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LOW IMPACT HYDROPOWER QUESTIONNAIRE

[Excerpted from Part VI, Section E of the Low Impact Hydropower Certification Program. Words in italics are defined in Part VI, Section C, and line-by-line instructions are available in Section D of the program, available on-line in PDF format at http://www.lowimpacthydro.org.

E. LOW IMPACT HYDROPOWER QUESTIONNAIRE

Back	ground Information	
1)	Name of the Facility.	Four Raquette River Projects consisting of the Carry Falls Project No. 2060, Upper Raquette River Project No. 2084, Middle Raquette River Project No. 2320 and the Lower Raquette River Project No. 2330, were included in the Raquette River Settlement of March 1998 and include the following fourteen facilities (from upstream to downstream): Carry Falls, Stark, Blake, Rainbow, Five Falls, South Colton, Higley, Colton, Hannawa, Sugar Island, Norwood, East Norfolk, Norfolk and Raymondville.
2)	Applicant's name, contact information and relationship to the Facility. If the Applicant is not the Facility owner/operator, also provide the name and contact information for the Facility owner and operator.	Mr. Daniel F. Parker Compliance Engineer Erie Boulevard Hydropower, L.P. Brookfield Renewable Power 184 Elm Street Potsdam, New York 13676
3)	Location of Facility by river and state.	Raquette River, New York

4)		
4)	Installed capacity.	Total installed capacity = 162.5 MW (FERC License). By project, installed capacity is as follows: Carry Falls: 0.0 MW (storage reservoir) Upper Raquette: 102.4 MW Middle Raquette: 45.9 MW Lower Raquette: 13.7 MW (upgraded 2006-2008)
5)	Average annual generation.	807,390 megawatt hours
6)	Regulatory status.	Relicensed via a collaborative Settlement. The Settlement was signed in 1998 and the four new licenses were issued in February 2002.
7)	Reservoir volume and surface area measured at the high water mark in an average water year.	Carry Falls: 104,463 acre feet and 3,000 surface acres Stark: 12,000 acre feet and 641 surface acres Blake: 12,800 acre feet and 660 surface acres Rainbow: 12,700 acre feet and 710 surface acres Five Falls: 2,300 acre feet and 120 surface acres South Colton: 3,000 acre feet and 225 surface acres Higley: 4,400 acre feet and 742 surface acres Colton: 620 acre feet and 195 surface acres Hannawa: 690 acre feet and 204 surface acres Sugar Island: 55 acre feet and 29 surface acres Norwood: 1,900 acre feet and 350 surface acres East Norfolk: 360 acre feet and 10 surface acres Norfolk: 35 acre feet and 10 surface acres Raymondville: 315 acre feet and 50 surface acres
8)	Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	Not required.
9)	Number of acres inundated by the Facility.	Not required.
	Number of acres contained in a 200-foot zone extending around entire undment.	Not required.
goverr	Please attach a list of contacts in the relevant Resource Agencies and in non- nmental organizations that have been involved in Recommending conditions for facility.	Attached is a list of key resource agencies and NGOs involved with the Raquette River Settlement.
	Please attach a description of the Facility, its mode of operation (i.e., peaking/runer) and a map of the Facility.	Project Description and Project Operations excerpts from License are attached Exhibit F and G Project Drawings are attached.

Questions for "New" Facilities Only:	
If the Facility you are applying for is "new" i.e., an existing dam that added or increased power generation capacity after August of 1998 please answer the following questions to determine eligibility for the program	
13) When was the dam associated with the Facility completed?	1911
14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.	1) Higley redevelopment: September 2003 2) Lower Raquette (Norwood, East Norfolk, Norfolk, & Raymondville) redevelopment: 2006-2008.
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	Higley Redevelopment – penstock configuration change, four penstocks versus one penstock. Lower Raquette Redevelopment- turbine and generator upgrades.
16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality, (for example, did operations change from run-of-river to peaking)?	The DEC (May 17, 2002) and FWS (May 22, 2002) stated that the revised configuration was better suited to efficiently matching the range of flows expected than the original, single penstock configuration. This correspondence was filed with the Commission on May 22, 2002. The Commission provided verbal approval to proceed with the redevelopment on May 31, 2002, followed by written approval on June 4, 2002. This redevelopment project also expedited fish protection measures by 10 years. Correspondence attached.
 17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity? (b) If you answered "yes" to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain. 	NA
	18 (a) NA 18 (b) NO

