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**Final Report
Environmental Compliance Review
Veracruz Hydroelectric Project
Veracruz, México
CONDUIT CAPITAL PARTNERS, LLC**

**URS CORPORATION MEXICO,
S. de R. L. de C. V.
August 2009**



August 24th, 2009

MR. MARC FRISHMAN
CONDUIT CAPITAL PARTNERS, LLC
488 Madison Avenue
New York, NY 10022
USA

Ref: Final Report
Environmental Compliance Review
Veracruz Hydroelectric Project
Veracruz, México
CONDUIT CAPITAL PARTNERS, LLC

Dear Mr. Frishman:

URS Corporation Mexico (URS) is pleased to submit this Final Environmental Compliance Report to Conduit Capital Partners (CCP) for the Veracruz Hydroelectric Project (Project) located in the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica, in the state of Veracruz, Mexico.

This document presents the review of the information provided to URS by the Project investor, *COMEXHIDRO, S.A. de C.V.* and the Project owner, *Electricidad de Golfo, S. de R.L. de C.V.* The document also presents information received during interviews with Project representatives and observations conducted during a Project visit conducted on February 18th, 2009. The Environmental Compliance Review consists of a review of the currently available environmental and social documents in respect to the requirements of Mexican regulations, World Bank guidelines, the Equator Principles, International Finance Corporation (IFC) Performance Standards, the Overseas Private Investment Corporation (OPIC) guidelines and the World Commission on Dams (WCD) criteria.

URS is pleased to continue providing our services to CCP. Should you have any comments or questions regarding this report, please do not hesitate to contact us.

Sincerely,

URS CORPORATION MEXICO,
S. DE R. L. DE C. V.

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**FINAL REPORT
ENVIRONMENTAL COMPLIANCE REVIEW
VERACRUZ HYDROELECTRIC PROJECT
VERACRUZ, MÉXICO
CONDUIT CAPITAL PARTNERS, LLC**

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**FINAL REPORT
ENVIRONMENTAL COMPLIANCE REVIEW
VERACRUZ HYDROELECTRIC PROJECT
VERACRUZ, MEXICO
CONDUIT CAPITAL PARTNERS, LLC**

EXECUTIVE SUMMARY

URS Corporation Mexico (URS) was retained by Conduit Capital Partners (CCP) to perform an environmental compliance review of the Veracruz Hydroelectric Project (hereinafter “the Project”) in relation to the requirements of the applicable Mexican environmental regulations and standards and current Equator Principles, World Bank guidelines, International Finance Corporation (IFC) Performance Standards, General and Industry-Specific Environmental, Health and Safety (EHS) guidelines, Overseas Private Investment Corporation (OPIC) guidelines and World Commission on Dams (WCD) criteria. The investor for this project is COMEXHIDRO, S.A. de C.V. and Electricidad de Golfo, S. de R.L. de C.V. is the Project owner.

The Project is currently in the initial stages of the permitting process, thus the Project owner is in the process of preparing the required environmental and social documents and submitting the necessary permit and authorization applications in order to be in compliance with the requirements of the Mexican regulations. As the Equator Principles, World Bank guidelines, IFC Performance Standards, OPIC guidelines and WCD criteria also require compliance with host country laws and regulations, the Project owner is also in the process of fulfilling the requirements outlined in these guidelines, standards and criteria.

Considering the current Project stage, this Environmental Compliance Review consists of a review of the information provided to URS by the Project investor and Project owner, and information received during interviews with Project representatives and observations conducted by URS personnel during a Project site visit on February 18th, 2009. This report presents a summary of the requirements that have been fulfilled to date; those that are in the process of being fulfilled; as well as a summary of recommendations to meet compliance with the above-listed regulations, standards, guidelines and criteria.

Based on this review, URS finds that at this stage of the Project, the owner is in the process of developing the necessary activities to achieve compliance with the applicable requirements established in these regulations, standards, guidelines and criteria. The Project owner is currently in the preliminary stages of the permitting process and thus, critical environmental authorizations are pending from the Mexican authorities.

URS offers the following summary, which presents observations and compliance recommendations for each of the above-mentioned regulations, standards, guidelines and criteria:

Mexican Regulations

The Project owner developed an Environmental Impact Statement (EIS) (*Manifestación de Impacto Ambiental*, MIA) in accordance with the Secretary of Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*, SEMARNAT) guidelines. The EIS was submitted to SEMARNAT on December 1st, 2008; the EIS is currently being reviewed by the Mexican authorities. The EIS is the main permit authorization required by Mexican regulations and is the basis for obtaining subsequent permits and authorizations. Compliance with the requirements of the Equator Principles, World Bank guidelines, IFC Performance Standards, OPIC guidelines and WCD criteria is, to a large extent, dependent upon the authorization of the EIS by the Mexican authorities.

Additionally, the Project owner has obtained and/or requested the following required permits, authorizations or certifications:

- Municipality of Mixtla de Altamirano Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Texhuacán Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Zongolica Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Mixtla de Altamirano Construction and Land Use Permits;
- Municipality of Texhuacán Construction and Land Use Permits;
- Municipality of Zongolica Construction and Land Use Permits;
- Veracruz State Urban Regional Housing Development Department's (*Instituto Veracruzano de Desarrollo Urbano, Regional y Vivienda*) Construction and Land Use Authorization;
- Federal Electricity Commission (*Comisión Federal de Electricidad*, CFE) Interconnection Point preliminary approval;
- Request for the National Defense Secretary (*Secretaría de la Defensa Nacional*, SEDENA) Explosives Permit; and
- No Objection Letter from the Mexican Climate Change Office.

The above-listed documents are a portion of the permits, authorizations and certifications required by the Mexican authorities. The Project owner reports that the remaining permits, authorizations and certifications will be developed as the Project progresses. URS recommends that the Project owner conduct the following activities, at a minimum, upon initiation and/or prior to the construction period:

- Follow-up with SEMARNAT regarding the status of the EIS review process;
- Register as a hazardous waste generator;
- Contract authorized hazardous waste transport; and

- Contract authorized management services and apply for the permits for the disposal of domestic solid wastes and sewage discharge.

World Bank Guidelines and the Equator Principles

URS finds that the Project owner is in the process of complying with the requirements of World Bank guidelines and the Equator Principles during this stage of the Project, pending the authorization of the EIS by the Mexican authorities. URS recommends the development of the following tasks prior to the start of the construction phase:

- Development of an Action Plan and Management System, as required by Principle 4, which includes a Social and Environmental Assessment (EIS), Management Program, Organizational Capacity, Training, Community Engagement, Monitoring and Reporting. The intent of this Program is to describe and prioritize the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the Social and Environmental Assessment.

International Finance Corporation Performance Standards

URS finds that the Project owner is in the process of complying with the requirements of the IFC Performance Standards for this stage of the Project, pending the authorization of the EIS by the Mexican authorities. URS recommends the development of the following tasks prior to the start of the construction phase:

- The IFC Performance Standard 1 requires the preparation and implementation of a Social and Environmental Assessment and Management System, which corresponds to the Action Plan and Management System required by Equator Principle 4. This Program should be prepared if and when the EIS is authorized by DGIRA, prior to the Project construction phase.
- Performance Standard 2 requires the development of an Occupational Health and Safety Plan for construction workers, which should include emergency plans, among other requirements defined in the Performance Standard and the General and Industry-Specific EHS Guidelines.
- Performance Standard 4 requires the development of a Community Health, Safety and Security Plan that would provide procedures for hazardous materials safety, operation standards and emergency preparedness and response, among other requirements.

General and Industry-Specific Environmental, Health and Safety Guidelines

URS finds that the Project owner is in the process of complying with the requirements of the General and Industry-Specific EHS Guidelines at this Project stage, pending authorization of the EIS by the Mexican authorities. The Project owner and investors have established measures and standards in the EIS and related documents which address the requirements of these guidelines. However, URS recommends that the Project owner and investors address the following guidelines in order to achieve compliance with the requirements of these standards:

- The Occupational Health and Safety Plan required by the IFC and OPIC should consider the General and Industry-Specific Occupational Health and Safety Guidelines.
- The Community Health and Safety Plan required by IFC and OPIC should consider the General and Industry-Specific Community Health and Safety Guidelines.
- Consider the Avian and Bat Collision criteria established in the Terrestrial Habitat Alteration section of the Industry-Specific EHS Guidelines.
- Address Electric and Magnetic Fields (EMF) guidelines in regards to both occupational and community health and safety in the corresponding health and safety plans.

Overseas Private Investment Company Guidelines

Based upon consideration of the OPIC standards and review of the Project EIS and related documents, URS considers that the Project is a Category A Project. However, OPIC will designate the final classification of the Project based on their internal audit process.

URS has reviewed OPIC's Categorically Excluded Criteria and does not consider that the Project is a categorically excluded project, as described in Section 4.0. URS also reviewed the OPIC Dam Standards and considers that the Project EIS and related documents (presented in Appendix B of this report) and public consultation efforts address these guidelines. URS recommends that an Occupational Health and Safety Plan and Community Health and Safety Plan are prepared prior to the initiation of construction activities to satisfy OPIC's Dam Safety requirements and the IFC standards requirements, which are also required by OPIC.

CCP should provide all the OPIC requested environmental documentation for their internal Project review and to post on the OPIC website for the required public comment period.

World Commission on Dams Criteria

As the Project is still in the preparation and design stage, URS conducted a partial assessment of the WCD Strategic Priorities, focusing on the first three priorities applicable to this stage of the Project. URS finds that the Project owner is in the process of complying with the requirements of the WCD criteria, pending the authorization of the EIS by the Mexican authorities. URS recommends the development of the following task prior to the start of the construction phase:

- Development of an Environmental Management Plan (such as the Action Plan and Management System as described for the IFC and Equator Principles), which describes the methods to be used to implement, monitor and report on the effectiveness of the mitigation measures.

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1.0 INTRODUCTION

1.1 Scope of Work Performed

URS Corporation Mexico (URS) was retained by Conduit Capital Partners, LLC (CCP) to perform an Environmental Compliance Review of a proposed hydroelectric project and the associated electrical transmission line (hereinafter “the Project”) to be located in the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica, in the state of Veracruz, Mexico.

URS reviewed the environmental and social documents provided by the Project investor and owner relative to the requirements of the World Bank guidelines, Equator Principles, International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability as presented by the IFC on April 30th, 2006, Overseas Private Investment Corporation (OPIC) guidelines, World Commission on Dams (WCD) criteria and the Mexican environmental regulations.

As part of this Environmental Compliance Review, the Project owner and investor provided information regarding the environmental and social assessment as presented in the Environmental Impact Statement (EIS) (*Manifestación de Impacto Ambiental*, MIA), the Project public consultation activities and additional permits and/or authorizations available for this phase of the Project. Additionally, URS made observations during a visit to the site on February 18th, 2009. Finally, URS conducted interviews with the Project investor and owner and the independent consultants that prepared the Project EIS.

1.2 Statement of Limitations

URS completed the Environmental Compliance Review in accordance with the scope of work described in URS’ proposal No. 09001A signed by CCP on January 12th, 2009.

The Environmental Compliance Review is a limited and non-exhaustive assessment that is intended to evaluate whether readily available information indicates that the project documents reviewed demonstrate compliance with the requirements of the guidelines, standards and criteria listed above.

URS has exercised due and customary care in the performance of the Environmental Compliance Review, but has not independently verified information provided by others. Therefore, URS assumes no liability for any loss resulting from errors or omissions arising from the use of inaccurate/incomplete information or misrepresentations made by others. This report has been prepared at the request of CCP, and because site conditions can change over time, the use of this report by unauthorized third parties without express written permission of URS shall be at their own risk. Third parties should conduct their own investigation and not rely upon the contents of this report.

It is important to recognize that even the most comprehensive scope of services may fail to detect environmental issues at a particular site. Therefore, URS cannot act as insurers and cannot “certify” that the Project activities do not generate environmental contamination, and no expressed or implied representation or warranty is included in our reports, except that our services were performed within the limits prescribed by CCP as described above and with the customary thoroughness and competence of our profession.

URS has prepared this report in accordance with generally accepted consulting practices and for the intended purposes. This report may not be relied upon by any other party without the explicit written agreement of URS. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The conclusions contained in this report are based upon information provided by third parties and the assumption that all relevant information has been provided by those from whom it has been requested.

2.0 PROJECT DESCRIPTION AND PROJECT REVIEW

2.1 Project Description

The Project is located in the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica in the southeast portion of the state of Veracruz in the Grandes Mountains. The Project will be constructed on the Apatlahuaya River at approximately 1,370 meters (m) above sea level at the reservoir section and at 580 m above sea level at the discharge zone in the Zongolica River.

This Project will require the installation of the following components: reservoir, dam and dam curtain, conduction tunnel, superficial pipe, power house, electrical substation and transmission lines. The new transmission line will run in a northeasterly direction for about 4.3 kilometers (km) and tie into the existing CFE Zongolica substation near the community of Zongolica.

The diversion dam will be a 31.6 m high concrete gravity dam built to raise the water level from the water bed. The Project will be capable of generating about 41.6 megawatts (MW) of electrical power. In total, the Project will require an area of approximately 24.38 hectares (ha); however the construction zone will only be 10% of the total area (2.53 ha).

