BOYCE HYDRO POWER LLC

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Ms. Peggy A. Harding, PE
Regional Engineer
Chicago Regional Office
Federal Energy Regulatory Commission
230 South Dearborn Street, Room 3130
Chicago, IL 60604
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Subject: FERC Hydroelectric Project Edenville P-10808
Edenville Dam PMF Spillway Alteration Schedule

Dear Ms. Harding:

Attached herewith are the proposed Scope of Work and Schedule for the Edenville PMF Spillway Alterations. This information is contained in the Design Report that was submitted to FERC in November, 2010. However, the proposed Work Plan and Schedule contained in the Design Report are now slightly modified as requested by FERC.

As explained in prior correspondence, once Boyce Hydro Power, LLC's FERC-mandated dam repair work associated with three hydro projects at Sanford, Smallwood, and Secord are completed, the licensee will concentrate on and commence in the summer of 2013 the extensive undertaking associated with altering and increasing the spillway capacity of the six gates located in the Edenville Dam. This spillway alteration project, for reasons of: 1)construction staging, 2) factor of safety in maintaining existing discharge capacity, and 3) realistic economics of annual cash flow for payment of construction work, must be scheduled over an eight-year period of time. This represents a shortening by two years of the schedule proposed in the Design Report submitted to FERC in November2010.

Sincerely yours,

Lee W. Mueller, Architect
Co-Member Manager
Boyce Hydro Power, LLC

wp/LWM
cc: Frank O. Christie, P.E.
Stephen C. Doret, P.E.
Encl.

Boyce Hydro Power, LLC Proposed Scope of Work and Plan (P-10808 Edenville Dam PMF Spillway Alterations)

A. Scope of Work

This proposed scope of work is for the reconstruction of both the Tobacco and Edenville spillways. It includes the removal of all radial gates, the demolition of most of the existing overflow spillway, the construction of new ogee spillways with extended piers, and the installation of new larger radial gates. The retaining walls and piers will be retained, lengthened and strengthened. The toe wall and downstream apron at each spillway will be rehabilitated with no change in shape or dimension. A new bridge will be constructed over the spillways, and an access road and staging area will be constructed for each spillway. This project shall be constructed in stages to maintain structural stability and power generation operations throughout the work. The work will be identical at both spillways, and unless specifically noted the following discussion applies to both.

- **Demolition of existing ogee sections** – The existing ogee spillway sections are hollow dams with an ogee shaped spillway slab supported on beams between piers or abutments. The upstream portion is an inclined barrel arch extending from the spillway crest beam down to the foundation slab. There are 3 spillway sections separated by piers and terminated by abutment walls, or powerhouse wall at Edenville. The foundation slab extends under the full structure and is keyed into hardpan till with numerous shear keys. The removal work includes all gates and lifting mechanisms, the entire ogee spillway slab, the crest beam, and about 60% of the upstream barrel arch from the top down.

- **New spillway and Pier Extensions** – The new spillway will be a mass concrete gravity dam constructed in phases. The first phase will be to pour the bottom half of the spillway to maintain stability when the demolition takes place. This pour will be made on top of the foundation slab and inside the existing hollow spillway with no upstream dewatering required. The second phase will be to extend the piers upstream and incorporate new stop log slots for individual bay dewatering. The upstream pier extensions will be done in the dry behind a full width cofferdam. To provide additional storage capacity for a possible flood during this phase it is anticipated that the reservoir level will be lowered by approximately 8 feet while the cofferdam is in place. This reservoir lowering will take place during the summer months for approximately 90 days when the normal seasonal rain conditions are the driest. Once this is complete and the cofferdam removed, new stop logs will be inserted, the existing spillway demolished, and the remaining ogee sections poured. This last phase will be accomplished one spillway bay at a time so that no more than one gated section is out of service at a time. During this last phase the piers and retaining walls will be strengthened.

- **Radial Gates** – During the final phase of spillway construction, new 22 foot high radial gates will be installed as each bay is dewatered. Each gate will have its own motor driven cable and drum lifting mechanism.

- **Bridge** – The bridge will be constructed one bay at a time as the bays are dewatered and finished. This will provide access to the new gate hoists as the stop logs are removed from the finished bay and the gate is put into service. The bridge will also provide access and a work platform for carrying out construction in the next bay.

- **Staging Area and Access Road** – The staging area and access road will b e the first element to be put in place at each site. The staging area will be constructed by driving sheet piling into the reservoir a distance out from the top of embankment. The area so isolated will then be backfilled to the height of the embankment. Sheet piling will also be used in the staging area on the downstream side of the embankment to protect the downstream face from excessive loading. The access road will likewise be constructed by driving sheet piling along the edge of the reservoir and backfilling between the piling and the embankment. The road will then be moved away from the downstream edge of the embankment.

- **Downstream Retaining Walls** – The left retaining wall at the Edenville spillway has recently been reinforced and should not require any further work. The right retaining wall (the powerhouse retaining wall) is adequate for flood protection but needs rehabilitation work to restore it to original condition. Both downstream retaining walls at the Tobacco Spillway need their extensions reconstructed.

B. Work Plan and Schedule (2013-2020)

The following proposed work plan schedule will be executed in the order described below:

Year One 2013: Tobacco – Access road, staging area, downstream retaining walls & aprons. This construction will require a DEQ permit for work in the waters of Wixom Lake.

Year Two 2014: Tobacco – Spillway concrete fill & upstream pier and wall extensions. This phase of construction will entail the installation of a coffer dam and an 8' draw down of Wixom Lake that will require a FERC license amendment.

Year Three 2015: Tobacco – Bay 3 construction & gate installation.

Year Four 2016: Tobacco – Bay 1 & 2 construction & gate installation.

Year Five 2017: Edenville – Access road, staging area, downstream retaining walls & aprons. This construction will require a DEQ permit for work in the waters of Wixom Lake.

Year Six 2018: Edenville – Spillway concrete fill & upstream pier & wall extensions. This phase of construction will entail installation of a coffer dam and an 8' draw down of Wixom Lake that will require a FERC license amendment.

Year Seven 2019: Edenville – Bay 3 construction & gate installation.

Year Eight 2020: Edenville - Bay 1& 2 construction & gate installation.

All of the above-noted construction work is expected to take place during the months of June, July, August, and September of each year.

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