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June 11, 2010

DOCKET
09-AFC-6
DATE JUN 11 2010
RECD. JUN 11 2010

California Energy Commission
Attn: Docket No. 09AFC6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: 09-AFC-6 Blythe Solar Power Plant Project

Dear Docket Clerk:

Enclosed are an original and one copy of **TESTIMONY OF T'SHAKA TOURE ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY FOR THE BLYTHE SOLAR POWER PROJECT**. Please process the document and provide us with a conformed copy in the envelope provided.

Thank you.

Sincerely,

/s/

Elizabeth Klebaner

EK:bh
Enclosures

2398-049a

STATE OF CALIFORNIA

California Energy Commission

In the Matter of: The Application for Certification for the Blythe Solar Power Project	Docket No. 09-AFC-6

TESTIMONY OF T'SHAKA TOURE ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY FOR THE BLYTHE SOLAR POWER PROJECT

June 11, 2010

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Attorneys for CALIFORNIA UNIONS FOR RELIABLE ENERGY

I. INTRODUCTION

I have been working for the California Unions for Reliable Energy ("CURE") as a consultant on the Application for Certification ("AFC") for the Blythe Solar Power Project ("Project" or "BSPP") since the data adequacy phase. I have reviewed the Applicant's submittals regarding impacts to waters of the State, the Staff Assessment/Draft Environmental Impact Statement ("SA/DEIS"), and the Revised Staff Assessment. I have also conducted my own literature research and analyses regarding the Project's potential environmental impacts and alternatives. My testimony is based on the activities described above and the knowledge and experience I have acquired during the more than 19 years of working in the field of natural resources management planning. A summary of my education and experience is attached to this testimony as Attachment 1.

II. PROJECT DESCRIPTION AND PROJECT IMPACTS TO STATE JURISDICTIONAL WATERS

The Project lies in the Palo Verde Mesa east of the McCoy Mountains. The general stormwater flow pattern is from the higher elevations in the mountains located three miles west of the Project to the lower elevations in the McCoy Wash located east of the Project. Runoff from the McCoy Mountains, west of the Project, discharges into braided channels at the base of the mountains, and passes through the Project in a southeasterly direction, and is intercepted offsite by irrigation canals before reaching McCoy Wash. The Applicant proposes to intercept the natural drainage flows at the Project boundaries before they reach offsite irrigation canals. The Applicant has proposed to channelize and reroute flows around and through the Project, returning the flows to their sheet flow regime on the east and southeast sides of the Project.[1]

California Energy Commission Staff ("Staff") has found that the Project will directly impact 551 acres of jurisdictional waters of the State and indirectly impact 133 acres of jurisdictional waters of the State located downstream of the Project.[2] Specifically, the Revised Staff Assessment finds that,

> The extensive ephemeral drainage network at the Project site currently provides many functions and values, including landscape hydrologic connections, stream energy, dissipation

[1] AECOM 2009.
[2] Revised Staff Assessment, pp. C.2-57-58.

> during high-water flows that reduces erosion and improves water quality, water supply and water-quality filtering functions, surface and subsurface water storage, groundwater recharge, sediment transport, storage, and deposition aiding in floodplain maintenance and development, nutrient cycling, wildlife habitat and movement/migration; and support vegetation communities that help stabilize stream banks and provide wildlife habitat.[3]

Staff finds that the Project would eliminate all of these functions and values.[4] The Revised Staff Assessment also states that washes upstream of the Project area may also be impacted by head-cutting and erosion.[5] I agree with Staff's finding that the Project will impact to a total of 684 acres of waters of the States, and that this impact is significant.

However, the Revised Staff Assessment, in my professional opinion, incorrectly anticipates that the wash-dependent vegetation downslope of the Project would continue to provide habitat for years and possibly decades after the Project is constructed before eventually dying.[6] A structural control providing detention has a "zone of influence" downstream where its effectiveness can be observed. Beyond this zone of influence the structural control becomes relatively small and insignificant compared to the runoff from the total drainage area at that point. Based on studies and master planning results for a large number of sites, that zone of influence is considered to be the point where the drainage area controlled by the detention or storage facility comprises 10% of the total drainage area. For example, if the structural control drains 10 acres, the zone of influence ends at the point where the total drainage area is 100 acres or greater.[7]