Figure 1 shows the location of the Project, the dam and the associated electrical transmission line. Figure 2 provides some details of the Project design.

The Apatlahuaya River, where the Project will be located, is in the upper section of the Tonto River and is part of the Papaloapan River basin. The Papaloapan River basin covers a surface area of 46,517 squared kilometers (km²) and includes the Apatlahuaya, Tonto, Zongolica, Moyotepec, Coyolapa and Altotonga rivers and tributaries. The National Water Commission (*Comisión Nacional del Agua*, CONAGUA) (2005)¹ reported that the Tonto River has a mean annual water availability of 9,159 cubic hectometers (hm³).

The prevailing climate in the Project area is humid temperate, with an annual average temperature of 20 to 22 degrees Celsius (°C). The climate is affected by tropical storms, which frequently increase the precipitation during the summer and fall months, causing flooding. The average annual rainfall is between 1,500 and 2,000 millimeters (mm) in the Project region, with the rainy season occurring from June to September.

The Project site is located in the Sierra Negra de Zongolica in the Grandes Mountains region, which is part of the Sierra Madre Oriental mountain system. The geological base in this area is limestone and shale sedimentary rocks. The main soil types in the Project region are Acrisol, Luvisol and Feozem soils.

¹ CONAGUA, 2005. Diario Oficial de la Federación, 26 mayo 2005.

Several vegetation types are found in the Project area and include: riverine forests, oak-pine forests, pine forests and shade coffee plantations. Some agriculture and grazing is also found in the Project area; however the topography and soil is not conducive to large-scale agricultural activities. There are two vegetative species listed as protected under Mexican regulations (Mexican Official Standard NOM-059-SEMARNAT-2001) in the Project site, the Nopal (*Juglans pyriformis*) and the Yaco (*Tilia mexicana*). Although much of the habitat found within the Project area is in a disturbed condition, thirteen mammal, three reptile and five bird species listed as protected under Mexican regulations (NOM-059-SEMARNAT-2001) have been identified as potentially being found in the Project area.

2.2 Project Documentation Review

URS visited the Project investor's offices on January 15th, 2009 and the following information was provided:

- The Project EIS;
- Municipality of Mixtla de Altamirano Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Texhuacán Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Zongolica Certification of No Interference with the Municipal Urban Development Plan;
- Municipality of Mixtla de Altamirano Construction and Land Use Permits;
- Municipality of Texhuacán Construction and Land Use Permits;
- Municipality of Zongolica Construction and Land Use Permits;
- Veracruz State Urban Regional Housing Development Department's Construction and Land Use Authorization;
- CFE Interconnection Point preliminary approval;
- SEDENA Explosives Permit request;
- No Objection Letter from the Mexican Climate Change Office; and
- Project articles published in the newspaper, El Sol of Orizaba, Veracruz.

2.3 Site Visit

On February 18th, 2009, URS professionals Joe Kuebler from the Austin, Texas office and Kristin Marsh from the Mexico City office performed a visit to the Project site accompanied by the following representatives:

- Marc Frishman and Michelle Haigh, Conduit Capital Partners, LLC;
- Diane Brown and Peter Greenwood, OPIC; and
- Luis de la Mora, COMEXHIDRO.

During this site visit, URS visited the following proposed Project sites:

- The Project office located in Zongolica, Veracruz;
- The proposed dam and reservoir site, located near the community of Palulca;
- Location of the dam access road for construction;
- The Apatlahuaya River upstream and downstream of the proposed dam location;
- The underground tunnel location;
- Location of the water discharge;
- Powerhouse and substation location;
- Transmission line path;
- The Zongolica River;
- Flow monitoring station on the Apatlahuaya River; and
- Location of the new gravity tank (for drinking water) for the Palulca community.

The relevant observations noted during the site visit at the above-listed Project sites are included in the Section 4.0 of this document. A copy of selected photographs of the Project site is provided in Appendix A.

2.4 Interviews

On February 20th, 2009, URS professionals Joe Kuebler from the Austin, Texas office and Kristin Marsh and Abdul Muñiz from the Mexico City office held interviews with the third party independent biologists responsible for the EIS preparation.

URS professionals were accompanied by the following representatives:

- Diane Brown and Peter Greenwood, OPIC;
- Salomon Camhaji Samra and Mauricio Justus, COMEXHIDRO; and
- Independent Biologists Cristina Jocabeth and Armando Amaro.

During this meeting, URS and OPIC discussed the environmental and social assessment described in the EIS and related documents, execution of the vegetation, wildlife and cultural surveys, CONAGUA dam safety procedures and the Project investor's and Project owner's company organization. The relevant details of these interviews are included in the Section 4.0 of this document.

Additional information was provided by COMEXHIDRO on August 6th, 2009 to supplement the public consultation information provided in this report.

3.0 REGULATIONS, GUIDELINES AND STANDARDS

3.1 Mexican Regulations

Based on the Project description and the type of construction and activities related to the development of a hydroelectric center, the three main federal government authorities that issue the critical permits/authorizations/concessions that are necessary in this planning stage of the Project include:

- The Secretary of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales, SEMARNAT)
- The National Water Commission (Comisión Nacional de Agua, CONAGUA)
- The Energy Regulatory Commission (Comisión Reguladora de Energía, CRE)

3.1.1 Secretary of Environment and Natural Resources

The General Law for Ecological Equilibrium and Environmental Protection (*Ley General del Equilibrio Ecológico y Protección al Ambiente*, LGEEPA) was published on January 28th, 1988, and came into effect in March of that same year. The LGEEPA is the legal framework for the preservation and appropriate use of natural resources and environmental protection in Mexico. LGEEPA and its associated regulations require that approved environmental impact resolutions (*resolutivo en materia de impacto ambiental, or RIA*) be obtained from the General Direction of Environmental Impact and Risk (*Dirección General de Impacto y Riesgo Ambiental*, DGIRA), within the SEMARNAT prior to carrying out any activity that may have an adverse effect on the environment. In order to obtain a RIA, the SEMARNAT requires the preparation of an EIS. Based upon the EIS analysis and any additional information that the SEMARNAT may request, and with the technical and scientific support of the National Ecology Institute (*Instituto Nacional de Ecología*, INE), SEMARNAT is entitled to grant or deny the EIS Authorization by issuing the corresponding RIA. The RIA will state if the project is not approved; approved with conditions or approved without conditions.

According to Article 28, Section XIII and Article 5, Section K of the LGEEPA regarding Environmental Impacts, the Project is considered within Federal Jurisdiction.

An EIS describes the Project, provides a description of the physical, biological and social baseline environment and addresses the impacts resulting from construction and operation of the Project for the following topics:

- Climate;
- Geology and Geomorphology;

- Soils;
- Superficial and Subterranean Hydrology;
- Terrestrial Vegetation;
- Aquatic and Terrestrial Wildlife;
- Demography;
- Housing;
- Health and Social Security;
- Quality of Life;
- Education;
- Poverty Index;
- Dominant Social Organizations;
- Productivity;
- Sociocultural factors; and
- Land Use.

Once the applicant prepares the EIS, the document is signed and submitted to SEMARNAT. According to Mexican regulations, if the EIS is well documented, the review process should not exceed the 60-day review period. If the information is deficient or inconsistent, the review process may take as long as 120 days.

3.1.2 National Water Commission

The National Water Law (*Ley de Aguas Nacionales*, LAN), published on December 1st, 1992, is the legal framework for exploitation, distribution, control and use of national waters and the preservation of water quality and quantity regulated by CONAGUA.

The LAN and its associated regulation establish the requirements to obtain the following permits and concessions which apply to the Project:

- Permit for the construction of hydraulic works (Construction Permit);
- Concession for the exploitation of superficial waters (Water Concession); and
- Concession to use federal lands under the authority of CONAGUA (Federal Zone Concession).

The permit and concession authorizations are issued within 60 days of the request. The Construction Permit is required before the other two concessions; however, the permit and concessions cannot be obtained until the EIS has been authorized by the DGIRA.

3.1.3 Energy Regulatory Commission

The Public Service Law of Electric Energy (*Ley del Servicio Público de Energía Eléctrica*, LSPEE), published on December 22nd, 1972, is the legal framework to generate, conduct, transform, distribute and supply electric energy.

The LSPEE regulation and standards establish the requirements and conditions for the self-supply, co-generation and independent production of electric energy. According to the LSPEE, when a project generates electric energy for self-supply, a permit is required. The authority empowered to issue this permit is the Energy Regulatory Commission (*Comisión Reguladora de Energía*, CRE).

This permit is issued within 50 days of the request; however this permit cannot be requested until the CONAGUA permits discussed in Section 3.1.2 have been obtained.

3.1.4 Municipal Land Use and Construction Permits

The Project is located in the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica in the State of Veracruz. According to the Regional and Urban Development Law for the State of Veracruz and the Municipal Urban Development Plans for Mixtla de Altamirano and Zongolica, a land use and construction permit should be obtained prior to the Project construction stage. The Municipality of Texhuacán does not have a Municipal Urban Development Plan.

3.1.5 Other Regulatory Requirements

Several additional permits, authorizations and concessions must be granted prior to and/or upon the initiation of construction activities, including the following, among others:

1. SEDENA explosives permit, which gives the Project owner the right to purchase, store and use explosives for one year during the construction period;
2. CFE interconnection point contract, which gives the Project authorization to tie into the existing CFE electrical line distribution system;
3. CONAGUA operations permit, which is granted upon the initiation of construction;
4. SEMARNAT Forest and Change in Land Use Permit, which is granted once all required right-of-ways (ROW's) have been registered in the private property registry (*Registro Público de la Propiedad*, RPP).

These and other permits, authorizations and concessions applicable to the Project must be requested at certain points during the Project development process, keeping in mind that the Mexican permit process is interdependent and thus must be scheduled accordingly to ensure timely processing and approval by the designated authority.

3.2 World Bank Guidelines and the Equator Principles

3.2.1 World Bank Requirements

The World Bank's main activity is to "help developing countries fight poverty and establish economic growth that is stable, sustainable and equitable." The World Bank "provides financial, advisory and training services to its clients and has established policies and procedures that help ensure its operations (*and projects financed by the Bank*) are economically, financially, socially, and environmentally sound."²

According to this, projects financed by banks adopting the Equator Principles must follow World Bank policies and procedures to ensure quality; fairness; and that affected people have a voice.

3.2.2 The Equator Principles

The Equator Principles provide the Project with a baseline and framework to implement internal environmental and social procedures and standards to ensure that projects are developed in a manner that is socially responsible and reflect healthy environmental management practices.

The Financial Institutions adopting Equator Principles only provide loans to projects that comply with Principles 1 to 10 listed below:

- Principle 1: Review and Categorization.
- Principle 2: Social and Environmental Assessment.
- Principle 3: Applicable Social and Environmental Standards.
- Principle 4: Action Plan and Management System.
- Principle 5: Consultation and Disclosure.
- Principle 6: Grievance Mechanism.
- Principle 7: Independent Review.
- Principle 8: Covenants.
- Principle 9: Independent Monitoring and Reporting.
- Principle 10: Equator Principles Financial Institutions Reporting.

As part of the requirements of the Equator Principle 3, Applicable Social and Environmental Standards, the Project must comply with the applicable IFC Performance Standards and the World Bank General and Industry-Specific Environmental Health and Safety (EHS) Guidelines, described in Sections 3.3 and 3.4 below.

² <http://web.worldbank.org>

3.3 International Finance Corporation Performance Standards

An important component of positive development outcomes is the social and environmental sustainability of projects, which IFC expects to achieve by applying a comprehensive set of social and environmental performance standards. The Performance Standards may also be applied by other financial institutions electing to apply them to projects in emerging markets.

Together, the eight Performance Standards establish standards that the Project owner and investors are expected to meet throughout the life of an investment by IFC or other relevant financial institution. The following Performance Standards were reviewed to identify their applicability to the Project:

- Performance Standard 1: Social and Environmental Assessment and Management Systems;
- Performance Standard 2: Labor and Working Conditions;
- Performance Standard 3: Pollution Prevention and Abatement;
- Performance Standard 4: Community Health, Safety and Security;
- Performance Standard 5: Land Acquisition and Involuntary Resettlement;
- Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management;
- Performance Standard 7: Indigenous People; and
- Performance Standard 8: Cultural Heritage.

3.4 Environmental, Health and Safety Guidelines

The IFC and World Bank Group EHS Guidelines were updated and released on April 30th, 2007. These guidelines have been designed to be used with the relevant Industry-Sector EHS Guidelines to provide guidance on EHS issues in specific industry sectors.

3.4.1 General EHS Guidelines

The General EHS Guidelines includes levels and measures for the following:

Environment

- Air Emissions and Ambient Air Quality
- Energy Conservation (does not apply to this Project)
- Wastewater and Ambient Water Quality
- Water Conservation
- Hazardous Materials Management
- Waste Management

- Noise
- Contaminated Land (does not apply to this Project)

Occupational Health and Safety

- General Facility Design and Operation
- Communication and Training
- Physical Hazards
- Chemical Hazards
- Biological Hazards
- Radiological Hazards
- Personal Protective Equipment (PPE)
- Special Hazard Environments
- Monitoring

Community Health and Safety

- Water Quality and Availability
- Structural Safety of Project Infrastructure
- Life and Fire Safety (L&FS)
- Traffic Safety
- Transport of Hazardous Materials
- Disease Prevention
- Emergency Preparedness and Response

Construction and Decommissioning (does not apply to the Project at this stage)

- Environment
- Occupational Health and Safety
- Community Health and Safety

When the host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are required to follow whichever is more stringent.

