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Forest Service / Bureau of Land Management
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IN REPLY REFER TO:
2770(FS)/2320(BLM)

February 28, 2007

Barbara Greene
Boundary Relicensing Team Leader
Seattle City Light
POB 34023
Seattle, WA 98124-4023

RE: Boundary Hydroelectric Project, No. 2144
USDA Forest Service and Bureau of Land Management Comments on Revised Study Plan

Dear Ms. Greene:

Through this letter the USDA Forest Service (Forest Service) and the Bureau of Land Management (BLM) are commenting on Seattle City Light's (SCL) Revised Study Plan (RSP) for the Boundary Hydroelectric Project (Project) filed with the Federal Energy Regulatory Commission (FERC) on February 15, 2007. The Forest Service and BLM have collaborated on and coordinated this response.

The RSP incorporates most of the Forest Service's specific comments on the Proposed Study Plan. The Forest Service and BLM appreciate SCL's willingness to work collaboratively with all of the stakeholders involved in the Boundary relicensing. While SCL did not address all of the agencies' comments, the RSP has addressed the agencies' issues and concerns with the following exceptions.

Land Uses

The Forest Service and SCL are not in complete agreement as to the timing and importance of information regarding land ownership; property and Project boundaries; and Project related road access. It is the Forest Service's view that this information is fundamental to any project planning including development and execution of the RSP. While SCL has indicated that it will provide information on Project boundary survey and access roads condition and management, the proposed timing for providing that information may be problematic. For example, SCL states in the Land and Roads Study Plan (page 7) that

> *If it is determined additional roadway access to the Project is needed for public and recreational use, based on the results of the RRS and follow-on analyses noted above in Task 1, SCL will conduct future roadway condition analyses along these new routes.*

The amount of time between completion of the analysis (February 2009) and submission of the Preliminary License Proposal (PLP) (April 2009) may not allow sufficient time for incorporating data or

results into the PLP. The Forest Service reiterates its concern and recommendation that SCL collect all the necessary boundary and road data/information early in the study period so that the results will be available for other studies and post study reporting and integration. Attachment A (three pages) displays the extent of the road system that the Forest Service recommends for inventory.

With regard to land ownership and property boundaries, there may be some misunderstanding between the Forest Service and SCL. The Forest Service understands SCL's concern with the cost and level of effort that may be necessary to gather the information requested by the Forest Service in the Land and Roads Study. SCL states in the Lands and Roads Study (page 7) that

> *FERC boundary information will be compiled and displayed in tabular and mapped (GIS) format, including legal description, location of surveyed lines (e.g., east line of NE1/4) and monuments (corners), date of survey, and record of survey filing information (if applicable). Results of an initial review of the FERC Project boundary will be made available to relicensing participants in 2007.*

While the Forest Service recognizes the utility of the information SCL will compile through this process, the proposed analysis may not capture the information necessary to describe adequately the ownership and boundary situation. The Forest Service reiterates its interest in information pertaining to property boundaries (Public Land Survey System) closely associated with the Project boundary. For example, in Section 15, Township 39 North, Range 43 East, there is a very complex landownership and property boundary pattern closely associated with the existing Project boundary. The Forest Service is interested in having the necessary information gathered so that a clear understanding can be developed for the on-the-ground extent of SCL and National Forest System ownership (see Attachment B).

Toxics Assessment

While SCL has revised its proposed Toxics Assessment Study Plan in response to stakeholder comments, the plan does not fully address several issues of concern to the Forest Service and the BLM. Additionally, the timing of the development of the proposed Phase Two of the study may create a situation where two FERC approvals will be necessary for the overall study plan. This circumstance may delay the integration and synthesis of study results.

The revised Toxics Assessment Study Plan reads as if it is unknown whether a nexus to the Project exists. The Forest Service believes this is clearly not the case. Land ownership is an important determinant as to Project "nexus" and a portion of the Josephine Mine site is within the Project area and is owned by SCL. A legal description of the ownership of this property should be included in the RSP.

The Environmental Protection Agency (EPA) asserts that SCL owns the land (EPA 2004) where EPA sampling and analysis of mine tailings from the Josephine Mine Site found toxics in exceedance of allowable (EPA 2002) thresholds for various constituents. The sediments, tailings, and waste rocks situated along the shoreline of the Boundary Reservoir and the associated contaminated material on the reservoir bed are significant and should be addressed by the Toxics Assessment Study. In addition, the underground workings (e.g., tunnels, shafts, stopes) associated with the Josephine, Yellowhead, and Lookout mines along the Pend Oreille River in the area of the Boundary Reservoir are another source of heavy metals, and should be evaluated as part of the Toxics Assessment Study. These workings were created to access fractured, sulfide deposits and vein structures containing lead, zinc, cadmium, uranium, and copper among other heavy metals. These openings penetrate drain faults bringing groundwater into contact with the workings. Contaminants in the fractures and exposed workings become oxidized and pulled into solution during periods when the surface water elevation of the reservoir is high. The toxics are then transported out of the workings and into the reservoir during low pool. (See Attachment C.) The

BLM is unaware of any effort to locate or sample water at the openings where reservoir water floods and drains the underground mine complexes. The Revised Toxics Assessment Study Plan does not propose this analysis.

