet and load materials onto the trucks in a manner to provide at least one foot of freeboard.
 - Use wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) where soils are disturbed in construction, access and maintenance routes, and materials stock pile areas. Keep related windbreaks in place until the soil is stabilized or permanently covered with vegetation.
 - *Mobile and Stationary Source Controls:*
 - If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. The EPA's website for nonroad mobile sources is <http://www.epa.gov/nonroad/>. In general, commit to the best available emissions control technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible Diesel engines < 25 hp rated power started phasing in Tier 4 Model Years in 2008. Larger Tier 4 diesel engines will be phased in depending on the rated power (e.g., 25 hp - <75 hp: 2013; 75 hp - < 175 hp: 2012-2013; 175 hp - < 750 hp: 2011 - 2013; and \geq 750 hp 2011- 2015).
 - Where Tier 4 engines are not available, use construction diesel engines with a rating of 50 hp or higher that meet, at a minimum, commit to Tier 3 Emission

- Standards for Off-Road Compression-Ignition Engines, unless such engines are not available.
- Where Tier 3 engine is not available for off-road equipment larger than 100 hp, use a Tier 2 engine, or an engine equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides and diesel particulate matter to no more than Tier 2 levels.
 - Consider using electric vehicles, natural gas, biodiesel, or other alternative fuels during construction and operation phases to reduce the project's criteria and greenhouse gas emissions.
 - Plan construction scheduling to minimize vehicle trips.
 - Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections.
 - Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.
- *Administrative controls:*
- Develop a construction traffic and parking management plan that maintains traffic flow and plan construction to minimize vehicle trips.
 - Identify any sensitive receptors in the project area, such as children, elderly, and the infirm, and specify the means by which impacts to these populations will be minimized (e.g. locate construction equipment and staging zones away from sensitive receptors and building air intakes).
 - Include provisions for monitoring fugitive dust in the fugitive dust control plan and initiate increased mitigation measures to abate any visible dust plumes.

Best Management Practices and Built-In Mitigation

Chapter 2 section 2.7 of the DEIS lists the best management practices and built in mitigation measures that are proposed to mitigate project impacts. Some of these proposed mitigation measures are generic, however, and do not identify specific actions that would be taken, nor the locations where they would occur. To be considered adequate, mitigation measures should be specific, feasible actions that will improve adverse environmental conditions. The Council on Environmental Quality has provided guidance on documenting and implementing mitigation measures, which states, among other things, that agencies should provide clear documentation of mitigation commitments, and when and how the mitigation commitments will be implemented. Also, the mitigation measures should be carefully specified in terms of measurable performance standards or expected results.¹

Arizona Game and Fish Department has developed guidelines for development projects, in general, and for solar developments, in particular². Also, the Arizona Department of Water Resources has identified

¹ CEQ, Final Guidance for Federal Departments and Agencies on the Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact ("Mitigation Guidance"), Jan. 14, 2011.

² Arizona Game and Fish Department, Guidelines for Solar Developments in Arizona, March 12, 2010

its requirements pertaining to the use of ground and surface waters for solar projects in Arizona³. The Arizona Game and Fish Department guidelines provide best management practices for, but not limited to, groundwater, evaporation ponds, vegetation removal, noxious weeds, and transmission lines.

Recommendations:

The FEIS should provide clear mitigation objectives and specify how each measure will be implemented, who is responsible for its implementation, where it will occur, and when it will occur.

The FEIS should incorporate the Best Management Practices from the Arizona Game and Fish Department for wildlife friendly development and the Arizona Department of Water Resources requirements pertaining to groundwater use for solar developments in order to be consistent with State policies.

Biological Resources, Habitat and Wildlife

Many of the proposed activities would result in vegetation being cleared and soils moved during the construction of roads, heliostat field and main power block facilities. The DEIS states that this will result in the direct loss of up to 1,675 acres of habitat currently used by a variety of native wildlife species, including mammals, birds and raptors (p. 4-62).

The DEIS also states that wildlife species that tend to benefit from the introduction of human activities and related facilities, trash, and debris, such as ravens and coyotes, could pose a potential increased threat to resident prey species such as lizards, small mammals, and ground-nesting birds (p. 4-62). Controlling common raven use of project sites assists in reducing adverse impacts on protected species.

Additionally, the Project will include either three 4-acre or one 18-acre evaporation pond(s), depending on the alternative selected, which can be both an attractant and a hazard to wildlife (p. 4-63). The DEIS states that, if needed, the Project evaporation ponds could incorporate netting or other measures to deter birds from pond use. If required, an Avian Protection Plan would be developed that would address monitoring and response to mortality events from collisions, burns, and any bird use of the evaporation ponds. The DEIS also states that the Project will require the construction of a 1.5 mile overhead transmission line and switchyard to provide an interconnection with the existing Western's Bouse-Kofa 161-kilovolt (kV) transmission line (p. 1-2).

