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19 April 2016

Anne Cameron  
Project Evaluator  
Ministry of the Environment and Climate Change  
Operations Division  
Environmental Approvals Branch  
135 St. Clair Avenue West, Floor 1  
Toronto, Ontario  
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Transmission by email: Anne.Cameron@Ontario.ca

Re: EBR 012-5634  
OWA Proposed Major Amendment to the Class EA for Waterpower

Dear Ms. Cameron:

Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization acting as a voice for several stewardships, organizations, and private and First Nation citizens who have come together to protect, conserve and restore healthy river ecosystems.

ORA is pleased to offer our recommendations with regard to the Ontario Waterpower Association's (OWA) proposed major amendment to the Class Environmental Assessment for Waterpower Projects (Class EA). The proposed major amendment would create a streamlined process for small waterpower projects with a nameplate capacity of 500 kW or under, and that are associated with existing water management infrastructure, as well as for projects that increase the efficiency of existing facilities. The amendment would apply to projects that would involve the use, retrofitting, redevelopment, upgrading or like-for-like replacement of existing infrastructure.

The Ontario Rivers Alliance is strongly opposed to all aspects (except the minor housekeeping amendments) of the proposed major amendment to the Class EA for Waterpower, for the following reasons:

### **Public and First Nation Consultation**

The proposed streamlined process would effectively reduce consultation to "*any interested persons who may be directly affected by the project, the local municipality and Aboriginal communities that may be potentially affected by the project*". Elimination of broad public and First Nation consultation is unacceptable, and is not in keeping with the purpose of the Class EA.

The purpose of the Class EA is to ensure that environmental effects are considered for each project. Proponents must follow the planning process and design procedures as set out in the approved Class EA, including public and agency consultation.<sup>1</sup>

The amendment proposes that "*Aboriginal consultation will be completed primarily by sending the Notice of Project*" – how could serving notice be considered consultation? Consultation is a conference or



meeting at which information and opinions are exchanged or advice is prescribed. The Crown has a duty to consult with and accommodate First Nations and other Aboriginal communities. More specifically, First Nations are to be identified, notified, consulted, and involved in an appropriate manner.<sup>2</sup>

*“The purpose of public consultation in the Environmental Screening Process is to allow the proponent to identify and address public concerns and issues, and to provide the public with an opportunity to receive information about and make meaningful input into the project review and development. Public consultation is required for all projects that are subject to the Environmental Screening Process.”<sup>3</sup>* The Environmental Screening Process applies to all projects listed in section 4 of the Electricity Projects Regulation, and are referred to as Category B projects, and also applies to some modifications to electricity projects.

*“The Ministry of the Environment and Climate Change believes that public consultation is vital to sound environmental decision-making.”* And promises to *“provide opportunities for an open and consultative process when making decisions that might significantly affect the environment”* and *“will provide opportunities for involvement of Aboriginal peoples whose interests may be affected by such decisions so that Aboriginal interests can be appropriately considered”*.<sup>4</sup>

Many times ORA has raised concerns over inadequate identification of environmental effects, piecemeal planning and studies, insufficient consideration of cumulative effects, and a lack of meaningful public and Aboriginal consultation. Public and First Nation consultation and input can and has led to stronger mitigation of impacts, as well as improved and more environmentally friendly projects.

*“Waterpower facilities are unique by comparison to other types of renewable energy generation facilities as they have site-specific engineering considerations. The current rules for waterpower facilities are customized with clear requirements for considering environmental impacts and working with communities to design better projects in cooperation with government.”<sup>5</sup>*

Fluctuating flows and water levels, reduced water quality, mercury in fish tissue, and risks to public safety can impact on communities for many kilometers upstream and downstream of a hydroelectric generating station, and must be consulted.

A fully transparent and meaningful public and Aboriginal consultation and involvement throughout the Class EA process is absolutely necessary, and vital to healthy riverine ecosystems.

### **Projects 500 kW and Under Associated with Existing Infrastructure and Increases in Efficiency:**

Currently, all new waterpower projects under 200 MW in Ontario must meet the requirements of the Class EA for Waterpower. It is already a very streamlined proponent-driven self-assessment screening process that addresses Class B projects with potential effects to the environment that can likely be mitigated. The Class EA applies to “classes” of projects which are carried out routinely; and have predictable and mitigable effects to the environment, and therefore do not warrant an Individual EA.