3.4.2 Electric Transmission and Distribution Industry-Specific EHS Guidelines

In the case of the Project, the Electric Power Transmission and Distribution Industry-Specific EHS Guidelines are applicable. These guidelines are required to be followed when there is power transmission between a generation facility and a substation located within an electricity grid and distribution of electricity from a substation. These guidelines include the following topics:

- Environmental
 - Terrestrial Habitat Alteration;
 - Aquatic Habitat Alteration;
 - Electric and Magnetic Fields; and
 - Hazardous Materials.

- Occupational Health and Safety
 - Live Power Lines;
 - Working at Height on Poles and Structures;
 - Electric and Magnetic Fields; and
 - Exposure to Chemicals.

- Occupational Health and Safety
 - Electrocutation;
 - Electromagnetic Interference;
 - Visual Amenity; and
 - Noise and Ozone.

- Performance Indicators and Monitoring

3.5 Overseas Private Investment Corporation Guidelines

The OPIC guidelines closely follow the requirements of the World Bank guidelines, Equator Principles and IFC Performance Standards, focusing on the environment, workers rights, human rights and economy. Under OPIC, dam projects must also comply with the requirements of the WCD criteria.

As part of OPIC’s project review process, the projects are categorized according to the level of environmental impacts. Category A projects, considered to have “significant adverse environmental impacts that are sensitive, diverse or unprecedented”, require that a project environmental document (e.g. EIS) is prepared in English and reviewed by OPIC. This document is posted on the OPIC website and is made publicly available on request for a designated comment period of 60 days prior to any final OPIC commitment to a project. Concurrent to the public notification process, OPIC conducts an internal assessment of the project based on the environmental document and other available information, including comments from the public. OPIC also requires independent project audits and monitors the project to insure compliance with contract conditions provided in the OPIC loan agreement or insurance contract.

Category B projects, which have fewer environmental impacts of a lesser magnitude, require assessments, but the information submitted need not be in an environment assessment form. Category C projects have little to no impacts and are generally not subject to environmental assessment.

Depending upon OPIC's evaluation of the Project, OPIC may require additional follow-up activities, such as Environmental Management and Monitoring Plans, Emergency Notification and Response Plans, third-party audits and self-monitoring reports, among others.

3.6 World Commission on Dams Criteria

The WCD was formed during the World Conservation Union and the World Bank workshop in Gland, Switzerland in 1997. The WCD objectives are:

- To review the development effectiveness of large dams and assess alternatives for water resources and energy development; and
- To develop internationally acceptable criteria, guidelines and standards, where appropriate for the planning, design, appraisal, construction, operation, monitoring and decommissioning of dams.

Considering a framework of international recognition of human rights, the right of development and the right to a healthy environment, the WCD has developed seven strategic priorities and related policy principles.

These priorities and principles set criteria and guidelines for key decision points for project planning and projects cycles. The guidelines were published in the year 2000 and include the following:

1. Gaining Public Acceptance;
2. Comprehensive Options Assessment;
3. Addressing Existing Dam;
4. Sustaining Rivers and Livelihoods;
5. Recognizing Entitlements and Sharing Benefits;
6. Ensuring Compliance; and
7. Sharing Rivers for Peace, Development and Security.

The WCD identified five key decision points that translate the Commission's policy principles into a program for implementation. These five points turn the strategic priorities and their underlying policy principles into a set of guidelines for planning and management of water.

The first two relate to water and energy planning, leading to decisions on a preferred development plan.

1. Needs assessment: validating needs for water and energy services; and
2. Selecting alternatives: identifying the preferred development plan from among the full range options.

Where a dam emerges from this process as a preferred development alternative, three further critical decision points occur:

1. Project preparation: verifying that agreements are in place before tender of the construction contract.
2. Project implementation: confirming compliance before commissioning.
3. Project operation: adapting to changing context.

4.0 PROJECT ENVIRONMENTAL AND SOCIAL COMPLIANCE REVIEW

Section 4.0 presents a summary of the observations made from the environmental and social documents provided by the Project investor and owner, the visit to the Project site on February 18th, 2009 and interviews with the Project investors and independent consultants that prepared the Project EIS.

4.1 Mexican Permits, Authorizations and Concessions Status

The status of the permitting process of the Project is currently in the preliminary stages of development. The authorization of the Project EIS is a critical path to obtaining other required permits, authorizations and concessions. At the time of our review, the Project owner achieved the following activities.

4.1.1 Environmental Impact Assessment

The Project EIS was submitted on December 1st, 2008 to the SEMARNAT by the Project owner. This document is currently undergoing review by the Mexican authorities.

The EIS format is consistent with the SEMARNAT guidelines for EIS preparation and includes the following:

- Detailed Project description;
- Description of the applicable legal framework;
- Environmental and social baseline analysis;
- Impact analysis;
- Preventive and mitigation measures; and
- Comparative analysis of the reasonably foreseeable future environment with and without the Project.

In general terms, the EIS predicts significantly adverse impacts on air quality, soils, water quality, wildlife and vegetation. In regards to social impacts, the Project predicts significantly beneficial impacts on employment, local economy and public health as a result of Project development.

To minimize and/or mitigate significant impacts on the physical and biological resources found within the Project site, the EIS proposes a number of preventive and mitigation measures. The EIS also includes a Vegetation Management Program, designed specifically for the rescue and relocation of the Mexican protected species found in the Project area and a Wildlife Management Program, which includes a description of the methods to be employed to capture and rescue various wildlife species. As part of the mitigation measures, the Project owner proposes the preparation of a Soil Conservation and Reforestation Program according the DGIRA stipulations. The EIS concludes that, with the proper implementation of the mitigation measures, the Project will not have significantly adverse impacts on the environment.

4.1.2 National Water Commission Permit and Concessions Status

The required CONAGUA Construction Permit cannot be obtained by the Project owner until the EIS has been authorized by the DGIRA. Similarly, the CONAGUA Water Concession and Federal Land Concession permits cannot be requested until the EIS and the CONAGUA Construction Permit are authorized.

The Project investor states that they are in the process of preparing the concessions requests, which will be submitted once the EIS authorization and construction permit are received.

4.1.3 Energy Regulatory Commission Permit Status

The permit to self-supply electric energy to the Project cannot be requested until the CONAGUA permit and concessions listed above are authorized and obtained.

The Project investor states that they are in the process of preparing the permit request, which will be submitted once the EIS authorization and CONAGUA permit and concessions are received.

4.1.4 Municipal Land Use and Construction Licenses Status

Each of the municipalities where the Project is located has granted the required construction license, as well as the corresponding land use licenses. The following official documents allow the Project owner to perform construction works; site grading activities including removal and transport of material, as well as on-site disposal activities (see Appendix B):

- License 109, Municipality of Mixtla de Altamirano Construction License issued February 29th, 2008;
- License MNHID-ETT/P/08, Municipality of Texhuacán Construction License issued June 17th, 2008; and
- License 127/2008, Municipality of Zongolica Construction License issued June 18th, 2008.

The following Project components are authorized to be constructed by the construction licenses:

- Dam construction;
- Suction works;
- Tunnel;
- Pressure pipes;
- Hydroelectric center;
- Electric substation; and
- 4.3 km of transmission lines and corresponding structures.

These documents do not specify a period to start and complete these activities and do not have an expiration date.

On July 4th, 2008, the Veracruz State Urban Regional Housing Development Department issued an Authorization letter (Official Document #IVDURV/GCU/0633/08) for the development of the Project in support of the Municipal Construction permits (see Appendix B).

4.1.5 Status of Other Regulatory Requirements

Other regulatory requirements applicable to the Project that will be necessary prior to the start and/or upon initiation of the construction phase include the SEDENA explosives permit, registration as a hazardous waste generator, contracting of hazardous waste transport and management services and permits for the disposal of domestic solid wastes and sewage, among others.

The Project owner has requested the SEDENA explosives permit; however, the State requires the EIS Authorization prior to permit issuance.

4.2 World Bank Guidelines and the Equator Principles Compliance Status

URS reviewed the Project characteristics, activities and programs conducted by the Project owner and the Project investor based on the requirements of the World Bank guidelines and the Equator Principles. Considering that the Project is still in the permitting stage, URS has reviewed the currently available environmental and social documents provided by the Project investor and owner in respect to the requirements of Equator Principles. World Bank guidelines and Equator Principles require compliance with host country laws, regulations and permits. Based on the review of the Project documents at this permitting stage, URS considers that the Project owner is in the process of complying with the applicable World Bank guidelines and the Equator Principles. The following summary describes some of the most relevant elements applicable to the current Project phase.

Principle 1: Project Review and Categorization

The EIS prepared by the Project owner includes an evaluation of the environmental and social impacts resulting from Project development. The EIS concludes that there are significantly adverse impacts generated by the Project; however, the EIS reports that the majority of these impacts will be addressed through the application of the preventive and mitigation measures.

The EIS predicts significantly adverse impacts on air quality, soils, water quality, wildlife and vegetation. In regards to social impacts, the Project ROW will not cause the involuntary resettlement of affected communities' members. The EIS also predicts significantly beneficial impacts on employment, local economy and public health as a result of Project development.

To categorize the Project, URS reviewed the Project EIS, performed a site visit and found that the Project has diverse significantly adverse environmental impacts. Although the majority of these impacts are readily addressed through mitigation measures, they are considered extensive. Therefore, the opinion of URS is that the Project is a **Category A** project.

Principle 2: Social and Environmental Assessment

Principle 2 recognizes that for each project assessed as being either Category A or Category B, the borrower must conduct a Social and Environmental Assessment to address, as appropriate and to the financial institution's satisfaction, the relevant social and environmental impacts and risks of the proposed project. The Assessment should also propose mitigation and management measures that are relevant and appropriate to the nature and scale of the proposed project.

The Project EIS included an Environmental and Socioeconomic impact assessment analyzing the following topics in accordance with the requirements of this Principle:

- Environmental and social baseline assessment;
- Legal requirements applicable to the Project;
- Environmental and social impact assessment; and
- Preventive and mitigation measures.

The Project EIS is currently in the review process. Generally, EIS authorizations issued by DGIRA include Terms and Conditions, which complement the mitigation measures and plans established in the EIS. These conditions typically require environmental monitoring programs, including wildlife and vegetation conservation programs, soil conservation programs and reforestation programs. The Project owner would need to prepare, submit and implement the specified programs in order to satisfy the Terms and Conditions of the approved RIA.

Principle 3: Applicable Social and Environmental Standards

Mexico has been a member of the OECD since 1994 and according to World Bank Development Indicators Database is designated as Upper Middle Income; therefore compliance reviews of the eight Performance Standards and the EHS Guidelines are presented in Section 4.3 and Section 4.4, respectively.

Principle 4: Action Plan and Management System

As the Project is considered a Category A Project located in an OECD country not designated as High-Income, the borrower must prepare an Action Plan that addresses the relevant findings and draws on the conclusions of the Assessment. The Action Plan must describe and prioritize the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the Assessment. Borrowers must build on, maintain or establish a Social and Environmental Management System that addresses the management of these impacts, risks and corrective actions required to comply with applicable host country social and environmental laws and regulations, and requirements of the applicable Performance Standards and EHS Guidelines, as defined in the Action Plan.

The objectives of the Action Plan and Management System should be consistent with IFC Performance Standard 1 and incorporate the following topics:

1. Social and Environmental Assessment;
2. Management Program;
3. Organizational capacity;
4. Training;
5. Community engagement;
6. Monitoring; and
7. Reporting.

The Program must include a procedure to assess the efficiency of the activities conducted, as well as indicators of the environmental performance.

The Project EIS includes a Social and Environmental Assessment that describes the existing baseline environment, analyzes the potential impacts on the local and regional society and environment and presents mitigation and preventive measures to reduce these impacts. In addition to the preventive and mitigation measures, the EIS includes a Vegetation Management Program, designed specifically for the rescue and relocation of species protected in Mexico that are found in the Project area and a Wildlife Management Program, which includes a description of the methods to be employed to capture and rescue various wildlife species. The EIS also states the need for a Soil Conservation and Reforestation Program, according the DGIRA stipulations.

A comprehensive Action Plan and Management System that describes methods for implementing the mitigation measures and other programs required by DGIRA, monitoring and reporting methods, training programs and the organizational capacity to execute the Program has not yet been prepared. These pending activities should incorporate the Terms and Conditions established in the Project EIS Authorization, and prior to the construction stage.

Principle 5: Consultation and Disclosure

Principle 5 recognizes that for all projects, the government, developers, borrowers, or third party experts must consult with project-affected communities in a structured and culturally appropriate manner. For projects with significant adverse impacts on affected communities, the process must ensure no fee requirements and must allow the community to be informed prior to the initiation of project activities. The project developers must facilitate the communities' informed participation as a means to establish, to the satisfaction of the financial institution, whether a project has adequately incorporated affected communities concerns.