All raptor and owl species are protected under the Migratory Bird Treaty Act. The golden eagle and bald eagle also receive protection under the Bald and Golden Eagle Protection Act. In September 2009, the U.S. Fish and Wildlife Service finalized permit regulations under the BGEPA for the take of bald and golden eagles on a limited basis, provided that the take is compatible with preservation of the eagle and cannot be practicably avoided⁴. The final rule states that if advanced conservation practices can be

³ Arizona Department of Water Resources. Water Management Requirements For Solar Power Plants In Arizona

⁴ See Eagle Permits, 50 CFR parts 13 and 22, issued Sept. 11, 2009. See internet address:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/BaldEagle/Final%20Disturbance%20Rule%2009%20Sept%202009.pdf>

developed to significantly reduce take, the operator of a facility may qualify for a programmatic take permit. Projects or activities that could impact golden or bald eagles may require the preparation of an Eagle Conservation Plan⁵.

Recommendations:

Include, in the FEIS, design practices to be followed for the above ground power lines to minimize bird collisions. A useful reference for this is the Avian Power Line Interaction Committee document, *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994*.

Include in the FEIS a requirement for an Avian Protection Plan (now called Bird and Bat Conservation Strategies (BBCS)) to be developed using the 2005 Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service Avian Protection Plan Guidelines. Include, in the FEIS, practices that reduce the potential for raptor fatalities and injuries from power lines. These practices can be found in the Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006 manual.

Initiate discussions with the U.S. Fish and Wildlife Service on the requirement that an Eagle Conservation Plan be developed for transmission line projects or other projects that could impact bald or golden eagles.

Include in the FEIS a common raven management plan for the Project as a mitigation measure. Describe in the raven monitoring and control plan methods to avoid attracting common ravens during all phases of development and use. Incorporate the most recent guidance from the U.S. Fish and Wildlife Service.

The FEIS should include a requirement for a Worker Environmental Awareness Training program in order to ensure project personnel and contractors are aware of their responsibility to implement the Best Management Practices and mitigation measures. Knowledge and practice of these measures should be the responsibility of all on-site personnel.

Consistency of the Quartzsite Solar Energy Project with the Arizona Restoration Design Energy Project and the Solar Programmatic EIS

The Bureau of Land Management's Arizona RDEP Draft EIS, scheduled to be released for public comment in late 2012, is intended to identify public lands in Arizona suitable for renewable energy development and establish a baseline set of environmental protection measures for such projects. In addition, BLM and the Department of Energy are collaborating on the Programmatic EIS for Solar Development in Six Southwestern States, scheduled for completion in the Summer of 2012, which, as drafted, identifies proposed Solar Energy Zones, as well as design features for utility-scale solar projects. The Quartzsite solar energy project is not located in a RDEP Renewable Energy Development Area nor is it in one of the Solar Energy Zones identified in the Supplemental Draft Programmatic EIS.

⁵ Draft Eagle Conservation Plan Guidance U.S. Fish & Wildlife Service January 2011

Recommendation:

We recommend that the FEIS include up-to-date maps illustrating the location of the proposed Project in relation to the current boundaries and conceptual alternatives of the Arizona RDEP and the Solar Programmatic EIS. The FEIS should discuss the extent to which the Quartzsite solar energy project is consistent with the requirements and/or conditions that are proposed to apply under the Arizona RDEP and the Solar PEIS.

Cumulative Impacts Analysis

The DEIS lists six proposed solar energy projects for consideration in the cumulative impacts section, five in Arizona and one in California near the city of Blythe (p. 4-7 to 4-9). Of these six projects, only two are analyzed in the cumulative impacts section. The DEIS does not analyze the other four projects, citing inactivity since the submission of their Right of Way applications and the lack of data to assess the potential impacts that would result from this projects' construction, operation, maintenance, and decommissioning. The DEIS concludes that the four projects are speculative and, therefore, those impacts are not reasonably foreseeable for purposes of this analysis (p. 4-8).

Based on information from the Bureau of Land Management, it appears numerous solar energy projects are considered active in the project's vicinity. We recommend these projects be incorporated into the cumulative impacts analysis. Specifically, the Arizona BLM website⁶ lists ten solar energy projects in La Paz County with pending applications. The ten solar projects in La Paz County currently listed by the BLM as pending are all concentrating solar power plants, either tower technology or trough technology. The technologies, construction methods and environmental impacts of the plants are well known, and have been analyzed in environmental documents in Arizona as well as California.

These ten solar projects were also listed in the BLM Solar Programmatic EIS Appendix B as active solar projects. Further, there are additional solar projects in the neighboring counties of Maricopa, Yuma and Riverside that could have an impact on, at a minimum, socioeconomic resources as well as air, biological and mineral resources. The BLM website lists the Quartzsite and Hyder Valley projects as active projects currently progressing through the Right of Way process in Arizona. In California, the BLM lists the McCoy Solar Project (CACA 48728) and the Desert Harvest Solar Project (CACA 49491) as "fast track" projects near the City of Blythe, California.

