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Vanesa Enskaitis Public Affairs Liaison Xeneca Power Development Inc. T: 416-590-9362 X 104 E: venskaitis@xeneca.com

Dear Ms. Enskaitis:

Re: Class Environmental Assessment Report for the Proposed Ivanhoe River – The Chute Generating Station

The Ontario Rivers Alliance (ORA) is an organization with a focus on healthy river ecosystems throughout the Province, and represents some 30 organizations across Ontario. Therefore, we wish to comment on several points with regard to your Class Environmental Report and its supporting documentation, for the proposed The Chute Generating Station, on the Ivanhoe River.

The intent and purpose of the Environmental Assessment Act (EAA), R.S.O. 1990, c, E.18 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."

It is the position of the ORA that hydro-electric generation, in the form Xeneca is suggesting at The Chute, will have unacceptable environmental impacts, and does not contribute in any way to "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." The ER is very lacking in several extremely important areas, and from the information that has been presented, the cumulative effects of this proposal would have a devastating effect on the Ivanhoe River's entire riverine ecosystem, as well as those bodies of water below it.

The short comment period that has been allowed the public and stakeholders has not made it possible to review the ER and all its supporting documentation in sufficient detail; however, below you will find ORA's comments on several areas of concern:

1. <u>Cumulative Effects</u>

"Modified Run-of-River Operation" – water flow will be held back during non-peak hours for production during peak demand hours for anywhere from 7 to 48 hours, depending on the river flow levels; and result in, to name only a few effects that were listed in your ER:

a. Elevated methyl mercury

i. Appendix C – Page 241, April 19, 2011 – Minutes of EA Coordination Meeting - MOE (ES)
 – "ES noted that additional information was required for the PTTW application and that methyl mercury resulting from the impoundment of water was of concern to the MOE."

ii. ER – p-77, Environment Canada, "It was noted that further consideration was required since the undertaking would result in the creation of an upstream head pond, presenting the potential of an increase in mercury levels in both surface water and fish tissue."

- iii. Increased mercury levels in fish tissue are a known health hazard, particularly to pregnant women and their unborn children. In this area native communities depend upon the protein of fish in their diet, and increased mercury will be a future health hazard to these communities, other local stakeholders, and anglers.
- iv. Environment Canada states, "Levels of mercury, unlike PCBS and DDT, have increased in the past 20 years in fish eating birds and mammals. A striking example is the twofold increase from 1975 to 1995 observed in mercury in the thick billed murre eggs in the Canadian high artic (Braune et al. 2001).
- v. Another independent line of evidence that mercury inputs to remote locations have been increasing comes from profiles in sediment cores. These also infer that inputs have increased greatly relative to pre-industrial times.
- vi. Increased production of mercury methylation is a well-known problem with water held in holding ponds see P-69, Environment Canada. 2001. Threats to Sources of Drinking Water and Aquatic Ecosystem Health in Canada, National Water Research Institute, Burlington, Ontario. NWRI Scientific Assessment Report Series No. 1. 72p Page 69.

 Impacts of Dams/Diversions and Climate Change
- Note: 1) Has Xeneca undertaken core sampling to identify mercury levels that exist today in the inundation zone? A baseline must be established?
 - 2) Has Xeneca undertaken a scientific study based on probable mercury loading at the site to extrapolate the future mercury methylation rates, and their potential effects on the local fish community?
 - 3) How will Xeneca protect local stakeholders and aboriginal communities who rely on this water for drinking?
 - 4) What are the anticipated health threats to aboriginal and local stakeholders over the 40 year contract of this proposed facility?

b) Warming of water in the head pond

- i. Xeneca is proposing a 6.4 km head pond and refers to it as "quite small", which is a relative term, but in fact the headpond will consume an overall surface area of 59 hectares, or 146 acres hardly "small" by most peoples' standards.
- ii. In Annex B p-51, The ER dismisses the potential for warming of water in the headpond, "Due to the small amount of storage in the headpond (a few hours at most flows), there is not enough residence time to significantly alter water temperatures. Further, any temporary storage would occur during the nighttime hours when additional solar absorption is limited"; and yet:
 - Xeneca contradicts itself because on the very next page, of Annex B p-52, Xeneca states, "Due to the limited storage at The Chute, all inflow from upstream will be passed downstream within 48 hours" hardly "a few hours";
 - Peak demand hours are from 11:00 am to 7:00 pm and during the summer months
 daylight spans from 6:00 am to 9:30 pm roughly that would mean water would sit
 for 7 1/2 hours, exposed to solar absorption not to mention the possibility of it
 sitting in the headpond for "48 hours", hardly "during nighttime hours"; and
 - In ER, Table 3: Operating Mode Occurrence by Season, it indicates Low Flow occurs at the rate of 33% in summer and 36% in Fall, and these are the times water will be held back the longest, and the months with the greatest number of solar absorption hours.
- iii. So during the summer season when water levels and flow rates are at their lowest, this is when water will sit the longest in the headpond, and because flow rates are slower it will take longer to fill, which would mean a greater potential for warming, as well as exposure to solar absorption for approximately 15 of those 48 hours.