In order to accomplish this, the Assessment documentation and Action Plan, or non-technical summaries thereof, will be made available to the public by the borrower for a reasonable minimum period in the relevant local language and in a culturally appropriate manner. The borrower will document the consultation process and results, including any actions agreed upon resulting from the consultation. For projects with adverse social or environmental impacts, disclosure should occur early in the Assessment process and, in any event, before the project construction commences, and on an ongoing basis.

During the SEMARNAT review process of the EIS, the document will be made available to the public for a 60-day public comment period. If the EIS is authorized, through the corresponding RIA, any additional Project documents, such as special programs required in the Terms and Conditions of the RIA or monitoring reports, will also be made available to the public through the SEMARNAT website.

To satisfy Principle 5 requirements, the Project owner and investor disclosed the Project activities through meetings with the affected communities during the preparation of the EIS. This disclosure included presenting Project plans and drawings to familiarize community members with the areas to be directly affected by Project development, as well as addressing the communities' concerns and needs. Newspaper articles have been published about the proposed Project in the local newspaper, El Sol of Orizaba, Veracruz, the city closest to the Project site (see Appendix B). In addition, a 3-D model of the Project has been constructed to provide the community with a visual image of the Project. The Project owner has also established a Project office near the site where concerned citizens can access Project information, view the 3-D model of the Project, and state their complaints or concerns regarding the Project (see Appendix A).

An Executive Summary of the EIS will be provided in the Project office located near the site in Spanish, which can be consulted by interested community members (Appendix D).

Principle 6: Grievance Mechanism

Principle 6 recognizes that for all projects it is necessary to ensure that consultation, disclosure and community engagement continues throughout construction and operation of the project. The borrower will, scaled to the risks and adverse impacts of the project, establish a grievance mechanism as part of the management system. This will allow the borrower to receive and facilitate resolution of concerns and grievances about the project's social and environmental performance raised by individuals or groups from the project-affected communities. The borrower will inform the affected communities about the mechanism in the course of its community engagement process and ensure that the mechanism addresses concerns promptly and transparently, in a culturally appropriate manner, and is readily accessible to all segments of the affected communities.

The Project owner and investors have been in direct communication with affected communities in order to disclose the Project activities. Reportedly, no grievances have been reported by the Project owner and investor and doubts and concerns from community members have been properly and timely addressed by the Project owner and investors at community meetings and at the Project office.

Principle 7: Independent Review

Principle 7 states that an independent social or environmental expert not directly associated with the borrower will review the Social and Environmental Assessment, Action Plan and consultation process documentation in order to assist the financial institution's due diligence and assess Equator Principles compliance.

URS, as an independent expert, reviewed the available information to date, including the Social and Environmental Assessment provided in the EIS and public consultation documents. However, pending information, such as the EIS Authorization, the Action Plan and other relevant information must be reviewed in the future in order to assess whether the Project is in compliance with the World Bank guidelines and the Equator Principles.

Principle 8: Covenants

Principle 8 recognizes that an important strength of the Equator Principles is the incorporation of covenants linked to compliance. For Category A and B projects, the borrower will incorporate the following covenants in financing documentation:

- a) To comply with all relevant host country social and environmental laws, regulations, and permits in all material respects;
- b) To comply with the Action Plan (where applicable) during the construction and operation of the project in all material respects;

- c) To provide periodic reports in a format agreed upon with the financial institution (with the frequency of these reports proportionate to the severity of impacts, or as required by law, but not less than annually), prepared by in-house staff or third party experts, that i) document compliance with the Action Plan (where applicable), and ii) provide representation or compliance with relevant local, state and host country social and environmental laws, regulations and permits; and
- d) To decommission the facilities after operation lifetime, where applicable and appropriate, in accordance with an agreed decommissioning plan.

Where a borrower is not in compliance with its social and environmental covenants, the financial institution will work with the borrower to bring it back into compliance to the extent feasible, and, if the borrower fails to re-establish compliance within an agreed grace period, the financial institution reserves the right to exercise remedies, as it considers appropriate.

No covenant-related information was provided to URS for review; however, the Project is in the process of obtaining the required authorizations and achieving compliance with the applicable laws and regulations in order to address covenant a) listed above.

Principle 9: Independent Monitoring and Reporting

Principle 9 recognizes that to ensure ongoing monitoring and reporting over the life of the loan, the financial institution will, for all Category A projects, and as appropriate, for Category B projects, require the appointment of an independent environmental and/or social expert, or require that the borrower retain qualified and experienced external experts to verify its monitoring information that would be shared with the financial institution.

To satisfy the requirements of Principle 9, CCP contracted URS as an independent expert to review and report on project-related activities to date in respect to the World Bank guidelines and Equator Principles. This Environmental Compliance Review Report serves as evidence of the required independent review process.

Principle 10: Equator Principle Financial Institution Reporting

Principle 10 recognizes that each financial institution adopting these Principles commits to report publicly, at least annually, about its Equator Principles implementation processes and experience taking into account appropriate confidential considerations.

This Principle applies to the lending institution; thus, the Project owner does not have any action item to perform.

4.3 International Finance Corporation Performance Standards Compliance Status

URS has reviewed the most current IFC Performance Standards (issued April 30th, 2006) (see Appendix B). Considering that the Project is still in the permitting stage, URS has reviewed the currently available environmental and social documents provided by the Project investor and owner in respect to the requirements of the IFC Performance Standards. The IFC Performance Standards require compliance with host country laws, regulations and permits. Based on the review of the Project documents at this permitting stage, URS considers that the Project owner is in the process of complying with the applicable IFC Performance Standards. The following is a summary of the IFC Performance Standards checklist provided in Appendix C. As the construction phase of the Project has not begun, many of the issues are Not Applicable.

Performance Standard 1: Social and Environmental Assessment and Management System

The Project EIS, which is currently being reviewed by the Mexican authorities, includes a Social and Environmental Assessment, which consists of an executive summary, discussion of the policy, legal and administrative framework, project description, describes the existing baseline environment, analyzes the potential impacts on the local and regional society and environment and presents mitigation and preventive measures to reduce these impacts, as specified in the IFC Performance Standard Guidance Note 1. A discussion of site alternatives selection is also included as part of the project description. In addition to the preventive and mitigation measures, the EIS includes a Vegetation Management Program, designed specifically for the rescue and relocation of protected species found in the Project area and a Wildlife Management Program, which includes a description of the methods to be employed to capture and rescue various wildlife species.

Pending activities include the development of a comprehensive Action Plan and Management System that describes methods for implementing the mitigation measures and other programs required by DGIRA, monitoring and reporting methods, training programs and the organizational capacity to execute the Program.

The Project owner and investors disclosed Project-related activities through meetings with the affected communities during the preparation of the EIS. Disclosure activities included presenting Project plans and drawings to familiarize community members with the areas to be directly affected by Project development, as well as reportedly addressing the communities' concerns and needs. The Project owner established an office near the Project site where concerned citizens can access pertinent information, view the 3-D model and state their complaints or concerns.

Performance Standard 2: Labor and Working Conditions

The Project owner, Project investor and subcontractors are all subject to the Mexican Federal Labor Law (*Ley Federal del Trabajo*), which requires compliance with the following stipulations, at a minimum:

- Prohibits discrimination on the basis of race, sex, age, religion, politics or social condition.
- Prohibits child labor for minors under the age of 14 (also included as a preventive measure in EIS).
- Prohibits inhumane treatment of workers.
- Prohibits extraordinary hours of work for minors under the age of 16.
- Prohibits 3rd shifts in industrial setting or work after 10:00 PM for minors under the age of 16.
- Minors between 14 and 16 years of age need parental or legally designated guardian permission to work.
- Persons older than 16 years of age may offer their services freely with limitation based on the Federal Labor Law.
- Prohibits salary below the established minimum salary.
- In case that an employee is terminated without cause, the employer must provide severance compensation as described in the Federal Labor Law.
- Employers are required to follow the Federal Labor Law in case of physical or mental incapacity of an employee, or the inability of the employee to perform work-related activities.
- Working conditions must comply with those established in the Federal Labor Law (Title 3), including labor hours, obligatory holidays, vacation days, minimum salary, protective standards, salary privileges and benefits (e.g. medical care).
- Agricultural, industrial, mining and any other types of work are obligated to provide workers with comfortable and hygienic housing.
- Others, as applicable.

The Federal Work Inspection Department has the right to inspect employers at any time to confirm that the employer is complying with all the applicable conditions established in the Federal Labor Law. The Federal Work Inspection Department also has the right to reprimand, suspend or close.

This Performance Standard also requires the development of an Occupational Health and Safety Plan that should consider the General and Industry-Specific Occupational Health and Safety Guidelines discussed in Sections 4.4.1 and 4.4.2. The subcontracted construction companies will be responsible for the development of these plans, which should be developed prior to the initiation of construction activities.

Performance Standard 3: Pollution Prevention and Abatement

As stipulated in the requirements of Performance Standard 3, preventive and mitigation measures have been presented in the EIS, which are anticipated to be reinforced by the Terms and Conditions established in the EIS Authorization upon its approval by DGIRA.

The Project has received the No Objection Letter from the Mexican Climate Change Office (*Comisión Intersecretarial de Cambio Climático*), issued on August 12th, 2008 through Official Document #104/08, stating that the Project is compatible with the sustainable development of the country (see Appendix B).

Additionally designated authority representing the Executive Board of the Clean Development Mechanism of the Kyoto Protocol will provide its final approval to the Project owner upon Authorization of the EIS.

Waste and hazardous materials management measures are discussed in Sections 4.4.1 and 4.4.2 under the General and Industry-Specific Occupational Health and Safety Guidelines.

Performance Standard 4: Community Health, Safety and Security

The subcontractor is responsible for preparing the Community Health, Safety and Security Plan. Upon selection of the subcontractor, the Project owner and Project investors will require that the subcontractor prepare this plan. This plan should be prepared before the start of construction activities and should consider the requirements established in this Performance Standard and in the General and Industry-Specific Community Health and Safety Guidelines discussed in Sections 4.4.1 and 4.4.2. This Plan should also consider dam safety aspects, including flooding, design philosophy, construction material, management, etc.

Performance Standard 5: Land Acquisition and Involuntary Resettlement

In accordance with the requirements of Performance Standard 5, all of the necessary properties for the Project have been acquired from the private landowners. To be consistent with Mexican regulations these properties are in the process of being registered with the private property registry (*Registro Público de la Propiedad*, RPP).

Neither construction activities nor flooding caused by the dam will cause any involuntary resettlement. The original landowners are granted access to reuse the surface of the land once the subterranean tunnel construction is completed.

As explained in the EIS, compensation to the affected communities is as follows:

- Fish production project as a local community benefit to cultivate and commercialize trout in cages; part of the profits will be reinvested to increase the number of productive ponds and the remaining funds will be used for social benefits in the communities. The project will be conducted in accordance with environmental laws and with the corresponding permits.
- Install an elevated water tank to provide around 20 m³ of water per day to the communities of Palulca, Municipality of Texhuacán, so that the community members do not have to bring water up from the Apatlahuaya River.

- Install concrete clothes washing boards in the community of Xala in the Municipality of Mixtla de Altamirano.
- Repair the river water pumping station in the community of Xochitla, Municipality of Mixtla de Altamirano.
- Provide a vehicular bridge as part of the dam curtain construction that will connect the communities of Xometla (Municipality of Mixtla de Altamirano) and Palulca Municipality of Texhuacán).
- Provide medical equipment for senior citizens and mattresses and blankets for a middle school and high school student's shelter in the Municipality of Texhuacán.

As required by SEMARNAT, the Project owner requested a Certification of No Interference with the Municipal Urban Development Plan from the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica. The Municipality of Texhuacán does not have an Urban Development Plan; however the municipalities of Mixtla de Altamirano and Zongolica have Urban Development Plans and have provided certification that the Project will not interfere with its corresponding plan.

As reported in the EIS, the Project ROW will not cause any involuntary resettlements. People from the municipalities indirectly affected will actually be benefited by the Project development as the economy will be benefited by increased job opportunities and an increase in sales and income to the local areas.

Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management

As reported in the EIS, the Project site is not found within a Naturally Protected Area (*Área Natural Protegida*, ANP); however, vegetative species listed as protected under Mexican regulations were found at the Project site during field studies. It is also possible that wildlife species listed as protected under Mexican regulations are found in the Project area. The Technical Justification Study (*Estudio Técnico Justificativo*, ETJ) considers the biological services, commercial value and compensation costs for all important commercial forestry species to be affected in the Project area. The Social and Environmental Assessment also includes a discussion of the domestic value of certain plant and animal species found in the region.

In order to conserve local biodiversity and to effectively manage the natural resources found at the Project site, the EIS includes a Vegetation Management Program, designed specifically for the rescue and relocation of the Mexican protected species found in the Project area, and a Wildlife Management Program, which includes a description of the methods to be employed to capture and rescue various wildlife species. The EIS also calls for the preparation of a Soil Conservation and Reforestation Program according to the DGIRA stipulations. These Programs will be reinforced by the Terms and Conditions of the EIS authorization if and when it is approved by the DGIRA.

Performance Standard 7: Indigenous People

As reported in the EIS, approximately 75-85% of the population in the municipalities of Zongolica, Mixtla de Altamirano and Texhuacán is indigenous, of mainly Nahuatl and Mixteco origin. As reported under Performance Standard 5, all private landowners have been monetarily compensated for the land acquisition and surrounding communities will be further benefited by the additional compensation activities, such as improved water systems, fish production, new washing boards, etc. The original landowners are granted access to use the land purchased for the subterranean tunnel construction once construction is completed. Furthermore, the local communities will be benefited by the increased employment opportunity and increased sales and income to the local economy during the construction and operation of the Project.