A. Flows	PASS	FAIL		
A. Flows 1) Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including instream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?	PASS YES = Pass, Go to B N/A = Go to A2	FAIL	Yes. The Raquette River Projects are in compliance with resour regarding flow conditions. The Settlement Agreement/License by the New York Sate Department of Environmental Conservat Minimum flows in the bypassed reaches are specified at each Carry Falls: 0 cfs (no bypassed reach) Blake: 55 cfs and 120 cfs seasonal (walleye) Five Falls: 50 cfs and 45 cfs seasonal (walleye) Higley: 20 cfs (fish movement), short bypassed reach (seasonally variable) Hannawa: 50 cfs, 90 cfs seasonal (walleye), 65 cfs Norwood: 20 cfs (fish movement), short bypassed reach Norfolk: 55 cfs and 20 cfs (fish movement) reach	Order includes requirements for flow releases recommended tion (DEC0 and the U.S. Fish. And Wildlife Service (FWS).
			The method of release and time of implementation are also esta agencies and others. Year round base flows of 290 or 560 cfs a occurs during a "normal" or "wet" condition as defined in the S condition as defined in the Settlement. Maximum daily reservoir fluctuations under normal flow cor Carry Falls: 30.0 feet permitted, guide curve Blake: 1 foot Five Falls: 2 feet	re provided below Raymondville. The 560 cfs base flow lettlement. The 290 cfs occurs during a "dry" or "drought"
			Higley: 2.5 feet, end of Labor Day weekend to Memorial Day v 2.0 feet, Memorial Day weekend to end of Labor Day weekend.	
			Colton: 0.4 feet Sugar Island: 1 foot East Norfolk 0.5 feet Raymondville: 0.5 feet	Hannawa: 0.4 feet Norwood: 0.5 feet Norfolk: 1 foot
			Brookfield Renewable Power provides releases for whitewater in Developments. The whitewater season is designated as July thrishall not exceed 800 Mwh per year. After 2006 and every five young budget between 400 Mwh and 1,080 Mwh. The approximate point and Sugar Island 1500 cfs. Ramping flows are an hourly doubling an hourly halving when descending and associated energy losse schedule for provisions of flows was contained in the License. Schedule and additionally, has filed annual reports on License in initiated. The annual reports, commencing in 2002, have been a Implementation Reports dated, July 30, 2002, June 18, 20003 at 2003 denotes compliance with the flow requirements.	rough September. Whitewater budget for years 2002 to 2006 years thereafter, adjustments may be made with a whitewater eak whitewater flows are: Colton 1250 cfs. Hannawa 800 cfs ing of the instream flow when ascending to the peak flow and is are part of the whitewater budget. An implementation The Licensee has provided the flows in accordance with this implementation measures denoting when the flows were approved by the Commission via Order Approving Annual

2) If there is no flow condition recommended by	YES = Pass, go to	NA
any Resource Agency for the	B	
Facility, or if the	NO = Go	
recommendation was issued	to A3	
prior to January 1, 1987, is the		
Facility in Compliance with a flow release schedule, both		
below the tailrace and in all		
bypassed reaches, that at a		
minimum meets Aquatic Base		
Flow standards or "good"		
habitat flow standards		
calculated using the Montana-		
Tennant method?		
3) If the Facility is unable to	YES =	NA
meet the flow standards in	Pass, go to	
A.2., has the Applicant	В	
demonstrated, and obtained a		
letter from the relevant		
Resource Agency confirming		
that demonstration, that the		
flow conditions at the Facility		
are appropriately protective of		
fish, wildlife, and water		
quality?		

B. Water Quality	PASS	FAIL	
In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?	YES = Go to B2	NO = Fail	Yes. The four Raquette River Projects are in compliance with all conditions issued pursuant to the Clean Water Act – Section 401 Water Quality Certification issued for the four projects on June 11, 1998 (attached). The Section 401 WQC is conditioned on compliance with the terms of the Settlement Agreement.
2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?	YES = Go to B3 NO = Pass		Yes, the DEC has identified several areas of the Raquette River Projects and associated tributaries in their June 3, 2002 Section 303 (d) List. The DEC classifies the project area based on their designated best use. Water classifications for the project areas include Class B (coldwater fishery) (Best use is primary contact recreation and other uses except as a source of water supply for drinking and culinary or food processing purposes), Class C (T) (Coldwater fishery that supports trout) (best use is fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation), and Class D (warm water fishery) (best use is secondary contact recreation).
3) If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?	YES = Pass	NO = Fail	Yes, the DEC Section 303(d) List (attached) indicates atmospheric deposition (acid rain) is the source for all areas of the Raquette River Projects and associated tributaries identified under Section 303 (d).

C. Fish Passage and Protection	PASS	FAIL	
1) Is the Facility in Compliance with <i>Mandatory Fish Passage</i> Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?	YES = Go to C5 N/A = Go to	NO = Fail	Erie Boulevard Hydropower, LP installed upstream American eel ladders at its Raymondville, Yaleville and Norfolk developments in 2008. Erie is installing upstream eel ladders at its East Norfolk and Norwood developments in 2009.
 2) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish run is extinct)? a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility? b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage? 	YES = Go to C2a NO = Go to C3 YES = Go to C2b N/A = Go to C2b YES = Go to	NO = Fail	Erie Boulevard Hydropower, LP installed upstream American eel ladders at its Raymondville, Yaleville and Norfolk developments in 2008. Erie is installing upstream eel ladders at its East Norfolk and Norwood developments in 2009.S
	C5	Fail	See Response to Question C.2.a above.
 a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription, c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility? 	NO = Go to C5 N/A = Go to C4	YES = Fail	No. The agencies had the opportunity to issue Mandatory Fish Passage Prescriptions but decided not to do so. Historically, waterfalls formed natural barriers to upward migration of most fish species of the St. Lawrence River. Department of Interior reserved section 18 authority. Also, see response to Question C.2 above.