iv. It is well known that impoundments, warmer waters, and stagnation, combined with flood events, all lead to a concentration of more waterborne pathogens and algal toxins.

Note: 1) What are the expected impacts to local stakeholders and aboriginal communities with this anticipated increase in pathogens and algal toxins?

2) ORA requests more detailed information on the effects this thermal regime will have on known populations of sensitive coldwater species such as brook trout and ling, or the impact of construction/operation of this facility would have on the ability of the up- and downstream reaches to support sensitive coldwater species.

c) Town of Foleyet Effluent Concern

Xeneca totally missed the point in their June 6, 2011 response to Tim Mutter's concerns about "effects on effluent dilution at the Town of Foleyet, answering, "The upstream inundation extent up the river is approximately 6.4 km (including dynamic backwater effect). The effluent pond at Foleyet is located at approximately 19 km up the river. An effect on the effluent pond will not occur due to this project."

- i. The Town of Foleyet is also concerned about the potential for low water levels and floods in the spring The Chute GS creates another potential for ice blockage and could cause water to back up into the Town of Foleyet.
- ii. ORA's position is that any effluent discharge from Foleyet, if allowed to sit in a head pond exposed to solar absorption, and warming for 7 to 48 hours, could add to an already simmering brew and create a bacterial soup, having devastating effects on the riverine ecosystem, both upstream and downstream of The Chute GS

Note: 1) ORA requests that Xeneca provide detailed analysis to demonstrate that the above scenario WILL NOT happen.

2) The ORA requests a study to determine the potential environmental effect of the Town of Foleyet's effluent discharge on the riverine ecosystem, and all downstream water bodies, when allowed to sit in the headpond for up to 48 hours.

d) Identified Potential Effects

Xeneca listed numerous potential effects from pp-98-100 of the ER.

- i. It was very interesting to note Xeneca's assumption in the ER p-146, that "The majority of the identified adverse effects were determined to be "not significant", meaning that they are not likely to cause unacceptable harm to environmental quality, productive capacity of the effected environment, or the socio-economic and cultural attributes of the area.
- ii. Further to this point, Xeneca only marked three adverse environmental effects, "determined through professional judgement to have significance". Your judgement of whether an issue is "significant" is rather biased.
- iii. In Table 5, p-136 of the ER,– Impacts to tourism/outfitters as a result of impacts to fisheries and public access your rating for the local, regional and provincial economies was "not significant" You can be assured that the outfitters would disagree.
- **Note:** (1 ORA is requesting clarification on whose professional judgement Xeneca is referring to? Would it be the professional judgement of a proponent who has everything to lose by finding significant risks?
 - (2 Independent and unbiased studies must be undertaken to ensure the significance, or non-significance, of all the potential negative effects in the ER.
- e) **Ivanhoe Lake Dam** is located approximately 40 km upstream from The Chute, and is yet another blockage to upstream fish passage;
- f) **Third Falls hydro-electric facility** would be located 43km downstream, and is proposed to have an inundation area that would reach to the downstream side of The Chute; and Xeneca admits in its report "there may be cumulative effects associated with intermittent operation and inundations";
- g) Climate Change and other weather related effects in ER p127 you mention the changes

- predicted was a doubling in the number of extreme rain events, but conveniently forgot to mention an expectation of extreme drought conditions as well;
- h) **Variable Flow and Rapid Flow Changes** presents obvious problems with turbulence, sedimentation, erosion, and drying of shoreline.
- i) **Erosion and Sedimentation** are a major concern with any peaking operation.
- j) Clearing for new Transmission Lines and Access Road/s creates corridors for run-off of rain-water and snow melt, and brings more sedimentation and debris into the ecosystem.

2. Contempt of Process

a) Site Release & Applicant of Record:

MNR and MOE representatives both made clear recommendations in writing to Xeneca, on several occasions, to wait until the Site Release process was completed before formally commencing with the Waterpower Class EA process. MNR and MOE tried to follow their policy and procedure, and their legal obligation to the public, by protesting Xeneca commencing the EA process; however, Xeneca pressed on in spite of their warnings.