The BLM proposes that SCL locate the mine openings affected by the Boundary Dam Reservoir, including openings within or below the fluctuation zone, to determine the total contaminant loading from these sources and to device a plan to reduce or eliminate them. Fluctuations in the surface elevation of the reservoir serve as a mechanism for transporting toxics into the reservoir and downstream.

The Forest Service agrees this information should be included in the Phase 1 analysis, specifically Objective 5 which will "Identify any relationship between Boundary Reservoir operations and pathways of contamination and/or mechanisms of bioavailability for the six toxics of concern." The Forest Service and BLM objectives are to understand whether toxic materials mobilized during the daily fluctuations in reservoir surface water levels are accumulating in the water column and sediments and whether these substances contain concentrations of toxic compounds above state and federal standards and thresholds. If this is the case, further analysis to determine whether toxics are accumulating in the tissues of macroinvertebrates, amphibians and fish within Project reservoir should also be conducted.

Neither Phase 1 nor Two of this plan nor any other water quality related plan within the RSP addresses sampling the water column for toxic concentrations. Existing water quality data, presented in SCL's Toxics Data Spreadsheet for these six toxics of concern within the Project area consists of 22+ year old data for cadmium, mercury, zinc and lead and no data for arsenic and PCBs. More recent measurements of toxics in surface water by the EPA in 2002 are site specific to areas within or adjacent to old or existing mines within or adjacent to the Project area. It is unclear how SCL plans to meet the objectives of Phase Two without collecting additional water quality data. The Forest Service believes sampling the water column is essential to ground truth information gathered during Phase 1, Objective 3 - "Determine the potential pathways of contamination and bioavailability for arsenic, cadmium, lead, mercury, zinc and PCBs that could occur in Boundary Reservoir."

The Forest Service and BLM are concerned further that the Toxics Assessment Study Plan does not provide for sampling the distribution of contaminants within the reservoir by particle size. Generally, finer-grained particles are the product of some milling operation. These particles have a greater surface area, and can be liberated more readily in fluvial systems. A study to determine the effect of daily reservoir pool fluctuations on the distribution of particles of various sizes within the reservoir will allow determination of whether larger particles are concentrated in higher energy areas of the lower reservoir. Finer grained materials on the other hand would likely be deposited in lower energy areas along the reservoir shorelines and bays. The agencies are concerned because these areas are used by the public for swimming and recreation and contaminants would pose a threat to public health. Although the RSP states that "Sampling will include sediment, water column and aquatic biota as appropriate based upon the results of Phase One," the RSP provides no assurance that sediment sampling will occur. The RSP should be modified to clearly state that the water column and sediments will be sampled and analyzed in Phase Two and the sampling and analysis is not contingent on the results of Phase 1. The BLM and Forest Service view this information as essential for determining the potential pathways of contamination and bioavailability for arsenic, cadmium, lead, mercury, zinc and PCBs that could occur in Boundary Reservoir. This information is also necessary for determining if bioassays and biotic tissue sampling is necessary to further understand the effects of Project operation on the health of forest users and the aquatic environment.

Finally, in the RSP Attachment 3 (page 11, comment # 22), SCL's response to the Forest Service comment about inclusion of Lowest Apparent Effects Threshold (LAET) values for PCBs and mercury states,

> *The guidelines in Table 2.2-2 (PSP Table 3.3-2) were used to identify toxics of concern for inclusion in Phase 1 of the study. They are not intended to be used as criteria for evaluating results. . . . Because of a lack of appropriate standards for identifying thresholds for determining Project effects on toxic compounds bioavailability, thresholds will be derived from pathways analysis. . . . Thresholds for determining effects to biological indicators will consider, but not be limited to, LAET and 2LAET. . . . SCL will develop a decision-matrix from pathways analysis that highlights "triggers" as defined by risk assessment analysis for confirmation of harmful effects to biological indicators. . . . Relicensing participants will be given the opportunity to participate in the process described above.*

Forest Service staff has discussed LAET thresholds with SCL and the other stakeholders within the water quality group meetings. It was our understanding that these thresholds, developed by Washington Department of Ecology, would be used as triggers to determine if the results of sediment analysis indicated further sampling and analysis of biotic tissue. This appears to no longer be the case. SCL intends to develop its own thresholds based upon pathways analysis that are yet to be developed. The Forest Service contends that the LAET thresholds are adequate for the purpose of determining significant levels of toxic concentrations in sediment and further development of other thresholds are unnecessary.

If you have any questions related to these comments please contact Glenn Koehn, Forest Hydropower Coordinator at (509) 684-7189 or by e-mail at gkoehn@fs.fed.us. We look forward to continuing a cooperative and collaborative approach to relicensing the Boundary Project.

Sincerely,

RICK BRAZELL
Forest Supervisor
Colville National Forest

ROBERT TOWNE
District Manager
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Enclosures

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