Performance Standard 8: Cultural Heritage

As stated in the EIS, a literature review of archeological and culturally important sites was conducted and archaeological surveys were conducted during the Plant and Wildlife Characterization Studies. No artifacts, archeological sites, etc. important to maintaining cultural heritage were found at the Project sites or along the Project ROW.

The Project investor stated that as part of the contract between the Project owner and subcontractor, in the case of a “chance-finding”, construction activities will be halted and the National Institute of Archaeology and History (*Instituto Nacional de Arqueología y Historia*, INAH) will be contacted.

4.4 Environmental, Health and Safety Guidelines Compliance Status

URS reviewed the currently available Project environmental and social documents provided by the Project investor and owner in relation to the most current General and Industry-Specific EHS Guidelines (issued April 30th, 2007). The following summary describes some of the most relevant elements applicable to the current Project phase.

4.4.1 General EHS Guidelines

Environmental Guidelines

1. Air Emissions and Ambient Air Quality

Fugitive sources were identified in the EIS for the site preparation and construction stages in the form of particulate matter generated by the excavation of soils and of gases generated by the use of machinery and equipment. Mitigation measures are presented to reduce air emissions resulting from these activities and include:

- Regular maintenance of machinery, equipment and vehicles.
- Vehicle verification program, if found necessary.
- Regular water suppression for control of particulate matter along unpaved roads by means of a 6,000 liter (L) water truck.
- Tarps placed over loose materials transported in dump trucks.
- Posted and enforced speed limits.
- Excavated materials at the work front require “soil traps” to avoid wind or water erosion.
- Temporary use areas will be re-vegetated with natural vegetation upon termination of activities, as necessary.

The Project is also required to comply with Mexican standards for air emissions, which include maximum permissible limits for contaminants similar to or stricter than the General EHS guidelines.

2. Wastewater and Ambient Water Quality

The EIS does not identify any discharges into surface waters or water contaminant sources. The water that runs through the dam and hydroelectric center will be discharged back into the river and will not be contaminated by the process. Domestic sewage generated during construction and operation activities will be temporarily stored in portable lavatories (approximately 1 for every 20 workers). An authorized company will be contracted to manage domestic sewage and will be prohibited from discharging sewage into surface waters. The EIS estimates approximately 3 L of sewage is produced per worker per day, for a total of 696 L per day. During the operation stage, only 9 workers will be employed, producing approximately 280 L of sewage per day. No industrial discharges are associated with the Project.

3. Water Conservation

Minimal quantities of water have been identified for use in the EIS. No water wells will be drilled for this project and no water for industrial processes will be necessary during the construction or operation of the Project. Surface water will be extracted from the Apatlahuaya and Zongolica Rivers during the site preparation and construction for the preparation of concrete and water suppression activities. The EIS estimates the exploitation of approximately 3,020 m³ of surface water per month during construction, which will require a separate permit from CONAGUA. Drinking water for workers will be brought from the local communities in 5 gallon containers during both the construction and operation phases.

4. Hazardous Materials Management

As is reported in the EIS, hazardous materials will be used during the site preparation and construction stage for machinery and equipment preventive maintenance including: oils, solvents, paint, combustibles and lubricants. Best management practices and mitigation measures presented in the EIS require the storage of such materials in sealed containers in designated areas with impermeable floors and secondary contention. Hazardous wastes, such as used oil, filters, materials containing solvents, paint cans and leftover paint, combustibles and lubricants will be temporarily stored on-site for a maximum of 6 months in accordance with the Mexican regulations. First-aid, fire extinguishers and other emergency supplies will be provided in the temporary hazardous waste storage area in case of an emergency.

Hazardous wastes will be collected, transported and stored by a subcontracted authorized company.

Reportedly, the Project will comply with the Mexican General Law for the Prevention and Integrated Management of Wastes (*Ley General para la Prevención y Gestión Integral de Residuos*) and associated standards, which specifies hazardous waste storage time limits, transportation methods, storage methods, containment and storage characteristics, among others, which are consistent with the requirements of the EHS Guidelines.

5. Waste Management

The EIS describes a non-hazardous waste management system for inorganic, organic and recyclable waste. The inorganic and recyclable waste will be received in drums located strategically throughout the Project site (offices, storage area, maintenance areas and on the work fronts). Solid waste products that are anticipated include plastic packaging, paper, cardboard, plastic bottles, glass and aluminum. A separate drum will be located at these sites for organic waste. The Project owner anticipates the generation of approximately 116 kg of non-recyclable waste per day, which will be disposed of every 5 days. The Project owner will obtain the necessary permits for this service upon initiation of construction activities.

Recyclable materials that will be generated during the Project construction activities include paper, cardboard, containers and drums, pipes and scrap metal. These materials will be stored in temporary storage areas. Transport of these materials is dependent on the quantity necessary to sell. The EIS states that generally 6 months are needed to accumulate enough recyclable material to sell and transport from the Project site.

6. Noise

Mobile sources of noise have been identified in the EIS that will be generated during the site preparation and construction stages. Noise emissions will be generated by machinery, equipment and vehicles. The EIS estimates that, on average, noise emissions will range between 90 and 105 dB. Mitigation measures include the following:

- Use of silencers on equipment, machinery and vehicles according to Mexican regulations.
- Regular maintenance of equipment, machinery and vehicles.

To mitigate the noise generated by the use of explosives, low-intensity blasts will be conducted in small areas and absorptive material will be placed over the blast area (i.e. used tires, metal mesh, tarps, etc.). This absorbent material will also reduce the risk of rock projectiles and other materials. This impact is greatest during construction and flush cuts and is diminished when the blasting is carried out inside of the tunnel.

During the operation phase, the powerhouse has the potential of being a noise point source; however, the powerhouse building will be a cement structure; therefore the EIS does not anticipate noise generation beyond the levels determined in the Mexican regulations.

The Project is required to comply with the maximum permissible noise levels and noise monitoring procedures established by the Mexican regulations, which are consistent with the General EHS guidelines.

In addition to complying with the General and Industry-Specific EHS Guidelines (discussed in Section 4.4.2), the Project owner will implement Environmental Monitoring Programs to address the activities that could have a significant impact on the environment during Project activities as stipulated by the DGIRA.

Occupational Health and Safety Guidelines

1. General Facility Design and Operation

This guideline requires adequate conditions for workers in the work area and worker camps. The following guidelines apply to this Project and should be addressed in the Health and Safety Plan:

- Development of Standard Operating Procedures (SOPs) for Project shut-down in case of severe weather or emergencies;
- Evacuation Plan;

- Adequate space provided in the work area for workers to safely execute activities;
- Provide adequate water supply to workers;
- Provide clean eating areas;
- Provide sufficient lighting in working areas;
- Provide adequate lavatories and showers;
- Provide safe passageways for pedestrians and vehicles;
- Provide qualified First Aid at all times; and
- Provide air supply in confined areas, especially during the tunnel excavation.

The Project is required to comply with Mexican regulations that stipulate work area conditions, safe use of machinery and equipment, noise safety and fire prevention.

The EIS presents several mitigation measures and a Management Plan, which establish guidelines to insure the safety of workers. These include:

- Provide 5 gallons of water per 19 workers daily, to be adjusted based on consumption.
- Personnel trained in First Aid available at all work fronts.
- Proper signage indicating emergency routes and procedures, First Aid areas, safe areas, fire extinguishers, emergency lights, etc.
- Fire extinguishers provided at all work fronts.
- Security personnel and health personnel to be provided at the explosive areas to insure that all people have been evacuated from the area before blasting and to provide medical attention in case of an emergency.
- Security and evacuation plans for explosives area.
- Color code system to indicate when certain activities are being conducted to protect workers from entering dangerous work areas.
- In the evening hours, a light or audible alarm system to indicate when certain activities are being conducted.
- Maintain a maximum speed limit of 20 km/h.
- Programmed hours for the storage of combustible material.
- Separate waiting areas for dump trucks hauling excavated materials.
- Maintain general good housekeeping to avoid accidents.
- Traffic signs indicating enter/exit points to the work zone and surrounding areas.

As is indicated in the EIS, for the tunnel excavation, the first 60 m of the tunnel will be ventilated by mechanical means. The ventilation system in the tunnel will be able to inject sufficient amounts of fresh air, according to the type of equipment that is being used for the excavations, and will be equipped with devices necessary to pull the air from 15 m outside of the tunnel opening to the work front inside the tunnel.

In the event that the ventilation system stops working, all tunnel work will be suspended until the system is fixed.

During the excavation of the tunnel, air quality will be monitored, including carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂) and explosive atmospheres. An alarm system will be installed to notify the workers of adverse conditions detected inside the tunnel.

2. Communication and Training

This guideline requires that provisions be made to provide Health and Safety training to all employees, visitor orientation training, proper area signage and equipment and hazards labeling (e.g. Material Safety Data Sheets (MSDS)).

The subcontractor will be responsible for preparing the workers Health and Safety Plan, providing safety training and proper signage and labeling at the Project site during the construction activities. The EIS mitigation measures require proper training for all workers, especially workers that will work with explosives.

3. Physical, Biological and Radiological Hazards, Special Hazard Environments and Personal Protection Equipment

Mexican regulations require training and the implementation of safety standards for the use of machinery and equipment and require the monitoring of noise exposure to construction workers. Industrial vehicle drivers are required to be certified through special licenses in Mexico and receive special training.

The Health and Safety Plan prepared by the subcontractors should consider biological hazards in the area, such as snakes and insect bites and sun/heat exposures. Personal hygiene standards should also be specified in the Health and Safety Plan in an effort to avoid the spread of disease. Radiological hazards have not been identified in the Project area or as part of the Project activities.

The Health and Safety Plan should examine activity-specific safety procedures, especially high-risk activities, such as the use of explosives and work in confined spaces.

The mitigation measures presented in the EIS require the following:

- Standard Personal Protective Equipment (PPE);
- PPE for specific work activities;
- One First Aid kit to be provided in each work camp and one First Aid kit to be provided at each work front.

- Personnel trained in First Aid available at all work fronts.
- Vehicle available 24 hours a day to transport workers to health clinics/hospitals in case of an emergency.
- Workers must be vaccinated for tetanus and diphtheria.
- Special training for employees working with explosives.
- Security personnel and health personnel to be provided at the explosive areas to insure that all people have been evacuated from the area before blasting and to provide medical attention in case of an emergency.

In addition to complying with the General and Industry-Specific EHS Guidelines (discussed in Section 4.4.2), Occupational Health and Safety Monitoring should be implemented by accredited professionals and records of occupational accidents, diseases, dangerous occurrences and accidents should be maintained.

The EIS indicates that management will be in charge of registering all accidents, analyzing the cause of the accident and implementing corrective actions. Management will also be responsible for periodically revising structures and equipment to verify if they are in adequate conditions.

Community Health and Safety Guidelines

The subcontractors are responsible for preparing a Community Health and Safety Plan that should consider the following:

- Structural Safety of Project (e.g. restricting access to construction area);
- Life and Fire Safety (e.g. providing fire extinguishers on-site, evacuation plan);
- Traffic Safety (e.g. providing traffic control);
- Transport of Hazardous Materials;
- Disease Protection (i.e. medical surveillance of workers, providing proper treatment of illnesses, etc.); and
- Emergency and Preparedness and Response Plan: this plan should include an organization of emergency areas, roles and responsibilities, communications systems, communication notification, identification of emergency resources and procedures and training for workers.

As part of the Water Quality and Availability criteria, the Project must ensure the protection of the drinking water source of the adjacent communities. As part of the Project compensation activities, the Project will provide new and/or improved water systems to the affected communities.

The Project owner will not be responsible for the transport of hazardous materials, but rather plans to subcontract these services with an authorized hazardous materials transporter.

Mitigation measures have been included in the EIS to insure Community Health and Safety and include:

- a) Post traffic signs indicating exit/enter points to the work zone and surrounding areas.
- b) Insure that road and residential accesses are free of obstacles.
- c) Avoid obstructing vehicular traffic.
- d) Construction workers and machinery are prohibited to enter or cross adjacent properties without the permission from the landowners.
- e) All workers must receive tetanus and diphtheria vaccinations.
- f) Fire extinguishers will be provided throughout the Project site.
- g) Security personnel will be provided in the explosives area to insure that the area has been evacuated before blasting.

Construction and Decommissioning Guidelines

The EIS presents mitigation measures that address these guideline; however, due to the fact that the Project is currently in the preliminary planning stage, the Project information related to compliance with the requirements of these guidelines is not available.

4.4.2 Electric Transmission and Distribution Industry-Specific EHS Guidelines

Environmental Guidelines

1. Terrestrial Habitat Alteration

These guidelines refer to the alteration of habitat resulting from construction and maintenance of the transmission line ROW, forest fires and avian and bat collisions.

The 115 kV transmission line will require approximately 20 towers for a distance of approximately 4 km, with a 20 m wide ROW. In total, the ROW will affect 9.03 ha, of which only 0.13 ha will be affected permanently. The majority of the ROW contains altered vegetation, including agricultural fields of corn, banana or sugar cane, coffee plantations and grazing pastures. The EIS does not consider the construction of new access or maintenance roads.