The Applicant has failed to provide information regarding post-construction flooding conditions. If the post-construction peak flows are increased, the wash-dependent vegetation downstream of the Project site could be significantly impacted. According to the Revised Staff Assessment, "the drainage report does not provide sufficient information to establish the post-project flooding conditions or to determine the potential impacts to vegetation downstream. Other potential indirect effects of the proposed drainage alterations are erosion and resulting root exposure leading to the eventual death of vegetation."[8]

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[3] Revised Staff Assessment, p. C.2-58.
[4] Revised Staff Assessment, p. C.2-58.
[5] Revised Staff Assessment, p.C.2- 58.
[6] *See* BSPP DEIS Staff Report C.2-56
[7] Ibid.
[8] Revised Staff Assessment, p.C.2- 58.

The drainage alterations should be designed such that the post-development peak discharges from the site for all storm events do not increase the pre-development peak discharges at the outlet of the site and at each downstream tributary junction and each public or major private downstream stormwater conveyance structure located within the zone of influence.[9]

III. FEASIBLE PROJECT MEASURES AND ALTERNATIVES TO REDUCE IMPACTS TO STATE WATERS

The Applicant proposes to replace flood conveyance and some of the biogeochemical functions of the impacted desert washes by replicating existing flow patterns and volumes with five channels.[10] The channel design has not yet been finalized.[11] However, the Applicant provided a conceptual model for the drainage design. The Project will include intercepting the storm flows at the Project boundaries, channelizing and rerouting the flows around and through the Project, and then returning the flows to their sheet flow regime on the east and southeast sides of the Project.[12]

Construction details for drainage alterations will vary with the design and purpose for which the bank protection is provided. Although, the Applicant provided a conceptual model for the drainage design, the Applicant has not provided specific information regarding materials that will be used to construct the proposed channel alterations, swales, and diffusers. The Applicant's submittals lack sufficient information regarding how the Applicant's plans for altering the existing flow patterns will impact the desert washes, channels, flood conveyance, biogeochemical and wildlife functional values. Additionally, the Applicant's submittals and the Revised Staff Assessment have not identified nor analyzed drainage locations where temporary impacts could potentially occur as an alternative to permanent impacts on the channels.

Impacts to natural resources, including biogeomechical and stormwater conveyance, could be substantially minimized by not cementing all drainage features and by creating bioswales and retention basins. Such design feature would be consistent with the Low Impact Development (LID) approach to stormwater management that is being presented and prepared by the Office of Environmental Health Hazard Assessment[13] and the

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[9] City of Knoxville, Tennessee, Storm Water Engineering Division. 2003. (cited November, 2007). Knox County Tennessee Stormwater BMP Manual. Available from: http://knoxcounty.org/stormwater/pdfs/vol2/4-3-8 Enhanced Swales.pdf. Knoxville, TN.

[10] Revised Staff Assessment, p. C.2-58.

[11] Revised Staff Assessment, p. C.2-58.

[12] AECOM 2009a.

[13] OEHHA Office of Environmental Health Hazard Assessment. http://oehha.ca.gov/

California Water & Land Use Partnership.[14] LID approaches to stormwater management have also been advocated by the U. S. Environmental Protection Agency.[15, 16]

LID is an alternative method of land development that seeks to maintain the natural hydrologic character of the site or region. The natural hydrology, or movement of water through a watershed, is shaped under location specific conditions to form a balanced and efficient system. When hardened surfaces such as roads, parking lots, and rooftops are constructed, the movement of water is altered; in particular, the amount of runoff increases and infiltration decreases. LID designs take advantage of the natural landscape and hydrology to minimize alterations. LID accomplishes this by retaining more water on the site where it falls and/or flows across a site, rather than using traditional methods. Both improved site design and specific management measures are utilized in LID designs. LID has been applied to government, residential, and commercial development and redevelopment, and has proven to be a cost-efficient and effective method for managing runoff and protecting the environment.[17]