- Xeneca was awarded a FIT Contract on April 29, 2010, and immediately commenced the EA process with field studies that Spring and Summer, before any approval had been granted by MNR or MOE.
- ii. It is mentioned time and again in Appendix C that Xeneca's timelines are tight and must meet the deadlines.
- iii. Appendix C, P-65, September 20, 2010, a letter was sent from C. Hayward, Director of Southern Region, on behalf of her Northern Region colleagues, stating MNR would participate in Xeneca's Class EA process, however, still recommended a Site Release be awarded before commencing.
- iv. So MNR in Southern Region decided to set aside their policy and procedures, and their regulations, and give reluctant compliance, but only after Xeneca had already begun their field studies.
- v. Site Release and Applicant of Record have not been awarded to this day.
- **Note:** 1) Why should Xeneca be given preferential treatment, or even expect it?
 - 2) Why should Xeneca's timelines take precedence over policy, procedure, provincial regulations, and most of all the health and well-being of the community, the environment, and the riverine ecosystem?

b) Field Studies Ongoing:

The MOE and MNR expressed concerns with respect to the timing of the completion of the EA since studies and investigations were ongoing, and wouldn't be completed before the Environmental Report (ER) was submitted, and would not be addressed in the document; and thus there would remain a requirement for public consultation to present the findings of these post EA investigations.

Note: ORA submits that Xeneca must complete all studies before submitting their ER for approval. Stakeholders and authorities cannot make an informed decision when all the facts are not known

c) **Project Description:**

At the May 30, 2011 meeting between MNR and Xeneca, p-107, it was noted that, "Generally, the Project Description for the Chutes was insufficient to conduct a thorough review and provide substantive, specific comments to Xeneca. Little detail was provided on the construction, operation, transmission routes, or zone of influence of the facility." Xeneca was asked to prepare an addendum to the PD to include updates, but deemed it unnecessary.

d) **Public Consultation:**

i. Xeneca frequently repeats the mantra, "this is a proponent led process", and conducts itself in a very cavalier manner. The proponent typically provides the public with very

little information and at the very last minute has dumped volumes of technical documents into the public domain – knowing full well that

- Most stakeholders are lay people, and are on a very steep learning curve; and
- Have no access to funding for environmental consultants and/or lawyers.
- ii. MNR recommended that Xeneca hold PICS in Foleyet and Timmins, and yet Xeneca decided to hold only one meeting, on July 7, in Chapleau with no meeting in Timmins. A June 17, 2011 memo from Enskaitis to Sheila Derasp, Local Services Board of Foleyet, stated, "The PIC will take place on July 7, 2011 in Chapleau (location requested by the Ministry of Natural Resources)." I found no documentation from government agencies recommending the meeting be held in Chapleau instead of Timmins and Foleyet.
- iii. Appendix C p-249 April 19, 2011 Minutes of EA Coordination Meeting Public Consultation: "MNR has concerns regarding the degree and method of public consultation up until this point. Public Information Centres have been held in Foleyet, yet none in Timmins and Chapleau where many people that use the river reside. Open house material was lacking. Public information boards offered very little detail with respect to site design and/or the proposed water management regime. Very little, if any information was posted with respect to other permit and approvals that are required (e.g. Requirements for WMP and amendments). MNR has been receiving several letters of concern from the public and some are claiming that Xeneca is not responding to them."
- iv. Xeneca's Environmental Report is sorely lacking field studies and final conclusions. How can stakeholders and authorities make an informed decision or draw any conclusions when so much information is lacking?
- v. So many categories in Table 4 of the ER, under "Residual Effect" indicate "Unknown due to outstanding data and information". In Table 5 Residual Environmental Effects and Significance the answer to the majority of the items is "Not Significant". Again, it should not be Xeneca deciding whether these effects are significant or not it is to their advantage to say "Not Significant". Leaving these vitally important assessments up to a proponent is like putting the fox in charge of the henhouse.
- vi. On Friday, August 5, 2011, ORA sent an email to Mark Holmes and Vanessa Enskaitis, with a read receipt, requesting an unsecured copy of the ER and supporting documentation to make life easier for stakeholders to cut, paste, highlight, etc., to help meet our deadline for comments, and to date have not received a response.

