

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

### **2.1 No-action Alternative**

For a relicense, the Commission defines the no-action alternative as continuing to operate the project under the terms and conditions of the existing license, with no additional environmental protection, mitigation, or enhancement measures being implemented. The environment as it exists today is the baseline against which we assess the benefits and costs of any needed measures that would be applied under a new license.

#### **2.1.1 Existing Project Facilities and Operation**

##### Project Facilities

- Two 700-foot-long intake structures located on the upper Niagara River about 2.6 miles upstream from the Falls along the northern shore of the Niagara River (in its east-west reach above the Falls).
- Two 4.3-mile-long concrete underground water supply conduits, each measuring 46 feet wide by 66.5 feet high that run generally northward from the intakes under the City of Niagara Falls and the Towns of Niagara and Lewiston to the southeast corner of the forebay. The conduits have a combined maximum capacity of approximately 110,000 cubic feet per second (cfs).
- A 4,200-foot-long, by 500-foot-wide, by 110-foot-deep, 71-acre forebay that serves as headwater for the Robert Moses Plant and tailwater from the Lewiston Plant. The forebay has a volume of nearly 2 billion gallons.
- The Lewiston Plant that measures 975 feet long by 240 feet wide by 160 feet high. The Lewiston Plant has 12 generating units consisting of Francis-type pump-turbines connected to motor-generator units, each rated at 37,500 horsepower (hp) as a motor and 20 MW as a generator. The generating units are rated to discharge 3,400 cfs at 85 feet of net head as a pump, and to develop 28,000 hp at 75 feet of net head as a turbine.
- The 1,900-acre Lewiston reservoir with a maximum water surface elevation of 658 feet, and a usable storage capacity of 69,500 acre-feet out of a gross

storage capacity of 74,250 acre-feet (24 billion gallons). The reservoir is formed by a 6.5-mile-long rock-filled dike (with impervious clay core) anchored to each end of the 1,000-foot-long concrete plant intake structure.

- The Robert Moses Plant that includes an intake structure, measuring 1,100 feet long by 190 feet wide by 100 feet high, 13 generating units which, when upgrades are completed, will be rated at 193.5 MW apiece, 13 steel-lined penstocks, each varying in diameter from 28.5 feet at the intake to 21 feet at the turbine with an average head of approximately 300 feet.
- A 35-acre switchyard south of the forebay equipped to transmit the electricity produced by the project via 115-, 230-, and 345-kilovolt (kV) transmission lines.

### Project Operation

In 1909, the United States and Canada signed the Treaty Between the United States and Great Britain Relating to Boundary Waters and Questions Arising Between the United States and Canada (1909 Treaty), establishing a framework for the allocation of boundary waters between the two countries. Among other provisions, the 1909 Treaty created the International Joint Commission (IJC) and granted it broad authority over “uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line.” IJC authority extends to all United States-Canada boundary waters, including the Niagara River.

In addition to establishing the IJC, the 1909 Treaty set diversion limits on the Niagara River, limiting the amount of water that the United States could take from above Niagara Falls for power purposes. In 1950, the United States and Canada renegotiated diversion limits on the Niagara River and signed the Treaty Between Canada and the United States of America Concerning the Diversion of the Niagara River (1950 Treaty). The 1950 Treaty requires that a minimum of 100,000 cfs flows over the Falls during daytime hours during the tourist season, and that a minimum of 50,000 cfs flows over the Falls at all other times. The 1950 Treaty further provides that, except for certain designated portions of the outflow from Lake Erie, the remaining flow is divided equally between the United States and Canada and can be used for power generation purposes.

While the 1950 Treaty established new baseline flows, it did not alter the jurisdictional authority granted to the IJC by the 1909 Treaty to oversee boundary waters and ensure that minimum flows are maintained.

## International Niagara Board of Control

The International Niagara Board of Control (INBC) was established by a 1953 IJC Directive to provide advice to the IJC on matters related to water levels and flows in the Niagara River. In practice, the IJC delegates routine management authority over the Niagara River to the INBC. The INBC has primary responsibility over regulation of water levels in the Chippawa-Grass Island Pool and the annual installation of the Lake Erie-Niagara River Ice Boom. To implement the flow and water level mandates, the INBC issues Directives to the Power Authority and Ontario Power Generation (OPG, formerly Ontario Hydro). The 1993 INBC Directive (currently in effect) instructs the Power Authority and OPG to maintain a long-term mean level of 171.16 meters (562.75 feet in USLSD 1935) in the pool. Section 3 of the 1993 INBC Directive further defines an acceptable range of water level variation and provisions for abnormal flow periods and ice conditions. Section 4 provides flexibility to temporarily suspend normal operations when there is a significant risk of severe property damage or loss of life.