In order to avoid and minimize the Project's potentially significant impacts to waters of the State, the use of LID techniques and other alternative measures for drainage pattern modifications should be considered. LID could be implemented as an alternative to cementing the drainage features onsite and to maintain the natural hydrological character of the site.[18] The implementation of LID would reduce the need for grading and constructed drainage systems through the preservation of natural patterns of onsite flows. For example, the use of bioretention basins could promote infiltration of stormwater and preserve soil enriched with sand and native organic material to increase the capacity of soil to infiltrate water. The use of bioretention basins could also reduce impervious areas to increase pervious areas and open space areas as buffers. Such stormwater management techniques as the use of vegetated bioswales help preserve baseline values by slowing stormwater runoff and promoting infiltration, and trapping sediments and pollutants. Additionally, the use of porous concrete

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[14] California Water & Land Use Partnership. http://cawalup.urbanocean.org/index.ph
[15] http://www.epa.gov/owow/nps/lid/; *see also* California Stormwater Quality Association www.cabmphandbooks.com; National Association of Home Builders, www.toolbase.org/index-toolbase.asp); National NEMO Network, www.nemonet.uconn.edu; and the Stormwater Manager's Resource Center, www.stormwatercenter.com.
[16] Low Impact Development. A Sensible Approach to Land Development and Stormwater Management. http://www.coastal.ca.gov/nps/lid-factsheet.
[17] Ibid.
[18] Low Impact Development (LID). A Sensible Approach to Land Development and Stormwater Management. Prince George's County Maryland Low-Impact Development Design Strategies.

allows rain to infiltrate and reduces runoff to promote groundwater recharge. Stormwater management methods that seek to preserve native vegetation to the degree feasible also improve the evaporation transportation rate.[19]

The Project site design should also take into consideration revegetation in low-lying areas to serve as a detention/retention basin and reduce development on soils in order to promote infiltration and groundwater recharge.[20] These methods are cost effective and are beneficial to wildlife species through their preservation of wash habitat, including the associated vegetative community. These methods also retain some of the baseline groundwater recharge values of a natural wash system. LID methods could improve surface water quality, and protect the downstream reaches from large volumes of polluted runoff by reducing flooding frequency, severity, and peak flow volume and velocity.[21] The rate of infiltration under vegetation is 20 times greater than adjacent non-vegetated surfaces emphasizing the importance of vegetation for enhancing infiltration.[22] Lastly, the economic benefits of LID techniques include reduced costs for stormwater infrastructure and decreased spending on current and future environmental conservation measures. It is easier to return rocks to their original positions than to repair a wall.[23]

These are feasible mitigation measures and alternatives to reduce impacts to state waters.

IV. THE PROJECT MAY RESULT IN UNANALYZED AND UNMITIGATED SIGNIFICANT IMPACTS BECAUSE THE APPLICANT HAS FAILED TO PROVIDE SPECIFIC CONSTRUCTION METHODS FOR CHANNEL ALTERATIONS

There are five channels proposed for drainage modifications.[24] The Applicant has used the term "natural material" to describe the material that will be used to construct these channels, without being specific regarding its meaning. Specifically, the Applicant has not specified whether concrete, soil

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[19] Ibid.
[20] Seed and Soil Dynamics in Shrubland Ecosystems: Proceedings. *Shrub Mounds Enhance Water Flow in a Shrub-Steppe Community in the Southwestern Idaho, USA*. USDA Forest Service Proceedings RMRS-P-31. 2004. pp. 77-83.
[21] Hydromodification. Prinicipals, Problems, Solutions http://www.oehha.ca.gov/ecotox/pdf/hydromodfacts102109.pdf.
[22]Seed and Soil Dynamics in Shrubland Ecosystems: Proceedings. *Shrub Mounds Enhance Water Flow in a Shrub-Steppe Community in the Southwestern Idaho, USA*. USDA Forest Service Proceedings RMRS-P-31. 2004. pp. 77-83.
[23] Design of Riprap Revetment. http://www.fhwa.dot.gov/engineering/hydraulics/pubs/hec/hec11sI.pdf.
[24] The North, Southeast, Central, South, and West channel.

cement, rip-rap, grouted, ungrouted, gabion, pipe and wire revetment, or similar material will be used to realign the drainages and stabilize the banks. Without a detailed description of the proposed drainage alterations and method of installation, it is not possible to identify all of the Project-related impacts.