Recommendations:

The FEIS should update the list of reasonably foreseeable projects used in the cumulative effects analysis to include all projects that may, cumulatively, have impacts on the resources affected by the proposed project. This would likely include the remaining ten pending projects in La Paz County, as well as the McCoy Solar project and the Desert Harvest solar projects near the City of Blythe, California.

⁶ BLM Pending Solar Projects in Arizona can be found at - <http://www.blm.gov/az/st/en/prog/energy/solar/pend-solar.html>

Estimate the annual water use associated with the reasonably foreseeable large-scale solar projects proposed in the Project's vicinity. WAPA should be able to obtain this information, upon request, from proponents of viable projects or from the analyses performed in the BLM Solar Programmatic EIS.

The EPA recommends the FEIS clearly demonstrate whether there is sufficient groundwater for the lifetime of this Project and other reasonably foreseeable projects in the study area.

The EPA recommends the cumulative impacts analysis for groundwater include a discussion of the potential effect of future climate change on the proposed Project and groundwater development.

The EPA recommends that the FEIS contain additional socioeconomic analyses, including analysis of the impacts of an influx of workers to the areas of Quartzsite, Parker, AZ and Blythe, CA. This additional analysis should include all the active renewable energy projects ongoing or planned to be built around the same time as the Quartzsite solar energy project. The FEIS should provide an estimate of the amount of growth, likely location(s), the impacts on municipal services, and the biological and environmental resources at risk. The FEIS should also include a discussion of potential transit options (including formal Rideshare, Carpooling, and Bussing) to transport workers from the nearest population centers to the remote project sites as well as other measures to facilitate accessibility to the job sites and reduce greenhouse gas emissions resulting from worker transportation.

Adaptive Management Plan

The EPA commends the proposed use of adaptive management, as discussed in the DEIS (p. 4-29). The CEQ has promoted the use of adaptive management, with certain precautions for its successful implementation⁷. According to the CEQ, the extent and detail of an adaptive management action would likely be extensive when it is being used to provide maximum flexibility to adjust to unanticipated impacts of project implementation, revise the implementation of actions to save costs, or alter the mitigation to improve effectiveness.

Recommendation:

The FEIS should expound on the adaptive management plan; specifically, it should describe the proposed adaptive management approach, how the approach is reflected in the alternatives being considered, the monitoring protocols proposed, the desired outcome to be obtained, the performance measures that will determine whether the desired outcome is being achieved or an adaptive action is needed, and the factors for determining whether additional NEPA review is needed. Additionally the adaptive management plan should be formalized, documented and agreed upon by the appropriate resource management agencies. Oversight and public

⁷ The NEPA Task Force Report to the Council on Environmental Quality, Modernizing NEPA Implementation, September 2003

involvement of the adaptive management process should be provided for quality control and should involve an independent oversight committee or an independent advisory group.

Fencing

The DEIS states that chain link security fencing would be installed around the Project area perimeter, substation, ponds, and other areas requiring controlled access prior to beginning construction. The Project area perimeter fence would be 8 feet high and have an overall height of no more than 10 feet from the bottom of the chain link to the top barbed wire, or per requirements mandated by the North American Electric Reliability Corporation and the U.S. Department of Homeland Security for facilities of this type. The fence may have a top rail, bottom tension wire, and three strands of barbed wire mounted on 45 degree extension arms (p. 2-23).

Recommendations:

Provide more detailed information in the FEIS on the proposed fencing design and placement, and its potential effects on drainage systems on the Project site, if applicable. Ensure that fencing proposed for this Project will meet appropriate hydrologic, wildlife protection and movement, and security performance standards. Describe those standards in the FEIS.

The FEIS should discuss how the fence design is consistent with the Arizona Game and Fish Department Wildlife Compatible Fencing guidelines⁸.

Climate Change

Emissions of carbon dioxide and other heat-trapping gases are affecting weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates, resulting in climate change. The Arizona Climate Action Plan predicted that, by 2040 to 2069, a June to August increase of 3.6 to 9.0 degrees Fahrenheit is possible in the southwestern U.S.⁹. In general, Arizona is expected to have wetter winters and more arid summers as the subtropical dry zones for the whole planet are projected to increase. Higher temperatures and increased winter rainfall will be accompanied by a reduction in snow pack, earlier snowmelts, and increased runoff. Some of the predictions, such as reduced groundwater discharge, and more frequent and severe drought conditions, may impact the proposed Project.

Recommendation:

The FEIS should discuss the potential impact of climate change on the Project, and incorporate mitigation measures as appropriate. The FEIS should also assess how the projected impacts of the Project could be exacerbated by climate change.

⁸ Arizona Game and Fish Department, Guidelines for Wildlife Compatible Fencing, updated 9/15/2011

⁹ Governor's Climate Change Advisory Group, Arizona Climate Action Plan, 2006.