Note: ORA requests:

- 1) An open, transparent and cooperative EA and approvals process;
- 2) Xeneca revisit all potential residual effects, and hire an independent consultant to conduct studies to confirm these important determinations; and
- 3) Public Meetings:
 - Must be held in a forum format where public participation is open, accommodating, fully informative, and everyone can hear all the questions and answers; and
 - Xeneca provide displays with site specific design and engineered drawings, as well as details of the water management regime.

3. Mitigation

ER, Table 4, 10th page – Fish Migration. "Upstream fish passage through the eastern channel is highly dependent on water levels and velocities and is only possible under certain flow conditions." Peaking creates unnatural fluctuations in river level and flow velocity and could affect both migration and spawning.

- a) Will Xeneca release an increased environmental flow during spawning runs?
- b) Fish ladders or resting areas for safe upstream and downstream passage are mandatory per the 1977 LRIA guidelines. Xeneca is proposing a Gross Head of 9.5m, which is an impossible barrier

for upstream and downstream fish passage. This mitigation step would help preserve fish diversity and numbers. Hydro-electric generating stations will earn proponents several millions of dollars over the life of the 40 year contract, so must responsibly provide this type of effective mitigation.

- c) Michigan Department of Natural Resources: "It was recognized long ago that obstructions in rivers such as dams fragment aquatic ecosystems and affect fish populations. Michigan's rivers are fragmented by over 2,500 impassible registered dams and likely twice as many other barriers such as unregistered dams and poorly designed culverts. Fragmentation of rivers can and has resulted in the decline of fish production from those waters and in some cases a complete loss of fish species. Most fish species are affected by fragmentation but species such as steelhead, Chinook salmon, lake sturgeon, or suckers that are required to migrate to spawning grounds are particularly susceptible to declines from impassable river obstructions. Thus, effective fish passage can be critical to the protection and recovery of many fish stocks." See fishway designs at: http://michigan.gov/dnr/0,1607,7-153-10364 52259 19092-46291--,00.html
- d) The Ivanhoe River is known to have Lake Sturgeon, and the ORA has recently heard from a local fisherman who reported that he caught a 47" Lake Sturgeon near the base of The Chute 4 years ago, and another two people who caught two Lake Sturgeon while angling from shore, only three years ago.
- e) It is well known that turbines chop up fish, and today there are low head and fish friendly turbine designs to choose from, with a 100% survival rate.

Note: If this proposal were to go forward the ORA strongly requests:

- 1) Fish ladders and/or resting areas for safe upstream and downstream passage;
- 2) A long-term study to establish the presence, numbers, seasonal movement, and possible spawning areas of Lake Sturgeon;
- 3) Fish friendly turbines; and
- 4) That a portage for canoers be provided.

4. Public Safety

Xeneca states in B-Annex I, p-14, 3.3 Public Safety & Civil Structures, "Public consideration could arise due to variability in flows and the rate of change in flow levels in the Variable Flow Reach. Possibly affected could be recreational users who are camping, fishing or hiking at the edge of the river in this location (Xeneca left out canoers or anyone that might be swimming or wading)..... It should be recognized that intermittent operation would only occur during low flows, most of which occur during the winter months when the river is frozen and recreational uses are limited."

- a) The Ivanhoe River is a recognized canoe route which provides passage to James Bay.
- b) Xeneca conveniently disregards the summer months here, and yet the Hydrograph shows the lowest water levels during the summer months. What else is Xeneca leaving out?
- c) As indicated by local stakeholders in the creel survey, ice fishing and snowmobiling are common in the area.

Note: 1) ORA requests that Xeneca undertake further studies and incorporate effective safety measurers into their operating protocol to ensure public safety, both above and below the dam.

2) Combined with global warming and poorer ice conditions above and below the dam, what mitigation steps does Xeneca propose to protect local stakeholders?

5. Decommissioning of Dam

ORA is requesting that Xeneca lodge funds in escrow for dam decommissioning, so that if for some reason the generating station is no longer viable and must be removed, the funds will be there to take care of it. There is a very good likelihood this could happen due to climate change, the possibility of a withdrawal of the FIT program, or perhaps major damage to the dam caused from ice and/or flooding.

6. Modified Run-of-River

Xeneca has been referring to these proposals as "modified run-of-river", and interprets this to mean the water in = water out.

- a) ORA submits that if normal water flow is held back and left sitting in the head pond, by your own report for up to 48 hours, then this would be an interruption in flow, which is not simply water in and water out. The water quality would be changed, and would certainly not be of the same quality going in as it would be leaving, after sitting for 48 hours.
- b) Xeneca refers to this headpond as "small", but small is a very relative term this headpond would be 6.4 km in length, with an inundation are of 59 hectares (146 acres) in all.