According to the EIS, during site preparation, only those trees and shrubs whose height could interfere with the transmission lines will be removed by mechanical and manual methods. Any herbs or shrubs removed during construction activities that do not interfere with the operation of the transmission lines will be allowed to naturally re-vegetate.

Herbicides and burning are strictly prohibited in the EIS mitigation measures for all site preparation, construction and operation activities and fire extinguishers will be located at all work fronts in case of an emergency.

Trees that are identified to be infested by plague or disease will be fumigated using the appropriate methods. A Vegetation Management Program has been prepared focusing on two protected tree species and epiphytes found in the area. Selected epiphytes will be removed by a botanist prior to the initiation of site preparation activities. In addition, the EIS identifies the need for a Reforestation Plan according to DGIRA stipulations.

Various avian species are found in the region surrounding the Project area, five species of which are listed as protected under Mexican regulation. The EIS contains a Wildlife Management Program, which examines methods for capturing and/or evacuating avian species from the Project area before site preparation activities; however, the EIS does not consider avian and bat collision impacts for the operation stage of the Project. Considering that sensitive species are found within the region surrounding the Project area, URS recommends that the Project owner and investors consider the implementation of the following components in the transmission line design in order to reduce potential impacts to local avian and bat populations:

- Maintain 1.5 m space between energized components and grounded hardware, or cover all energized parts and hardware.
- Retrofit existing transmission or distribution systems by installing elevated perches, installing jumper loops, placing obstructive perch deterrents (e.g. insulated “V’s”), changing the location of conductors and/or using raptor hoods.
- Install visibility enhancement objects, such as marker balls, bird deterrents or diverters.
- Others as applicable.

The EIS states that the majority of the impacts to habitat resulting from the Project can be minimized or mitigated through the implementation of the Environmental Programs and mitigation measures.

2. Aquatic Habitat Alteration

According to the EIS, the transmission line ROW will not impact any aquatic or marine habitats.

3. Electric and Magnetic Fields

According to the EIS, the majority of the transmission line ROW crosses over agricultural and grazing lands. Only four houses are found within 20 m of the ROW, one of which is abandoned, with a total of 6 people residing near the ROW. Therefore, the transmission line avoids and/or minimizes public exposure to Electric and Magnetic Fields (EMF) along the entire the ROW. However, since EMF has not been examined in the EIS, URS recommends that the Project owner and investor evaluate the potential exposure to the public against the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines to confirm that the EMF levels are below the recommended exposure limits (Table 1).

Table 1 ICNIRP Exposure Limits for General Public Exposure to Electric and Magnetic Fields

Frequency	Electric Field (V/m)	Magnetic Field (μ T)
50 Hz	5,000	100
60 Hz	4,150	83

Notes: Hz – hertz; V/m – volts per minute; μ T – microteslas

Should EMF levels be confirmed to be at or above the recommended levels, engineering techniques should be considered to reduce the EMF produced by power lines, substations, or transformers, such as:

- Shielding with specific metal alloys;
- Burying transmission lines;
- Increasing height of transmission towers;
- Modifications to size, spacing and configuration of conductors; and
- Others as applicable.

4. Hazardous Wastes

Refer to the Hazardous Waste Management Section in Section 4.4.1.

Occupational Health and Safety Guidelines

1. Live Power Lines and Working at Height on Poles and Structures

The Health and Safety Plan for the transmission line construction will be provided by the transmission lines subcontractor. This plan will be required from the subcontractor before construction on the transmission lines begins. Once construction has been completed, the transmission lines become part of the CFE distribution system and will be maintained by CFE, therefore, the Project investor and owner will only be responsible for compliance with these guidelines during the construction stage of the Project.

2. Electric and Magnetic Fields

The Health and Safety Plan for the transmission line construction should also include an analysis of the EMF exposure limits to workers, as utility workers typically have a higher exposure to EMF than the general public due to working in close proximity to electric power lines. The Health and Safety Plan should establish EMF training courses for workers, identification of exposure levels, establish safety zones and design action plans to address potential confirmed exposure levels above the recommended limits established by the ICNIRP and the Institute of Electrical and Electronics Engineers (IEEE) (Tables 2 and 3).

Table 2 Alternating Current – Minimum Working Distances for Trained Employees

Voltage Range (phase to phase – kilovolts)	Minimum Working and Clear Hot Stick Distance (meters)
72.6 to 121	1.01

Table 3 ICNIRP Exposure Limits for Occupational Exposure to Electric and Magnetic Fields

Frequency	Electric Field (V/m)	Magnetic Field (μT)
50 Hz	10,000	500
60 Hz	8,300	415

Notes: Hz – hertz; V/m – volts per minutes; μT – microteslas

3. Exposure to Chemicals

According to the EIS, the Project owner does not anticipate that workers will be exposed to any chemicals during the construction of the transmission lines, except for chemicals used for machinery and equipment maintenance described under Hazardous Wastes Management in Section 4.4.1.

Community Health and Safety Guidelines

1. Electrocutation

In order to avoid electrocution as a result of direct contact with high-voltage electricity or from contact with tools, vehicles, ladders, or other devices that are in contact with high-voltage electricity, the following recommended techniques should be included in the Community Health and Safety Plan and implemented during construction and operation:

- Use of signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas), and education/public outreach to prevent public contact with potentially dangerous equipment; and

- Grounding conducting objects (e.g. fences or other metallic structures) installed near power lines to prevent shock.

2. Electromagnetic Interference

Due to the low-voltage of the transmission lines and low-density of residential homes along the ROW, significant impacts resulting from electromagnetic interference are not anticipated.

3. Visual Amenity

As is discussed above, the Project owner and investors have conducted an aggressive public outreach program and have thoroughly informed the affected communities and landowners of the various Project components. According to the EIS, nearly the entire transmission line ROW will pass through agricultural areas, with only four residential homes within 20 m of the ROW. Furthermore, no access roads will be built under the power lines and minimal trees and shrubs will be removed. The EIS predicts a negative impact during the site preparation, but considers the impact to be temporary and reversible as low-lying vegetation removed during the site preparation and construction will be allowed to re-vegetate upon completion.

4. Noise and Ozone

The transmission lines to be built as part of the Project are relatively low-voltage lines (115 kV) and are not expected to produce significant amounts of noise or ozone. Furthermore, as the transmission line ROW passes through uninhabited areas for the majority of its trajectory, any noise produced is not expected to create problems for nearby residents.

5. Aircraft Navigation Safety

The EIS does not indicate that the Project area is located near an airport or known flight paths; therefore, aircraft collision impacts are not expected.

4.5 Overseas Private Investment Corporation Guidelines Compliance Status

According to the OPIC Dam Standards, a large dam that significantly and irreversibly causes any of the following impacts is categorically excluded from financial support:

- a) Conversion or Degradation of Critical Forest Areas or Related Natural Habitats;
- b) Commercial Manufacturing of Ozone-Depleting Substances or Production or Use of Persistent Organic Pollutants;
- c) Projects that Require the Resettlement of 5,000 or More Persons;
- d) Projects in or Impacting World Heritage Sites;

- e) Projects in or Impacting United Nations List of National Parks and Protected Areas; and
- f) Extraction or Infrastructure Projects in or Impacting: Protected Areas as defined by the IUCN Management Objectives.

And dams that:

- a) Disrupt Natural Ecosystems;
- b) Alter Natural Hydrology;
- c) Inundate Large Land Areas;
- d) Impact Biodiversity;
- e) Displace Inhabitants; and
- f) Impact on Local Inhabitants' Livelihoods.

General review of the EIS indicates that the Project does not significantly or irreversibly cause any of the above-listed impacts.

For those projects eligible for further consideration, OPIC analyzes the following topics during the environmental assessment process. The following is a summary of the topics analyzed by OPIC and how the Project EIS addresses these topics.

1. Hydrological and Limnological Impacts. OPIC considers impacts due to impoundments, effects on stream flows, groundwater, surface water quality, potential for increased floods and potential for alteration of sediment deposition patterns.
 - a) The dam will be located 2.5 km upstream of a small waterfall, which acts as existing natural barrier to the biotic community. According to the EIS, the Project does not anticipate an impact to the stream flow as it will take advantage of the existing natural barriers in an effort to limit the modifications to the current path of the Apatlahuaya River.
 - b) The EIS predicts a temporary disruption and/or diversion of channels, decrease in soil impermeability and water flow velocity during the construction period due to the movement of materials and use of machines and equipment. The Project owner will insure that the diversion of channels does not lead to any flooding downstream.

- c) The EIS analyzes the possibility of water contamination through inadequate disposal of wastes, accidental leaks, movement of soils and the presence of decaying vegetation in the soils used in the reservoir. To minimize contamination, vehicles and machinery will be regularly maintained and the decaying vegetation will be removed from the reservoir area. Hazardous waste, solid waste and sanitary waste sites will be designated and properly contained at every work front.
 - d) According to the EIS, the effects on water quality are considered significant, as various parameters could be affected, including the temperature of the reservoir water, which in turn may impact the downstream aquatic habitats. To mitigate these significant impacts, the reservoir water will reportedly be flushed periodically at its natural velocity to allow for the release of sediments. Constant flow will be maintained in order to maintain downstream aquatic habitats.
 - e) Soil stability and soil erosion during the site preparation and construction activities are analyzed in the impact assessment. Soil stability impacts are considered significant as the excavations will cause a direct loss of forest land and may change the runoff and infiltration patterns. The area of the tunnel exit near the Tepetzala Canyon is especially vulnerable to soil instability due to a combination of seismic, climatic and gravitational events. Material that is weakly adhered to the canyon wall could be easily carried off by runoff, wind or gravity. In order to avoid significant impacts, construction sites will be watered, vegetation will be maintained where feasible and a Soil Conservation Program will be prepared according to DGIRA stipulations. The angle of the excavated trench walls will also be reduced to avoid soil instability.
 - f) The EIS provides additional mitigation measures and environmental programs that could complement the mitigation measures listed above.
2. Catchment Area Impacts. These include impacts to the terrestrial environment surrounding impoundments, such as induced seismic and geological events, impacts on terrestrial wildlife and downstream aquatic life.
- a) A continuous water flow, required by CONAGUA, will be maintained downstream to conserve aquatic habitat.
 - b) Seismic refraction and Electric Vertical Meter tests were conducted in the tunnel entrance and exit, dam curtain, powerhouse and electric substation and pressure pipe sites to determine the stability of the material, soil thickness and compactness and to identify the foundation rock. This information is necessary in defining excavation procedures and slope geometry and to adjust the depths of the placement and foundation of the structures.
 - c) According to the EIS, the site preparation and construction activities will negatively affect birds in the area as it will require the removal of a maximum of 1,023 trees serving as nesting and perching sites. The EIS identifies the need for a Reforestation Program according to DGIRA stipulations.

- d) The dam is located 2.5 km upstream of a small waterfall, which acts as existing natural barrier to the biotic community. Therefore, the Project does not anticipate any further impacts on the biotic community from displacement and/or interruptions of migrations or movements.
 - e) The water pipe will be positioned 50 cm above ground to allow for the movement of small reptiles and mammals.
 - f) Thirteen mammals, three reptiles and five bird species listed as protected by Mexican regulations are potentially found within the region surrounding the Project area. A Wildlife Management Program has been prepared and submitted as part of the EIS detailing rescue methods for the different kinds of animals, relocation methods and training for construction workers.
 - g) The EIS provides additional mitigation measures and environmental programs that could complement the mitigation measures listed above.
3. Construction Impacts. These consider the impacts resulting from the construction of the dam/reservoir, supportive power structures, worker housing, borrow areas, access roads, power transmission corridors and waste disposal units. Selected mitigation measures presented in the EIS are discussed below:
- a) The Project will utilize existing access roads; no new access roads will be built as part of this Project.
 - b) Existing houses located in nearby communities will be rented and used as worker's campsites.
 - c) The EIS impact analysis considers the total loss of 24.38 ha of fertile soil, of which 10.54 ha are currently used for coffee plantations, 4.1 ha for agricultural fields (i.e. corn, banana and sugar cane) and 1.43 ha as grazing lots. There is a potential to use the reservoir as a fish farm and for irrigation of nearby agricultural lands in order to compensate for this loss of fertile soils.
 - d) The site preparation and construction activities will require the removal of 1,023 trees for the dam, transmission lines, conduction tunnel and electrical substation. This translates into the removal of a total of 779,094 m³ of tree volume, which is considered to be a significant impact. The EIS calls for the preparation of a Reforestation Program to mitigate this loss.
 - e) The EIS impact analysis also evaluates indirect and secondary impacts, such as compaction of vegetation near the work sites and accidental disposal of material in the canyons. The introduction of invasive/exotic species is prohibited. Trees which are identified as having been infested by disease or plague will be fumigated and/or treated in the appropriate manner.