However, waterpower is very site-specific, whether it is 200 MW or under 500 kW, with complex considerations that can result in numerous negative impacts both upstream and downstream of a dam. In fact, these smaller projects on creeks and rivers, especially during the low-flow seasons, will sometimes hold water back to meet peak demand and reap lucrative peaking bonuses, and/or face shut-down because of lack of flow.

The cumulative impacts of many small projects can be even larger, depending on the circumstance,<sup>6,7</sup> and *“the accumulated effects of multiple small-scale waterpower operations could amount to similar overall environmental degradation per unit of electricity generated as is caused by larger projects.”<sup>8</sup>*



History has shown that there has been a clear reluctance by industry to provide adequate mitigation of some of the more common impacts of dams, such as impaired water quality, reduced flows, habitat fragmentation, isolation of species, interrupting the exchange of nutrients between ecosystems, and turbine mortality.

One of the most significant reasons for the decline in many iconic species of fish in Ontario is the almost total lack of fish passage at most hydroelectric and water control dams. Without the provision of safe and suitable passage, fish are unable to move upstream in order to access critical habitat and spawning beds; and during downstream migrations many fish pass through the turbines and are killed or maimed.

The situation is even more critical for species such as the American Eel and Lake Sturgeon that are unable to migrate past a myriad of dams that obstruct access to prime spawning areas.

In today's environment of rapidly changing climate, there is increasing uncertainty surrounding waterpower projects and their economic and environmental sustainability. Waterpower projects often have overly optimistic benefit projections, and projects could become uneconomical in the event of reduced flow due to climate change, evaporation, and other competing demands on water use and availability (such as expansions in irrigation, municipal water use, environmental flows, industry, etc.).

It is also essential to consider the broad range of ecosystem benefits that would result from decommissioning a dam or water management infrastructure. In fact, the public may want to see a cost benefit analysis to determine feasibility. The daily, seasonal and annual variations of small hydro operations are intermittent and unreliable. Therefore, building a small waterpower facility may not be cost-effective on a smaller river or creek because of the high cost of construction, intermittent and unreliable flows, especially in relation to the small amount of power that would be generated.

The electricity produced by small hydro is unreliable because it peaks during the high flows of spring when power is in low demand, and produces at its lowest during the hot summer months when consumption and demand are highest. During the low flow season of summer or during drought conditions many true run-of-river and even some peaking facilities, especially on smaller rivers, cannot operate efficiently, and often have to be shut down.

To further highlight this point, in 2014 an analysis was conducted by the Ontario Power Authority to determine the best means of connection of remote First Nation communities, and to enable forecasted growth to the Ring of Fire. It reported "*Northern hydroelectric generation is an energy limited resource known to have significantly reduced output and availability during drought conditions of the river system supplying these generating units.*"<sup>9</sup> In fact the recommendation of this report was to not build any new hydroelectric facilities, but primarily to build new transmission lines. This highlights the need for a cost/benefit analysis to determine whether these types of projects are environmentally and/or economically viable.

ORA is concerned that there are now 40 new waterpower applications awaiting approval under FIT 4. The environmental impacts of waterpower projects will be difficult to predict with any certainty in a changing climate, and yet facilities are provided with 40-year procurement contracts. This uncertainty creates socio-economic and environmental risks, especially when there are no up-front dam decommissioning provisions required.

OWA wrongly assumes that these types of projects associated with existing infrastructure, or that increase efficiency of an existing waterpower facility, are least likely to involve new environmental effects. The proposed amendment leaves great latitude when it uses terms like "*very limited additional fluctuation in the water elevation levels*", and "*do not have any significant new inundation area*". Existing water management regimes can provide great latitude for operators when using a mean monthly high water level or a seasonal operating band to maximize daily peaking operations. Even terms like "*very minimal*", "*short term*", and "*localized environmental effects*" are nonspecific, open for interpretation, and create a great deal of uncertainty.

There are many key considerations when retrofitting or increasing efficiency at an existing water



management infrastructure, whether it is for under 500 kW or 200 MW– the impacts of a waterpower project are proportional to the size, location and health of the water body, and can impact on communities and the environment far beyond the immediate zone of impact.

These types of operation changes can and do result in major environmental impacts, and must be required to follow a rigorous environmental assessment process, including public and First Nation consultation.