Note: MNR and MOE must develop standardized definitions and terms, and decide whether the label "modified run-of-river" can be used to describe these types of proposals throughout Ontario.

ORA submits that the term "modified run-of-river" should not be used to describe these types of proposals that hold water back, because it gives the public a very false impression of a benign and unobstructed intrusion into the river flow, when it is obviously not.

7. Installed Capacity – Power Generated

Xeneca states - EA, 3.3.1 – Installed Capacity and Annual Energy Output, "The approximate installed capacity of this project will be 3.6 MW, generated by one turbine unit. This will provide approximately 13,300 MWh of renewable energy annually."

- a) ORA submits that 3.6 MW is the nameplate capacity (IC) and could only be generated if the turbine ran at full power 24-7, which will only happen throughout the Spring freshet. This is misleading to the public. Given typical river flow conditions Xeneca would be lucky to generate at 54% of IC, or 1.94 MW on average, and at times will actually have to shut down the plant due to insufficient river flow.
- In fact small waterpower projects like The Chute can only produce full power during the freshet period when excess hydro power is available from existing large hydro generating facilities.
 These larger plants would have to spill water to allow the unneeded output of small waterpower projects like The Chute to be absorbed, since the FIT obliges OWA to take this power and pay premium rates for it.

Note: ORA is requesting that Xeneca uses standardized references showing installed capacity as well as expected average power generation in all Notices and Reports for all dam proposals in Ontario.

8. Socio-Economic

On ER p-146, Xeneca states "the majority of the identified adverse effects were determined to be 'not significant', meaning that they are not likely to cause unacceptable harm to environmental quality, productive capacity of the effected environment, or the socio-economic and cultural attributes of the area".

- Note: 1) The ORA requests an Economic Impact Study be undertaken by Xeneca to determine the cost of the proposed dam project to the outfitters, lodges and other tourist industries in the area, based on the cumulative effects, to establish how this proposal might affect those who rely on the Ivanhoe River for their living; and
 - 2) To quantify, in detail, any economic benefits to the local community arising from construction and operation of the plant.

9. The Chute and Third Falls

a. Under the Ontario Class Environmental Assessment Act, O. Reg. 116/01, s1(3) it states, "two or more generation facilities that function together as an integrated system for generating electricity shall be

- deemed to be a single generation facility for the purpose of this regulation."
- b. On ER P-146 of the ER Xeneca notes, Xeneca noted, if the Third Falls proposal is approved that the area of inundation would reach right up to the base of The Chute.
- c. Xeneca also noted, "in order to manage the activities, a communications protocol between the operators of the Ivanhoe Lake Dam and the Xeneca facilities (The Chute GS and Third Falls GS) will be implemented."

Note: ORA requests that The Chute, Third Falls proposals, and the Ivanhoe Lake dam, be addressed under one Environmental Assessment, as these three dams would be operated as one unit, and would have a very significant negative cumulative impact on the Ivanhoe River, Groundhog River, and all downstream riverine ecosystems.

Summary:

The CEAA, 4.(2) states, "In the administration of this Act, the Government of Canada, the Minister, the Agency and all bodies to the provisions of this Act, including federal authorities and responsible authorities, shall exercise their powers in a manner that protects the environment and human health and applies the precautionary principle."

The Chute GS Environmental Assessment Report is incomplete as there are still many studies which need to be completed before any kind of approval should be granted. For the many reasons listed above, this type of "modified peaking run-of-river" hydro-electric dam is very harmful to a riverine ecosystem, both upstream and downstream; and when you have two or more dams on one river, the negative cumulative effects are only amplified, and must always be considered together as one. In order to meet the intent and spirit of the Canadian Environmental Assessment Act and the Ontario Environmental Assessment Act, the ORA requests that Xeneca meet their legal obligations under this legislation, and address The Chute and Third falls under one Environmental Assessment Report.

The cumulative effects of all facilities, water management practices, obstructions, roads, transmission lines, diversions, as well as all resulting "Identified Potential Risks", must be considered with a precautionary approach in order to protect the well-being of all communities, the environment, and the riverine ecosystem; and to comply with the EAA and the CEAA. These types of proposals must not be fast tracked, or policy and procedure skipped - there is too much at stake!

The experience of the ORA and the public (ref. 2(d)(iii), in our dealings with Xeneca, has been one of frustration and aggravation at the lack of transparency, openness and cooperation, and this is unacceptable.

We cannot allow private industry to profit at the expense of the community and the riverine ecosystem.

ORA looks forward to your response!

Sincerely,

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