## International Niagara Committee

The International Niagara Committee, which consists of one representative from U.S. Army Corps of Engineers (Corps) and one from Environment Canada, monitors compliance with the flow requirements of the 1950 Treaty. The International Niagara Committee, conceived in principle by Article VII of the 1950 Treaty, was established by an exchange of notes between the United States and Canada on January 25, 1955.

## Niagara Joint Works Committee

The Niagara Joint Works Committee, consisting of one member and alternate each from the Power Authority and OPG, oversees the maintenance and operation of all “Joint Works” including the International Control Structure, ice boom, water level gauges, and ice monitoring equipment. The Niagara Joint Works Committee was established by a Memorandum of Understanding (MOU) between the Power Authority and OPG.

## Niagara River Control Center

Both the International Niagara Committee and the Niagara Joint Works Committee are supported by the Niagara River Control Center (NRCC), which is located in the International Control Structure. The NRCC manages daily operations of the Joint Works, maintains minimum flows over Niagara Falls, informs the Power Authority and OPG of hourly diversion allowances, maintains records of water shares, and monitors water level gauges, weather, and ice conditions. Pursuant to the terms of the MOU, the NRCC is staffed by OPG and funded in equal parts by the Power Authority and OPG.

The Power Authority operates the Niagara Project to maximize the amount of energy produced during periods of peak demand, while minimizing the loss of water available for power production, consistent with meeting its statutory and contractual obligations.

At night and on weekends, when demand is relatively low, the Robert Moses Plant is used for generation, with excess water being pumped into the Lewiston reservoir through the Lewiston Plant. Pumped water is stored in the reservoir for use during weekday periods of high electricity demand. Storage of water compensates for the lower river flow available for power generation during the day in the tourist season, when a greater amount of water must be allowed to go over the Falls in accordance with treaty obligations.

### Project Safety

The project has been operating for over 45 years under the existing license and during this time, Commission staff has conducted operational inspections focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. In addition, the project has been inspected and evaluated every 5 years by an independent consultant and a consultant's safety report has been submitted for Commission review. As part of the relicensing process, Commission staff evaluate the continued adequacy of the proposed project facilities under a new license. Special articles would be included in any license issued, as appropriate. Commission staff would continue to inspect the project during the new license term to assure adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance, and accepted engineering practices and procedures.

### **2.1.2 Current License Requirements**

The current FERC license contains two power distribution articles:

Article 20. In order to assure that at least 50 per centum of the project power shall be available for sale and distribution primarily for the benefit of the people as consumers, particularly domestic and rural consumers, to whom such power shall be made available at the lowest rates reasonably possible and in such manner as to encourage the widest possible use, the Licensee in disposing of 50 per centum of the project power shall give preference and priority to public bodies and non-profit

cooperatives within economic transmission distance. In any case in which project power subject to the preference provisions of this article is sold to utility companies organized and administered for profit, the Licensee shall make flexible arrangements and contracts providing for the withdrawal upon reasonable notice and fair terms of enough power to meet the reasonably foreseeable needs of the preference customers.

Article 21. The Licensee shall make a reasonable portion of the project power subject to the preference provisions of Article 20 available for use within reasonable economic transmission distance in neighboring States, but this article shall not be construed to require more than 20 per centum of the project power subject to such preference provisions to be made available for use in such States. The Licensee shall cooperate with the appropriate agencies in such States to insure compliance with this requirement. In the event of disagreement between the Licensee and the power-marketing agencies of any of such States, the Federal Power Commission may, after public hearings, determine and fix the applicable portion of power to be made available and the terms applicable thereto: Provided, That if any such State shall have designated a bargaining agency for the procurement of such power on behalf of such State, the Licensee shall deal only with such agency in that State. The arrangements made by the Licensee for the sale of power to or in such States shall include observance of the preferences in Article 20.”

Operational requirements, such as minimum flows over the Falls and pool fluctuation limits, are governed by the 1950 Treaty and the 1993 INBC directive, respectively. As such, the current license contains no operational requirements.

## **2.2 Proposed Action**

### **2.2.1 Project Facilities and Operation**

The Power Authority does not propose any changes in project facilities or operation. The Power Authority also does not propose to increase the generating capacity of the existing project. Upgrades of the thirteen Robert Moses Plant units were authorized by the Commission on December 21, 1993. Each of the original 150-MW units are to be upgraded to 193.5 MW. The Power Authority expects to finish the upgrade of unit 8, the last remaining unit, by November, 2006. The project would continue to operate in a store and release mode; diverting water upstream of the Falls and releasing it downstream in accordance with the Niagara Redevelopment Act and the 1950

Niagara River Water Diversion Treaty with Canada (1950 Treaty), as authorized by the International Joint Commission (IJC).