### **Conclusion:**

The Ministry of the Environment and Climate Change's vision is an Ontario with clean and safe air, land and water that contributes to healthy communities, ecological protection, and environmentally sustainable development for present and future generations. This can only be accomplished through an evidence-based precautionary approach and a thorough environmental assessment process.

It would be prudent to look to the United States (US) where the attitude towards dams has changed, and obsolete dams are being removed at a rapid pace. In 2015 alone, 62 dams were removed and, to date, 1,300 dams have been removed across the US. *"Now, the benefits of dam removal are becoming even more pronounced as it is helping strengthen the resiliency of communities and wildlife in the face of a changing climate."*<sup>10</sup> This is happening today, because there is a growing awareness that our future is reliant on the life and health of our rivers.

It is essential that proponents are held to account, to effectively mitigate any negative environmental effects such as methylmercury accumulation in fish tissue, blue-green algae, inundated wetlands, and other water quality and quantity impacts.

In the US, the re-licensing process involves a substantial Environmental Impact Statement, which considers the project's impacts, and is then weighed against the value of the power it generates, as well as the projected ecological value of its removal. Based on these findings, the regulator may decide not to re-license a project, or apply a conditional approval, and maintain the ability to terminate or modify a project's license if it has been violated.<sup>11</sup> This is an excellent model for Ontario to adopt.

Healthy rivers and wetlands are key to successful adaptation to the extremes of climate change, and are major determinants to water quality in the Great Lakes. *"The scientific literature unequivocally demonstrates that streams, regardless of their size or frequency of flow, are connected to downstream waters and strongly influence their function."*<sup>12</sup> It is essential that we pursue sustainable forms of power generation in order to conserve biodiversity, and our life-giving freshwater resources.

The Class EA is governed by the Environmental Assessment Act (Act), R.S.O. 1990, Chapter E.18. The purpose of the Act *"is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment"*. R.S.O. 1990, c. E.18, s. 2. It does not include the betterment or ease of proponents and private corporations.

This proposed major amendment is moving in the absolute wrong direction. Instead of a more streamlined Class EA for Waterpower, the OWA should be proposing amendments to provide for a much more rigorous and accountable process that ensures fish friendly turbines, effective and safe fish passage, a more rigorous cumulative effects assessment, and a more comprehensive and meaningful consultation process.

ORA urges the MOECC to reject all aspects of the proposed major amendment to the Class EA for Waterpower (except the minor housekeeping changes), on the grounds that waterpower is far too complex and site-specific to assume that projects under 500 kW at existing infrastructure, or that increases in efficiency of an existing waterpower facility, would be less likely to involve new environmental effects or impact on communities. This is absolutely wrong thinking for the protection, conservation and wise management of Ontario rivers.



Thank you for this opportunity to comment.

Respectfully,

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cc: Paul Norris, Ontario Waterpower Association – [Pnorris@OWA.ca](mailto:Pnorris@OWA.ca)

<sup>1</sup> *Guide to Environmental Assessment Requirements for Electricity Projects*. January 2011

<sup>2</sup> *Guide to Environmental Assessment Requirements for Electricity Projects*. January 2011

<sup>3</sup> *Guide to Environmental Assessment Requirements for Electricity Projects*. January 2011

<sup>4</sup> *Statement of Environmental Values: Ministry of Environment and Climate Change*

<sup>5</sup> *Waterpower Facilities, Ministry of Environment*. PIBS 7232e01

<sup>6</sup> *Ibid.*

<sup>7</sup> Kibler, K.M., and Tullos, D.D. (2013), *Cumulative biophysical impact of small and large hydropower development in Nu River, China*, *Water Resour. Res.*, 49, doi:10.1002/wrcr.20243.

<sup>8</sup> Abbasi, T. and Abbasi, S.A. 2011a. *Small hydro and the environmental implications of its extensive utilization*. *Renewable and Sustainable Energy Reviews*, 15: 2134-2143.

<sup>9</sup> *Ibid.*

<sup>10</sup> *2015 Dam Removals, 62 Dams Removed in 2015, Benefitting Rivers and Communities Nationwide*

<sup>11</sup> *Federal Energy Regulatory Commission, Applications for New Licenses (Relicenses)*. Online: <http://www.ferc.gov/industries/hydropower/gen-info/licensing/app-new.asp>

<sup>12</sup> *U.S. EPA. Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-14/475F, 2015.