4) If C3 was not applicable: a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? Or	YES = Go to C5	NO = Fail	NA
b) If the Facility is unable to meet the fish passage standards in 4.a., has the Applicant demonstrated, and obtained a letter from the US Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource?			
5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of <i>Riverine</i> fish?	YES = Go to C6 N/A = Go to C6	NO = Fail	Yes, there are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish. However, as agreed in the Settlement, downstream movement of riverine fish (yellow perch, rock bass, white sucker, brown bullhead, walleye, northern pike and pumpkinseed) is facilitated by minimum flows and new release structures at Stark, Blake, Rainbow, Five Falls, South Colton, Higley, Colton, Hannawa, Sugar Island, Norwood, East Norfolk, Norfolk and Raymondville. Carry Falls has no fish movement requirement.
The state of the s	YES = Pass, go to D N/A = Pass, go to D	NO = Fail	One inch trash racks have been installed at Raymondville, Yaleville, Norfolk, East Norfolk, Norwood, and Hannawa developments. Erie is continuing to install one inch trash racks at the remaining developments according to the implementation schedule.

D. Watershed Protection	PASS	FAIL	
1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline	l	NO = go to D2	Yes. The four Raquette Rive Projects are in compliance with FERC license requirements regarding the Protection, Mitigation and Enhancement of project lands and watershed protection. These include limited impoundment fluctuations for shoreline erosion control, erosion/sediment control plans for any new construction and management of project lands, through permits, used by the public, municipalities, utilities, etc.
2) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D. 1., and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?		NO = go to D3	NA
3) Has the facility owner/operator established through a settlement agreement with appropriate stakeholders and that has state and federal resource agencies agreement an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)	YES = Pass, go to E	NO = go to D4	NA
4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.		No = Fail	NA

E. Threatened and Endangered Species Protection	PASS	FAIL	
Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?	YES = Go to E2 NO = Pass, go to F		Yes. Except for the bald eagle and occasional transient species, there are no state or federal threatened or endangered species present in the Raquette River project areas or downstream reaches. The yellow lamp mussel is considered a species of concern/interest by the FWS/DEC respectively. The Licensee surveyed reaches of the river and the final EA concluded no further studies required at this time. The FWS and DEC did not provide any comments on the final EA conclusions. Attached are copies of the appropriate documentation. The Bald Eagle Protection and Management Plan, approved by FERC on July 17, 2003, continues to be implemented. FERC approved the 2008 Bald Eagle Monitoring Report filing on May 26, 2009. Correspondence is attached.
species pursuant to Section 4(f) of the Endangered Species Act or similar state	YES = Go to E3 N/A = Go to E3	NO = Fail	NA
(i) italing a fore-tant agency complete combanation parameter agency	YES = Go to E4 N/A = Go to E5	NO = Fail	NA
 4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that: a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or d) The recovery plan under active development will have no material effect on the Facility's operations? 	YES = Pass, go to F	NO = Fail	NA
5) If E.2. and E.3. are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?	YES = Pass, go to F	NO = Fail	Yes. As described in response to Question E.1., the only listed species, the bald eagle, is being positively impacted through the FERC-approved Bald Eagle Protection and Management Plan. No negative impacts have been identified.

F. Cultural Resource Protection	PASS	FAIL	
If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?	YES = Pass, go to G N/A = Go to F2	NO = Fail	Yes. As required by Article 405 of the licenses, Erie Boulevard Hydropower, LP has implemented the Programmatic Agreement and prepared an Historic Properties Management Plan (HPMP) for the projects that was approved by the September 28, 2004 FERC Order. The projects are in compliance with the requirements of the licenses and the HPMP.
2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or <i>Native American Tribe</i> , or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility?	YES = Pass, go to G	NO = Fail	NA
G. Recreation	PASS	FAIL	
	YES = Go to G3		Yes. The Recreation Plan for the projects was approved by the FERC
recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?	N/A = Go to G2	Fail	Order, dated November 17, 2004. The recreational enhancements included in the approved recreation plan have been implemented.
2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?	YES = Go to G3	NO = Fail	NA
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H	NO = Fail	Yes, all facilities have both access to the reservoir and downstream reachering of charge.
H. Facilities Recommended for Removal	PASS	FAIL	
Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	NO = Pass, Facility is Low Impact	YES = Fail	No. No resource agency recommended removal of any of the dams associated with these four Raquette River projects.