### **2.2.2 Environmental Enhancement Measures**

As set forth by the terms of the Power Authority's Relicensing Agreement (proposed action), the Power Authority proposes to implement the following environmental measures, categorized by principal resource area:

#### Water Quality – Section 6.1, and Appendix A

- A \$19 million (net present value (NPV) 2007) Niagara Falls Water Board Capital Improvement Fund to support rehabilitation of the Falls Street Tunnel (tunnel) in the area of the project's water conduits.

#### Aquatic and Terrestrial Resources – Section 4.1, and Appendix A

- A Habitat Improvement Projects Fund (HIPs Fund) in the amount of \$12,000,000 (NPV 2007) for eight identified Habitat Improvement Projects (HIPs). The HIPs would be in the upper Niagara river between the Falls and the downstream end of Lake Erie. The Power Authority's construction of the proposed HIPs would be a one-time obligation occurring outside of the FERC project boundary. New York DEC would monitor, operate, and maintain the HIPs, using monies from the HIPs Fund.
- A \$16,180,000 (NPV 2007) Fish and Wildlife Habitat Enhancement and Restoration Fund (HERF) to be administered by an Ecological Standing Committee (ESC) exclusively to fund ESC-approved projects, including but not limited to future HIPs, land acquisition, habitat improvement, habitat research, fish, wildlife, and indigenous plant species restoration, and stewardship activities throughout the Niagara River including within the Niagara Gorge, its headwaters at Lake Erie, the mouth of the river at Lake Ontario, its tributaries between these two points, and their associated watersheds (Niagara Basin).

#### Recreation Resources – Sections 4.2 and 5.1, and Appendix A

- Various improvements at the following recreation areas located within the Project boundary: Upper Mountain Parking Lot/Fishing Access, the Robert Moses Plant Fishing Pier Parking Area, and the Upper River Intakes (cost of these improvements to be \$1,262,000 (NPV 2007));

- Paving, walkway, and accessibility improvements at the Upper River Intakes Observation Facility that is located within the Project boundary (cost of these improvements at \$1,828,000 (NPV 2007));
- A Parks and Recreation Fund in the amount of \$9,260,000 (NPV 2007) for capital improvements undertaken by New York Office of Parks, Recreation and Historic Preservation (New York OPRHP) on lands located within, or in the vicinity of, the project boundary. Improvements within the project boundary would be submitted to the Commission for approval as part of the licensee’s Recreation Plan; and
- A Recreation Plan that includes final designs for the proposed recreational enhancements located within the project boundary as agreed to in the Relicensing Agreement, and a provision for monitoring recreation and updating the plan every 12 years.

Land Management - Appendix A

- A land management plan for the project that identifies and explains the policies, standards, guidelines, and land use designations used to protect and manage environmental resources, public use, aesthetics, and safety.

Historic Properties – Section 4.3, and Appendix A

- Prior to undertaking any of the aforementioned HIPs or public access improvements, the Power Authority will ensure that historic properties are managed and protected consistent with either (1) the “*Programmatic Agreement Among the Federal Energy Regulatory Commission, The Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer For Managing Historic Properties That May Be Affected By A License Issuing To The Power Authority Of The State of New York For the Continued Operation and Maintenance of the Niagara Power Project in Niagara County, New York*” and the associated HPMP that would be developed, following FERC’s issuance of a New License, in consultation with, among others, the New York State Historic Preservation Officer, TN, the Tonawanda Seneca Nation, and the Seneca Nation of Indians, or (2) the requirements of the New York State Historic Preservation Act of 1980, as appropriate.

Annual Report – Appendix A

- An annual report on the HIPs and HERF funds to include a summary, including progress reports for all HIPs and projects funded in whole or in part by the HERF; and a list of all planned expenditures during the current report year.

### **2.2.3 Project Boundary Modifications – Section 3.3, Exhibit G**

- Eight parcels of land would be removed from the current project boundary. These parcels include portions of roads, a cemetery, open space, a transmission corridor, a golf course, a portion of the bypassed reach with recreational facilities, and business parking.

## **2.3 Modifications to the Power Authority’s Proposal**

Pursuant to the REA notice issued February 6, 2006, various resource agencies and interested parties provided comments and formal recommendations (see section 1.3.3). The Power Authority responded to these comments and recommendations in a letter filed with the Commission on May 22, 2006. Mandatory conditions are discussed below as is the staff-recommended alternative. Measures recommended pursuant to section 10(j) are discussed in section 5.2.