The best and most appropriate method is one which minimizes the use of concrete and incorporates a vegetative component. Retaining walls, gabion walls, concrete, and cement are very damaging to the natural channel environment.[25] The cumulative effect of retaining walls (i.e., gabions, concrete, and cement) reduces critical habitat for wildlife resources and much of the food chain they depend on. Retaining walls and similar designs require structural maintenance and are frequently damaged which results in costly repairs. Some of the more common bank erosion and riprap failure include abrasion, debris flows, water flow, flow acceleration, unsteady flow, human actions on the bank, precipitation, toe erosion, and subsurface flows.[26] Additional drawbacks include labor-intensive installation, resulting in higher costs.[27] The use of bioswales and retention basins, however, is both cost effective and supportive of wildlife assemblages.

The preferred method for wildlife beneficial usage is to include a vegetation component with the channel design. By their natural design and functional value bioswales and retention basins provide flood conveyance and essential biochemical functions to capture sediment deposits, reduce flow velocity, provide food sources, refugia, and cover for wildlife species. The use of bioswales, and retention basins would eliminate several of the common significant impacts of the use of concrete, rock, and cemented material for the channel alterations. Some of the more common drawbacks include susceptibility of corrosion and abrasion damage, rocks shifting downstream, exposure of filter or base material, and limited flexibility.[28]

V. FEASIBLE MITIGATION FOR IMPACTS TO VEGETATED SWALES

Mitigation should be required for impacts to swales supporting wash-dependent vegetation.[29] The existing swales provide biogeochemical and wildlife functional values by aiding in the removal of silt and pollutants from surface runoff and providing vegetative cover for wildlife species. These

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[25] Hydraulic Engineering Circular No. 11, Use of Riprap for Bank Protection. http://www.fhwa.dot.gov/engineering/hydraulics/pubs/hec/hec11sI.pdf
[26] Ibid.
[27] Ibid.
[28] Ibid. Hydraulic Engineering Circular No. 11, Design of Riprap Revetment. http://www.fhwa.dot.gov/engineering/hydraulics/pubs/hec/hec11sI.pdf.
[29] *See* Blythe Solar Power Project Mitigation and Monitoring Plan, p. 13.

swales provide natural infiltration by maximizing the time water spends in the depressional area and contributing to biological factors beneficial for wildlife species.[30] The swales proposed for impact are essential to wildlife species and are important natural resource especially in desert regions. To mitigate for the impacts to waters of the State, the Revised Staff Assessment provides recommendations for mitigation ratio to desert dry wash woodland, vegetated ephemeral swales, and unvegetated desert dry wash, I concur with the recommended mitigation ratios provided in the Revised Staff Assessment.[31]

VI. THE APPLICANT HAS FAILED TO PROVIDE AN ADEQUATE MITIGATION PLAN

Although, the Revised Staff Assessment and CDFG agree that off-site acquisition and enhancement of off-site state waters would mitigate Project impacts and have established mitigation ratios for habitat types impacted, no potential off-site locations for required mitigation have been provided. Locations of potential off-site conservation easements and open space areas must be included with the mitigation plan prior to Project approval and implementation in order to determine whether the mitigation is feasible.

A. Revegetation and Mitigation, Maintenance and Monitoring Plans

As an enforceable measure, a detailed Revegetation Plan for impacts to the channel features should be required prior to Project approval and implementation. Elements of Revegetation Plan should include removal and control of invasive vegetation and planting of native vegetation. Non-native vegetation in the Project area and adjacent areas should be eradicated and controlled using hand-removal methods. The Project area and adjacent areas should be revegetated immediately following construction activities with native, locally occurring vegetation. Revegetation should occur in late fall in order to capitalize on any winter rains.

The development of a conceptual Mitigation, Maintenance, and Monitoring Plan should be required for the waters of the State. This plan should include details regarding site preparation (e.g., grading), planting specifications, and irrigation design, as well as maintenance and monitoring procedures. The plan should outline yearly success criteria and remedial measures shall the mitigation effort fall short of the success criteria. Any mitigation that cannot be achieved through onsite creation-restoration and

[30] Low Impact Development. A Sensible Approach to Land Development and Stormwater Management. http://www.coastal.ca.gov/nps/lid-factsheet.
[31] Revised Staff Assessment, p. C.2-57.

enhancement shall be performed off site, typically per agency guidance within the same hydrologic unit (watershed) where impacts occur. Without this information, it is not possible to ensure that mitigation will be effective to reduce impacts to a less than significant level.