- f) Two tree species that are protected by Mexican regulation, Nogal (*Juglans pyriformis*) and Yaco (*Tilia mexicana*) are found in the Project site. A Vegetation Management Program has been prepared and submitted as part of the EIS, focusing on these two species and methods for their rescue and relocation and/or propagation in a nursery to be used during reforestation. Selected epiphytes will also be removed by a botanist prior to site preparation activities.
4. Air Quality and Global Climate Change Impacts. This includes the evaluation of the decomposition of submerged biomass, vehicle and machinery emissions and impacts associated with deforestation and elimination of potential carbon sinks.
- a) The EIS analyzes the possible contamination as a result of the presence of decaying vegetation in the soils used in the reservoir. Vegetation will be thoroughly removed from the reservoir, prior to filling, to mitigate this impact.
- b) Emissions related to vehicle/machine exhaust, evaporation of fuel tank and carburetor, crankcase, dust from the wheels, brake lining and clutch disks used during the site preparation and construction activities are assessed in the impact analysis. Emissions will be mitigated by regular maintenance of all vehicles and equipment.
- c) The removal of vegetation and the resulting degradation in air quality is considered to have a significant impact. In order to compensate, the EIS recognizes the need for a Reforestation Program.
- d) According to the EIS, total suspended particulates emitted during the site preparation and construction activities (e.g. due to excavations, transport of materials, movement of machinery, etc.), are considered to have a direct and significant impact. The emission of total suspended particulates will be mitigated by the use of tarps during the transport of materials, speed restrictions and water suppression of dust on construction roads.
- e) Impacts resulting from increased noise and vibrations during the site preparation and construction activities are considered temporary and local, but significant. Noise resulting from explosives will be mitigated by using less intensive blasting and by placing a bed of used tires, metal mesh and/or tarps over the area to absorb noise.
5. Resettlement. This includes public consultation and disclosure procedures, community development planning, livelihood assessments, potential for income restoration, compensation and dispute resolution mechanisms.
- a) The EIS does not identify the need for resettlement of any affected community members as a result of Project development activities.
- b) The EIS predicts significant beneficial impacts on employment, local economy and public health as a result of Project development.

- c) This Project will positively affect local communities by providing a clean and reliable form of electricity.
 - d) During the construction period, 232 temporary jobs will be generated by the Project. The operation period will generate 9 permanent jobs.
 - e) A Project office is located near the Project site in Zongolica and provides Project information and documentation to the affected communities and a means for making grievances.
 - f) Several meetings have been held with community landowners and government representatives (municipal, state and federal levels).
 - g) Newspaper articles have been published about the Project in the newspaper El Sol of Orizaba, Veracruz, the city closest to the Project (see Appendix B).
 - h) A 3-D model of the Project and its location is available in the Project office and will be available to the municipal offices where the Project will be constructed to provide community members with a visual reference of the Project.
 - i) Private landowners have been fully compensated for the land acquisitions.
 - j) The original landowners are granted permission to use the land for the subterranean tunnel once construction is completed.
 - k) A fish production project is being considered as a local community benefit to cultivate and commercialize trout in cages; part of the profits will be reinvested to increase the number of productive ponds and the remaining funds will be used for social benefits in the communities. The project will be conducted in accordance with environmental laws and with the corresponding permits.
 - l) Install an elevated water tank to provide around 20 m³ of water per day to the community of Palulca, Municipality of Texhuacán, so that the community members do not have to bring water up from the Apatlahuaya River.
 - m) Install concrete clothes washing boards for the community of Xala in the Municipality of Mixtla de Altamirano.
 - n) Repair the river water pumping station in the community of Xochitla, Municipality of Mixtla de Altamirano.
 - o) Provide a vehicular bridge as part of the dam curtain construction that will connect the communities of Xometla (Municipality of Mixtla de Altamirano) and Palulca (Municipality of Texhuacán).
 - p) Provide medical equipment for senior citizens and mattresses and blankets for a middle school and high school student's shelter in the Municipality of Texhuacán.
 - q) The forest material removed as part of the Project site preparation and construction activities that can be commercialized will be left to the local communities.
6. Safety. OPIC considers this to include an analysis of the structural stability of the dam and capacity of the spillway(s) to pass flood flows. Monitoring and/or warning devices downstream warning of evacuation procedures in the case of large dams.

- a) The dam and hydroelectric facilities will be constructed according to the Mexican and international engineering standards.
 - b) The CONAGUA Technical Consultation Department (*Subdirección General Técnica*) has reviewed all engineering and design plans and issued their preliminary approval of the Construction Permit. CONAGUA technicians will supervise Project construction activities.
 - c) The EIS describes the operating system, which will be connected to the CFE.
 - d) The EIS also contains a maintenance plan for the various components of the hydroelectric facility.
 - e) After the dam is constructed, the dam safety will be monitored by CONAGUA.
 - f) Security measures to be implemented during the site preparation, construction and operation periods are included in the EIS and will be elaborated upon in the Occupational and Community Health and Safety Plans, including specific measures for specific work fronts. These security measures include preventive measures, such as safety barriers to protect the public and construction workers.
 - g) An Occupational Health and Safety Plan and Community Health and Safety Plan should be developed before the initiation of Project construction activities.
7. Project Acceptability. OPIC considers this to include evaluation of the consultation and disclosure procedures, land acquisition process, stakeholder identification and compliance with local laws and regulations.
- a) The Project is in the process of obtaining all the applicable permits, authorizations and concessions (refer to Section 4.1).
 - b) The private landowners have received full payment from the Project owner for their land. No resettlement is considered as part of this Project.
 - c) A Project office is located near the site to provide information to the affected communities, provide a site for grievances and to provide documentation.
 - d) The Project owner has held meetings with the affected communities.
 - e) Newspaper articles have been published about the Project in the local newspaper El Sol of Orizaba, Veracruz, the city closest to the Project (see Appendix B).
 - f) The Project is in the process of complying with the applicable local laws and regulations at this Project phase.

4.6 World Commission on Dams Criteria Compliance Status

As the Project is still in the preparation and design stage, URS conducted a partial assessment of the five WCD decision points. These decision points were reviewed based on information provided in interviews during the site visit, review of available environmental and social information and the application of the WCD checklist for the first three points as suggested by the WCD in Chapter 9.

Stage 1. Needs assessment: validating the needs for water and energy services

Stage 1 validates the need for water and energy services through a range of processes, including national, regional, sector specific or basin-wide plans. In this case the Project was planned and developed to provide clean energy and reduce Mexican energy costs through the construction and operation of a self-supplied hydroelectric center.

The Mexican Presidential National Infrastructure Program 2007-2012 (*Programa Nacional de Infraestructura 2007-2012*) identifies the need for the development of energy generation, transmission and distribution infrastructures to satisfy the public energy demand at the lowest cost possible, using diverse energy sources and focusing on renewable resources. The CFE Electric Sector Works and Inversions Program for 2008-2017 (*Programa de Obras e Inversiones del Sector Eléctrico 2008-2017*) identifies an energy demand increase from 6,206 MW in 2007 to 10,686 MW by the year 2017 in the eastern energy region of Mexico (covering the states of Oaxaca, Veracruz, Chiapas, Guerrero, Morelos, Puebla, Tlaxcala and Tabasco). In order to meet such a demand, CFE plans the bidding and construction of hydroelectric facilities to generate an additional 3,316 MW between 2007 and 2017. This will require the outside inversion of approximately \$31,621 million Mexican pesos between 2008 and 2017.

In the CFE Electric Sector Works and Inversions Program for 2008-2017 Program, CFE also focuses on the diversification of energy sources in an effort to decrease dependency on fossil fuels, reduce the risk resulting from energy shortages, reduce energy costs and prioritize the use of renewable energy in order to reduce contamination. According to these goals, hydroelectric centers have been identified as a viable energy source as they use renewable energy, do not contaminate the environment and the construction can serve other purposes, such as river transport control, irrigation, potable water, tourism, etc.

As this Project will be privately constructed, the Project acts as an outside inversion, saving CFE money and providing an important and necessary energy infrastructure for the eastern CFE energy region. The Project will also promote the use of clean technologies to diminish the emission of air contaminants.

Stage 2. Selecting alternatives: identifying the preferred development plan

Stage 2 underscores the need for a site selection process that includes a multi-criteria assessment as part of a project development plan. Regarding the application of the WCD priorities for this Project stage, the review of applicable priorities is described below.

Based on discussions with the Project investor, the site selection strategy for hydroelectric projects is based on several criteria, including whether an existing dam structure exists, the amount of power potentially generated by the facility and the distance of the proposed hydroelectric center from the existing transmission distribution system.

The Project investors' evaluation of existing dams in Mexico identified only two feasible sites for the construction of hydroelectric centers using existing dams; these are the El Guineo and Cerro de Oro dams, where the Project investor is in the process of proposing hydroelectric centers. The Project investor has determined that the remaining existing dam structures in Mexico are not feasible to convert into hydroelectric centers due to the following:

- The amount of power potentially generated by the facility would be too low to cover associated costs; and/or
- Distance of the hydroelectric center to the existing transmission distribution system is too large and would require elevated costs and/or significant environmental impacts.

Therefore, the Project investor and Project owner proposed a new dam for a hydroelectric center, designed to generate an adequate amount of energy and is located a short distance from the existing transmission distribution system.

The Project investor contracted Construcciones Zugusa, S.A. de C.V. to study various Project alternatives until five distinctive alternatives were identified as potentially viable. The four additional sites evaluated were located in central Veracruz; in the Sierra de Zongolica in the limits of the Tehuacán Valley; in Puebla; and in the Sierra Mazateca in Oaxaca. The site selection was based on geological, topographical, geophysical and hydrological studies. Site considerations also included local community populations, nearby access to required materials and utilities and existing road access networks.

Based on the analysis of the above information, the selected site is considered to be ideal because it would allow water flow without impacting large populated areas or requiring resettlement that would normally be required for a large hydroelectric project. Furthermore, the selected location also meets the CFE specifications for the transmission lines interconnection.

The site selected, now referred to as the Veracruz Hydroelectric Project, is on the River Apatlahuaya, which has a capture area of 200 km² and is located in the upper limits of the Tonto River watershed. The estimated volume of water flow is an average of 107.34 hm³ per year. According to the EIS, there will be a continuous downstream water flow from the dam. The dam will exploit an average of 10 to 36% of the average monthly incoming water flow; or an average of 20 to 29% of the average annually incoming water flow.

An EIS for the selected site was prepared and submitted to the Mexican authorities on December 1st, 2008. This document is currently undergoing review by the Mexican authorities.

Stage 3: Project preparation: verifying commitments are in place before tender of the construction contract.

Stage 3 underscores the importance of the documentation of the mitigation and monitoring measures in the contract between the responsible parties.

The Project currently has support from the authorities of the State of Veracruz and from the authorities of three municipalities, and all three municipalities have issued a Certification of No Interference with the Municipality Urban Development Plan. The Project owner has held community meetings with those communities to be affected by the Project, during which comments and concerns were addressed. Articles about the Project have been published in the local newspaper El Sol of Orizaba, Veracruz, informing the public of the Project and its status (see Appendix B). The Project owner has developed a 3-D model of the Project site and its location for each of the municipality offices to provide community members with a visual reference of the Project. In order to attend to community members' questions and concerns, a Project office has been installed near the Project site and will remain open throughout the site preparation and construction stages.

An Executive Summary of the EIS will be provided in the Project office located near the site in Spanish, which can be consulted by interested community members (Appendix D).

The Project owner has concluded the land acquisition process and private landowners have received payment. In addition, the following compensation will be provided as part of the Project:

- The original landowners are granted access to use the land for the subterranean tunnel once construction is completed.
- Fish production project as a local community benefit to cultivate and commercialize trout in cages; part of the profits will be reinvested to increase the number of productive ponds and the remaining funds will be used for social benefits in the communities. The Project will be conducted in accordance with environmental laws and with the corresponding permits.
- Install an elevated water tank to provide around 20 m³ of water per day to the community of Palulca, Municipality of Texhuacán, so that the community members do not have to bring water up from the Apatlahuaya River.
- Install concrete clothes washing boards to the community of Xala in the Municipality of Mixtla de Altamirano.
- Repair the river water pumping station in the community of Xochitla, Municipality of Mixtla de Altamirano.
- Provide a vehicular bridge as part of the dam curtain construction that will connect the communities of Xometla (Municipality of Mixtla de Altamirano) and Palulca Municipality of Texhuacán).
- Provide medical equipment for senior citizens and mattresses and blankets for a middle school and high school student's shelter in the Municipality of Texhuacán.
- The forest material that can be commercialized will be left to the local community.

The EIS includes an environmental assessment that provides a description of the climate, geology, soils, hydrology, vegetation and wildlife found in the Project area. Mitigation and preventive measures are provided in the EIS to avoid significant impacts resulting from the Project. In addition, Vegetation and Wildlife Management Programs have been prepared, which focus on the removal of vegetation and wildlife species listed as protected under Mexican regulation and are provided in the EIS. The EIS also identifies the need for the preparation of a Soil Conservation Program and Reforestation Program according to Mexican authority stipulations.

In order to ensure compliance with the mitigation measures and conservation programs, an Action Plan and Management System should be prepared prior to the initiation of construction activities. Commonly, the EIS authorizations granted by the DGIRA require an Environmental Monitoring Program that would include monitoring and reporting processes to ensure the implementation and effectiveness of the mitigation measures.

The Project owner will present an application for a Water Concession from CONAGUA once the EIS authorization has been granted by DGIRA. As part of this permit process, CONAGUA takes into consideration water availability and relevant state water rights.