### **2.3.1 Mandatory Conditions**

#### **2.3.1.1 Water Quality Certification**

Section 401(a)(1) of the Clean Water Act (CWA) requires an applicant for a federal license or permit for any activity that may result in any discharge into navigable waters to provide to the licensing or permitting agency a certification from the state in which the discharge originates that any such discharge will comply with certain sections of the CWA. On August 18, 2005, concurrently with the filing of its license application with the Commission the Power Authority requested a section 401 water quality certificate from the New York DEC. On January 31, 2006, New York DEC issued a water quality certification (certification) for the Niagara Project, with conditions that are consistent with the Relicensing Agreement and summarized below:

- maintain water level fluctuations in accordance with 1950 treaty between Canada and the United States
- construct the 8 HIPs in accordance with section 4.1.2 of the Relicensing Agreement

- establish the HERF in accordance with section 4.1.3 of the Relicensing Agreement
- establish a land acquisition fund in accordance with section 2 of appendix E of the Relicensing Agreement
- construct public access improvements in accordance with the Relicensing Agreement
- fifty year license term
- all activities requiring the disturbance of greater than 1 acre must obtain coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities (GP-02-01)

#### **2.3.1.2 Coastal Zone Management Act Consistency Certification**

In accordance with section 307(c) of the Coastal Zone Management Act, the Power Authority requested a consistency determination on August 18, 2005 from the New York Department of State (New York DOS), Division of Coastal Resources. By letter dated February 17, 2006, the New York DOS acknowledges that the Power Authority's proposal under the Relicensing Agreement, including proposed license articles, is consistent with the New York Coastal Management Program. The only condition New York DOS includes with their consistency determination, is that the New York DOS is to have a representative on the Ecological Steering Committee. By letter filed February 27, 2006, the Power Authority revises the Relicensing Agreement accordingly.

#### **2.3.1.3 Section 18 of the Federal Power Act—Authority to Require Fishways**

Section 18 of the FPA, 16 USC § 811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the U.S. Department of Commerce and the U.S. Department of the Interior (Interior) may prescribe. By letter dated March 24, 2006, Interior requests that the Commission reserve its authority to require fishways as may be prescribed by Interior in the future.

#### **2.3.2 Staff Alternative**

The staff alternative includes the measures in the proposed action (section 2.2.2 above) with the following exceptions:

(1) staff do not recommend the HERF (a certification condition and section 10(j) recommendation) be a license requirement because it could be used for projects that address resources not affected by operation of the Niagara Project;

(2) staff recommend monitoring groundwater to determine the effects of the proposed rehabilitation of the Falls Street Tunnel;

(3) staff currently recommend keeping parcel 6 in the project boundary because it contains recreation facilities that provide public access to the project bypassed reach;

(4) staff do not recommend including upgrades to ArtPark in the license because this facility's primary purpose is the performing arts and not access to project lands and waters; and

(5) staff recommend including a proposed new tribal exhibit (not intended by the Relicensing Agreement to be part of the license) at the Power Vista be included in the license because the tribal exhibit would be part of a project recreation facility.

In addition, staff do not recommend the land acquisition fund required by the certification and not intended by the Relicensing Agreement to be part of the license because the fund would be used to acquire unspecific lands for unspecified purposes.

## **2.4 Alternatives Considered but Eliminated from Detailed Study**

Alternatives to the relicensing proposal that were considered but eliminated from detailed study because they are not reasonable in this case include: (1) issuance of a non-power license; and (2) project retirement.

In its comments on the DEIS, Eastern Niagara Power Project Alliance (Eastern Niagara) recommended that we consider the alternative of Federal takeover of the project . However, Public Law 278, also know as the Act of August 15, 1953 (67 Stat. 587) bars federal takeover of projects owned by a state or municipality.

### **2.4.1 Issuing a Nonpower License**

Issuing a nonpower license would not provide a long-term resolution of the issues presented. A nonpower license is a temporary license that the Commission would terminate whenever it determines that another government agency would assume

regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and the applicant has no basis for concluding that the project should no longer be used to produce power. Thus, in these circumstances, a nonpower license is not a realistic alternative to relicensing.

#### **2.4.2 Retiring the Project**

Project retirement could be accomplished with or without dam removal. Either alternative would involve denial of a license application and surrender or termination of an existing license with appropriate conditions. Dam removal has not been recommended by any party, and we have no basis for recommending it or studying it as an alternative. The project provides a viable, safe, and clean renewable source of power to the region and contributes to the local economy by providing a source of revenue to the Power Authority.