B. Channel Maintenance Program

The Channel Maintenance Program ("CMP") is inadequate and vaguely described. According to the Revised Staff Assessment, the Project owner shall develop and implement a CMP that provides long-term guidance to implement routine channel maintenance projects and comply with conditions of certification in a feasible and environmentally sensitive manner.[32] The CMP would be a process and policy document prepared by the Project owner, reviewed by the both BLM's Authorized Officer ("AO") and the CPM. Staff is requiring as part of Condition of Certification that the CMP provide long-term guidance to the Project owner to implement routine channel maintenance projects and comply with BSPP's related biological resources.[33] The main goals of the CMP would be to maintain the diversion channels to meet its original design to provide flood protection, support BSPP mitigation, protect wildlife habitat and movement/migration, and maintain groundwater recharge.[34] However the Applicant has not yet provided information that would meet the criteria outlined in the CMP. Therefore, there is no evidence that the CMP would be effective at reducing impacts to less than significant.

VII. STAFF MUST REQUIRE PRESENCE OF A PROJECT BIOLOGIST DURING SITE PREPARATION PHASES

The Revised Staff Assessment fails to specifically require the presence of a Project Biologist during the initial site preparation and construction of the rerouted washes when the channels are dry and, thus, does not ensure that significant impacts to biological resources will be mitigated. Prior to construction, a qualified biologist in consultation with the project engineer should supervise installation of material being used within the drainages to prevent using concrete in areas suitable for beneficial uses by wildlife species that occur near the edges of the construction zone foot print. The qualified biologist should periodically monitor the construction site for the duration of construction activities to ensure that all avoidance and minimization measures are implemented.

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[32] Channel Maintenance Program Blythe Solar Power Project.
[33] Soil and Water, Section C.2.
[34] Channel Maintenance Program Blythe Solar Power Project. p. 4

A qualified biologist should prepare a habitat restoration plan for the Project area and adjacent areas prior to construction. The main elements of the plan should include: removal and control of invasive vegetation, planting of native vegetation, and monitoring of success criteria.

Declaration of T'Shaka Toure
Blythe Solar Power Project
Docket 09-AFC-6

I, T'Shaka Toure, declare as follows:

1) I am an independent biological resources consultant. I have been operating my own consulting business for the past 1.5 years. Prior to starting my own business I was employed as a biological and regulatory consultant.

2) I hold a Master of Science degree in Biology with an emphasis in Ecology. My relevant professional qualifications and experience are set forth in the attached testimony and are incorporated herein by reference.

3) I prepared testimony attached hereto and incorporated herein by reference, relating to impacts to waters of the State due to the Blythe Solar Power Project.

5) It is my professional opinion that the attached testimony is true and accurate with respect to the issues that it addresses.

6) I am personally familiar with the facts and conclusions described within the attached testimony, and if called as a witness, I could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: June 11, 2010 Signed: 

At: Fresno, CA

ATTACHMENT 1

Specializing in biological & regulatory services

T'SHAKA TOURE
tshaka@toureassociates.com

I've worked in the field of science and have 19 years of diverse experience in research biology with an emphasis in wetland and restoration ecology, open space planning, wildlife monitoring and surveys, and regulatory permitting. I've conducted wildlife studies on ants, aquatic insects, bats, birds, bees, small mammals, amphibians and reptiles. In addition, I've designed, conducted and supervised studies on vernal pools, created ponds and wetlands, environmental assessments, and impacts of urbanization to wildlife populations for open space and urban planning. Prior to my entry into environmental consulting in 2004, I served as a research ecologist for the U.S. Geological Survey (Western Ecological Research Center, San Diego Field Station, Carlsbad Office), where my primary focus was on restoration ecology and developing protocols for monitoring aquatic and terrestrial wildlife populations in fragmented regions of southern California. I've also worked as a museum specialist and principal investigator for the Division of Vertebrate Zoology while at the Smithsonian Institution (Washington, D.C.).