Considering that the Project is still in the permitting stage, URS has reviewed the currently available environmental and social documentation provided by the Project owner and investor in respect to the requirements of the WCD criteria. The WCD criteria require compliance with host country laws, regulations and permits. Based on the evaluation of the Project at this permitting stage, URS considers that the Project owner is in the process of complying with the applicable WCD criteria, pending the required authorizations by the Mexican authorities.

5.0 CONCLUSIONS AND RECOMMENDATIONS

URS has performed an Environmental Compliance Review of the Project in relation to the requirements of the applicable Mexican environmental regulations and standards, current World Bank guidelines, Equator Principles, IFC Performance Standards, General and Industry-Specific EHS Guidelines, OPIC Guidelines and WCD Criteria.

The Project is currently in the initial stages of the permitting process, thus the Project owner is in the process of preparing the required environmental and social documents and submitting the necessary permit and authorization applications in order to be in compliance with the requirements of the Mexican regulations. The Project owner is also in the process of fulfilling the requirements outlined in the Equator Principles, World Bank guidelines, IFC Performance Standards, OPIC guidelines, and WCD criteria.

Considering the current Project stage, the observations and recommendations made in this Environmental Compliance Review are based on the review of the available information provided to URS by the Project investor and Project owner, and information received during interviews with Project representatives and observations made by URS personnel during a Project site visit on February 18th, 2009. This report presents a summary of the observations and recommendations for future compliance with the above-listed regulations, standards, guidelines and criteria.

Based on this review, URS finds that the Project is in the process of complying with these regulations, standards, guidelines and criteria at this stage of the Project, recognizing that the Project owner is still in the permit process and critical permit authorizations are pending from the Mexican authorities. The following summarizes the observations of this review and provides URS' recommendations.

Observations:

- The Project owner has obtained the necessary Municipal Construction Permit from Mixtla de Altamirano, Texhuacán and Zongolica.
- The Project has received authorization from the Veracruz State Urban Regional Housing Development Department.
- The Project owner has completed the private landowners land acquisition process and is in the process registering the land acquisition with the private property registry (*Registro Público de la Propiedad*, RPP).
- The Certification of No Interference has been issued to the Project from the municipalities of Mixtla de Altamirano, Texhuacán and Zongolica.
- The Project owner has obtained the preliminary CFE Interconnection Point approval.

- The Project has requested the SEDENA Explosives Permit (waiting EIS Authorization).
- The Project has received the No Objection Letter from the Mexican Climate Change Office.
- The Project owner has submitted the EIS and the document is currently undergoing review by the Mexican authorities.
- The EIS has prepared a plan for compensation activities to be conducted during the Project for the benefit of the affected communities.
- The Project owner has established a Project office near the Project site and various articles regarding the Project have been published in the newspaper El Sol of Orizaba, Veracruz.
- An Executive Summary of the EIS will be provided in the Project office located near the site in Spanish, which can be consulted by interested community members (Appendix D).

Recommendations:

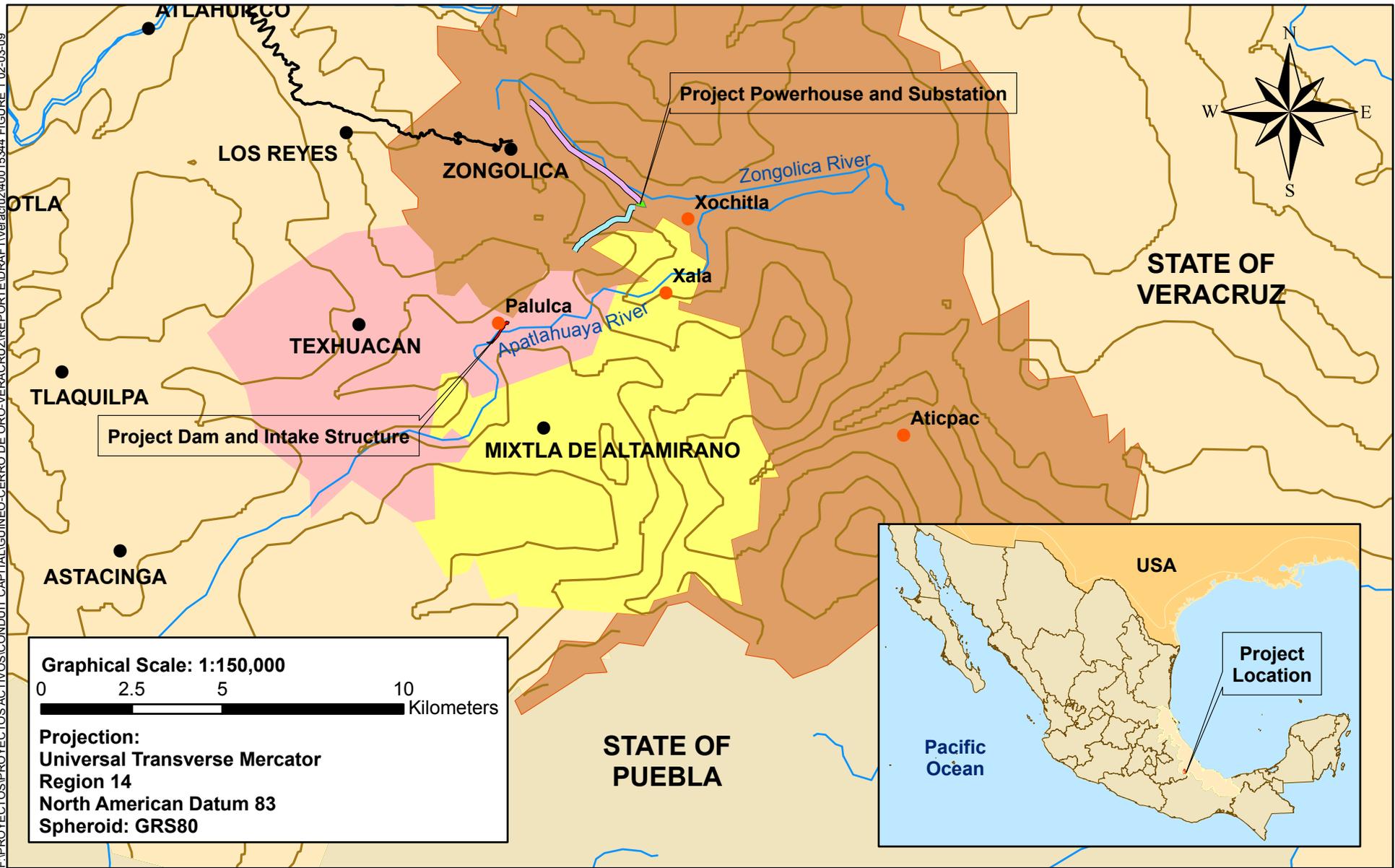
URS recommends that the Project owner perform the following tasks prior to the start of the construction phase in order to demonstrate compliance with the Mexican regulations, Equator Principles, World Bank guidelines, IFC Performance Standards, General and Industry-Specific EHS Guidelines, OPIC Standards and WCD criteria:

1. As is the intention of the Project owner, continue with the permitting and land registration process.
2. Compliance with the terms and conditions identified in the Mexican permits, authorizations and concessions granted.
3. Follow-up with the SEMARNAT on the EIS review process.
4. Request the following permits and authorizations before and/or upon initiation of the construction stage: registration as a hazardous waste generator, contraction of hazardous waste transport and management services and permits for the disposal of domestic solid wastes and sewage.
5. Prepare an Action Plan and Management System, which is required by the Equator Principle 4, IFC Performance Standard 1 and the WCD Strategic Priority 2.
6. Develop an Occupational Health and Safety Plan, which follows the General EHS and Industry-Specific Guidelines.
7. Prepare a Community Health, Safety and Security Plan, which follows the General EHS and Industry-Specific Guidelines and contains a dam safety component as required by OPIC.
8. Consider the EMF criteria described in the Industry-Specific EHS Guidelines.
9. Consider the Avian and Bat Collision criteria established in the Terrestrial Habitat Alteration of the Industry-Specific EHS Guidelines.
10. CCP should provide all requested environmental documentation in English to OPIC for their internal Project review and to post on their website for the required public comment period.
11. Other considerations as applicable and/or deemed necessary during the Project development.

FIGURES



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LEGEND

- | | | |
|-----------------------------------|------------------|-----------------------------------|
| Veracruz | Rivers | Project Water Conduction Tunnel |
| Other States of Mexico | Contour Lines | Project Transmission Line |
| Municipality Mixtla de Altamirano | Federal Highways | Project Dam and Intake Structure |
| Municipality of Texhuacan | Towns | Project Powerhouse and Substation |
| Municipality of Zongolica | Communities | |

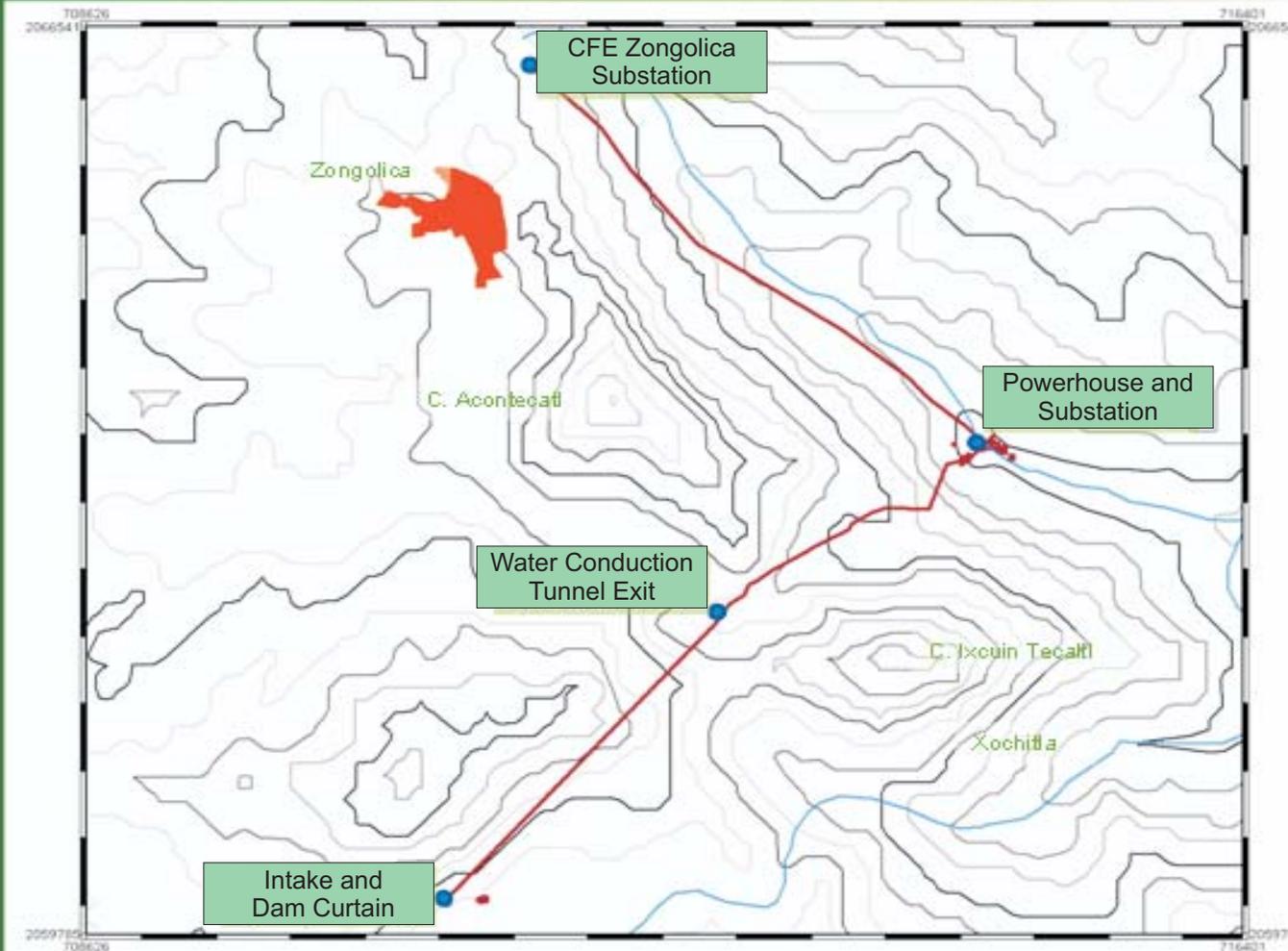
PROJECT LOCATION
 Draft Environmental Compliance Review
 Veracruz Hydroelectric Project
 Mixtla de Altamirano, Texhuacan, Zongolica
 Veracruz, Mexico

March 2009
 40015344
 Conduit Capital Partners, LLC



FIGURE 1

Veracruz Hydroelectric Dam Project



Projection: UTM
 Zone: 14
 Datum: ITRF92



LEGEND	
	Canal, River
	Contour Lines
	Population
	Alignments

October 2008

Figure provided in the Veracruz EIS
 Electricidad de Golfo , S. de C.V.
 Published June 11th, 2008

LOCATION OF PROJECT WORKS
 Draft Environmental Compliance Review
 Veracruz Hydroelectric Project
 Mixtla de Altamirano, Texhuacán, Zongolica
 Veracruz, Mexico

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