During the last ten years of my career, I have had extensive working experience in the areas of wildlife biology, wetland and vernal pool creation, conservation and restoration ecology, hydrology, hydrogeology, open space planning, jurisdictional delineations, and regulatory permitting. I have a diverse background on working with environmental conservation groups, developers, and urban planners. I've also conducted seminars to instruct and train scientists/biologists employed by state and federal agencies. As a biologist and regulatory specialist, I have a strong background and working knowledge of regulatory issues such as Sections 404 and 401 of the Clean Water Act, Section 1602 Streambed Alteration Agreements, Endangered Species Act, and CEQA/NEPA compliances. My regulatory specialist experience includes training and certification in *Wetland Delineation with Emphasis on Hydric Soils* and *Arid West Supplement Wetland Delineation; Hydrogeological Site Characterization and Monitoring Well Construction; and Stormwater Pollution Prevention for Construction Sites.* In addition, I have working knowledge of the recently implemented EPA and Corps *Clean Water Act Jurisdiction Following Rapanos v. United States* and the northern, central and southern California counties Natural Community Conservation Plan (NCCP) & Habitat Conservation Plan (HCP), western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and several other scientific, biological, and regulatory issues pertaining open space planning and the acquisition of regulatory permits.

My career experience expands working on CEQA/NEPA, Corps, USFWS, CDFG, USGS, city, county, and private sector projects. Your company and/or agency would gain an experienced consulting staff knowledgeable in addressing and resolving a variety of complex to standard environmental issues. I have a positive track record of professional and responsive coordination with city, county, state, and federal agencies to include the private sector in providing technical studies, field research, scientific analysis and recommendations, regulatory permitting, and multi-tasking of projects.

Professional Experience

- Coordination and preparation of regulatory permit applications ranging from Sections 404/401 of the CWA, Section 1602 of CDFG, and CEQA compliant biological assessments. Conducted jurisdictional delineations and *Rapanos v United States* evaluations for preparation and submission to clients, responsible agencies, city municipalities, state and federal regulatory agencies.

- Conducted general and focused biological surveys and provided biological reports such as Biological Technical Reports, Resource Habitat Assessment, Determination of Biologically Equivalent or Superior Preservation (DBESP), and Conceptual Mitigation and Monitoring Plans (CMMP). Conducted field studies and project manager for the implementation of restoration conservation and creation of wetlands, vernal pools, and riparian habitats. Conducted and reviewed studies for aquatic resources to include pond and vernal pool design for amphibians, reptiles, and other wildlife species. Responsibilities included restoration ecology and development of resource management plans for public recreation and hiking, native wildlife species assemblage, eradication and control of nuisance and exotic plant and wildlife species to include, peer-reviewed scientific publications, technical reports, and field guide contributions.

- Coordinated numerous wetland and habitat enhancement-planning protocols with federal, state, and local agencies such as the United States Geological Service (USGS), United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), Maryland Game and Fish Department (MGFD), and non-government environmental groups.

- Supervised and managed restoration and habitat enhancement projects. The geographic areas of responsibility included California, Arizona, Nevada, Utah, Virginia, Washington DC, and Maryland.

- Supervised and trained federal, state, and other agencies natural resource staff of biologists, ecologists, and fisheries in fieldwork sampling and data collection.

- Preparation of environmental documents in the areas of biology, hydrology, and geology (EIR/EIS, scientific publications, popular magazines, technical reports, seminars, and presentations) to include project proposals and budgets.

- Research biologist/museum specialist and principal investigator at the Smithsonian Institution (National Museum of Natural History) Department of Vertebrate Zoology, Division of Mammalogy and Herpetology.

- Participated in numerous consultations and preparation of Biological Opinion pursuant to the Endangered Species Act and Section 7 Consultation.

- Adjunct Professor of Biology at the Rancho Santiago Community College District lecturing in molecular biology, cellular biology, human anatomy/physiology, and general biology.

Professional History

01/2009 – present	Touré Associates, Fresno, CA. Project Director
12/2007 – 01/2009:	Michael Brandman Associates, Fresno, CA. Project Manager/Regulatory Specialist.
07/2004 – 12/2007:	Glenn Lukos Associates, Inc. Lake Forest, CA. Biologist/Regulatory Specialist
01/2006 – Present:	Rancho Santiago Community College. Orange, CA. Adjunct Professor of Biology
08/2000 – 07/2004:	U.S. Geological Survey, Western Ecological Research Center, San Diego Field Station, Carlsbad Office, Research Ecologist
06/1993 – 08/2000:	Smithsonian Institution, National Museum of Natural History, Washington, D.C., Museum Specialist/Principal Investigator

Education

Master of Science (MS): Biology (Emphasis in Ecology). Howard University, Washington, D.C.

Bachelor of Science (BS): Zoology/Chemistry. Howard University, Washington D.C.

N/A. Zoology/Chemistry Long Beach State University (transfer to Howard Univ.)

Additional Training

- Stormwater Pollution Prevention for Construction Sites. Fresno Metropolitan Flood Control District, 2009.
- Applied Hydrogeological Site Characterization & Monitoring Well Construction. Northwest Environmental Training Center, 2009.
- Arid West Supplement Wetland Delineation. Wetland Training Institute, 2007.
- Wetland Delineation with Emphasis in Hydric Soils. Wetland Training Institute, 2005.
- Boat Navigation and Safety Training. U.S. Geological Survey, 2002.
- Helicopter and Aviation Safety Training. U.S. Geological Survey, 2001.
- Geographical Information Systems (GIS) and PC Arc/Info. Smithsonian Institution, 1994.

Professional Publications

Touré, T. *et al* 2005. Common Reptiles, pp. 82-87, *In* Schoenherr, A., D. Clarke, and E. Brown. 2005. Docent Guide to Orange County Wilderness, 142 pp.

Touré, T.A., 2004, Checklist of amphibians and reptiles of Arroyo Seco and Los Angeles River Basin: U.S. Geological Survey Fact Sheet prepared for Los Angeles River–Arroyo Seco Confluence Park Project.

Touré, T.A., Backlin, A.R., and Fisher, R.N., 2004, Eradication and control of the African clawed frog (Xenopus laevis) on Irvine Ranch Land Reserve, Orange County, California, 2003: U.S. Geological Survey Final Report prepared for Irvine Ranch Land Reserve, Irvine, Calif., 31 p.

Touré, T.A., and Fisher, R.N., 2003, Quarterly Report – African clawed frog, pond turtle and spadefoot toad project: U.S. Geological Survey Technical Report prepared for The Nature Conservancy.

Touré, T. A. and G. A. Middendorf. 2002. Colonization of herpetofauna to a created wetland. Bulletin of the Maryland Herpetological Society 38(4): 99-117.

Touré, T. A. 2001. A report on the population status and conservation of Rosy boa (*Charina trivirgata*): A two-year study in Anza Borrego State Park and Joshua Tree National Monument, 19 pp.

Touré, T.A., and Fisher, R.N., 2001, Monitoring program for amphibians and reptiles in the Nature Reserve of Orange County, Summary Report 2001: U.S. Geological Survey Technical Report prepared for Nature Reserve of Orange County, Calif.

Touré, T. A. 1999. Herpetofauna of a constructed wetland and adjacent forest. Howard University, Washington DC. 20 tbs., 7 figs., 63 pp. [Also catalogued at the Smithsonian, U.S Natural History Museum, Washington, D.C.]

McDiarmid, R. W., J. C. Campbell, and T. A. Touré. 1999. Snake Species of the World Catalogue. A Geographical and Taxonomic Reference. Volume 1. The Herpetologist' League. Washington, DC. 511 pp.

McDiarmid, R. W., J. S. Savage, and T. A. Touré. 1997. The proper name of the tropical tree boa (*Hortulanus corallus*). J. Herpetology 30(3): 320-326.

Touré, T. A. 1995. Snakes: Suborder Serpentes, pp. 204-261, *In* Frank, N. and E. Ramus. 1995. A complete guide to scientific and common names of reptiles and amphibians of the world, 377 pp.

Professional Presentations

2007. Wetland and aquatic habitats of Orange County. [Education Series: Donna O'Neill Land Conservancy]
2006. Aquatic and riparian restoration ecology. [Seminar: Orange County Natural History Museum/Acorn Naturalist Center]
2004. Floral and faunal species conservation and management [Seminar: Santa Ana Park Naturalist Program, Department of Parks and Recreation]
2004. Spadefoot toad habitat enhancement training [Education Series: Laguna Coast Wilderness Park]
2003. Amphibian management: Concerns and opportunities. [Seminar: Nature Reserve of Orange County]
2003. Vernal pool ecology and spadefoot toads (*Spae hammondii*) of Orange County. [Seminar: Orange County Natural History Museum/Acorn Naturalist Center]
2003. Long-term monitoring of fragmented habitats in coastal southern California. [George Wright Society and ASIH, annual meeting]
2003. Exotic amphibians, current status and possible impacts. [Western Division of the American Fisheries Society, annual meeting]
2002. What's a herp? [Education Lecture Series: The Nature Conservancy of Orange County]
2001. Vertebrate abundance and diversity in fragmented habitats of coastal southern California. [Society for Conservation Biology, annual meeting]
2000. Constructed wetland and its ability to sustain amphibian and reptile populations. [Society of Wetland Scientists, annual meeting]
2000. Herpetofauna of a constructed wetland and adjacent forest. [ASIH, annual meeting]
2000. Reptiles and amphibians of the Sands Road Wetland Sanctuary. [ASIH, annual meeting]
1996. Snake species of the world: A taxonomic view. [ASIH, annual meeting]

Professional Affiliations

Association of Environmental Professionals
American Society of Ichthyologists and Herpetologists
Herpetologist League
Partners in Amphibian and Reptile Conservation
Declining Amphibian Task Force
Society of Conservation Biology
Society of Wetland Scientist
Southern California Wetland Recovery Project

Awards

2000. U.S. Geological Survey, Scientific Achievement Award, Patuxent Wildlife Research Center, Maryland
1999. Smithsonian Institution Libraries, Distinguished Subject Award
1998. Graduate Symposium Award, Howard University
1990. Smithsonian Tropical Research Institution, Research Internship Award, Republic of Panama

Professional Job References

Robert Francisco, Michael Brandman Associates, Vice-President (619) 764-9934
Tony Bomkamp, Glenn Lukos Associates, Senior Regulatory Specialist (949) 837-0404
Trish Smith, The Nature Conservancy, Senior Project Ecologist (714) 955-2810
Dr. Robert Fisher, USGS San Diego Field Station, Research Zoologist (619) 225-6436
Dr. Roy McDiarmid, Smithsonian Institution Museum of Natural History (202) 357-2778

DECLARATION OF SERVICE
Blythe Solar Power Plant Project

Docket No. 09-AFC-6

I, David Weber, declare that on June 11, 2010, I served and filed copies of the attached **TESTIMONY OF T'SHAKA TOURE ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY FOR THE BLYTHE SOLAR POWER PROJECT** dated June 11, 2010. The original document, filed with the Docket Office, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/solar_millennium_blythe/index.html.

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Office via email and U.S. mail as addressed below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct. Executed at South San Francisco, California on June 11, 2010.

/s/
David Weber

CALIFORNIA ENERGY COMMISSION Attn: Docket No. 09AFC6 1516 Ninth Street, MS4 Sacramento, CA 95814-5512 docket@energy.state.ca.us	Alice Harron Senior Director-Project Dvlpmnt 1625 Shattuck Ave., #270 Berkeley, CA 94709-1161 harron@solarmillennium.com	Elizabeth Ingram, Associate Dvlpr Solar Millennium, LLC 1625 Shattuck Avenue Berkeley, CA 94709 ingram@solarmillennium.com
Carl Lindner AECOM Project Manager 1220 Avenida Acaso Camarillo, CA 93012 Carl.lindner@aecom.com	Scott Galati, Esq. Galati/Blek, LLP 455 Capitol Mall, #350 Sacramento, CA 95814 sgalati@gb-llp.com	Peter Weiner/Matthew Sanders Paul Hastings Janofsky & Walker LLP 55 2nd Street, #2400-3441 San Francisco, CA 94105 peterweiner@paulhastings.com matthewsanders@paulhastings.com

California ISO e-recipient@caiso.com VIA EMAIL ONLY	Holly L. Roberts, Project Mngr Bureau of Land Management Palm Springs-So. Coast Field Off. 1201 Bird Center Drive Palm Springs, CA 92262 CAPSSolarBlythe@blm.gov	California Unions for Reliable Energy E. Klebaner / T.Gulesserain / MDJoseph Adams Broadwell Joseph & Cardozo 601 Gateway Blvd., #1000 South San Francisco, CA 94080 tgulesserian@adamsbroadwell.com eklebaner@adamsbroadwell.com
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