

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
April 26, 2013

OFFICE OF ENERGY PROJECTS

Project No. 14241-000 –Alaska
Susitna-Watana Hydroelectric Project
Alaska Energy Authority

Wayne Dyok
Susitna-Watana Project Manager
Alaska Energy Authority
813 West Northern Lights Boulevard
Anchorage, AK 99503

Subject: Director’s Formal Study Dispute Determination

Dear Mr. Dyok:

Pursuant to 18 C.F.R. § 5.14(l) of the Federal Energy Regulatory Commission’s (Commission) regulations, this letter contains the study dispute determination for the proposed Susitna-Watana Hydroelectric Project (project). This study dispute determination is based on: the study criteria set forth in section 5.9(b) of the Commission’s regulations, applicable law, Commission policy and practice, the technical expertise of the dispute resolution panel, and the record of information.

Background

On February 1, 2013, Commission staff issued a study plan determination on 44 of the 58 studies included in Alaska Energy Authority’s (AEA’s) revised study plan (RSP) filed on December 14, 2012. A decision on the remaining 14 studies was deferred until AEA filed additional information and held meetings with stakeholders. AEA filed the requested additional information on March 1, 2013, and on April 1, 2013, Commission staff issued a study plan determination for the 14 remaining studies included in the RSP.

On February 21, 2013, the National Marine Fisheries Service (NMFS) filed a notice of study dispute pursuant to section 5.14(a) of the Commission’s regulations. This dispute covered the following NMFS requested studies and associated study elements that were either not approved in the February 1, 2013, study plan determination or were approved with modifications:

- RSP Study 7.7, Glacier and Runoff Changes (includes two disputed elements);

- RSP Study 9.7, Salmon Escapement (includes four disputed elements);
- RSP Study 9.11, Fish Passage Feasibility at Watana Dam (includes four disputed elements).

On March 12, 2013, the Commission issued a public notice convening a dispute resolution panel (panel) for the three studies disputed by NMFS, and notified parties of a technical conference. On April 3, 2013, the panel held the technical conference in Anchorage, Alaska. The conference included representatives from NMFS, AEA, the Commission, and other licensing participants.

Dispute Panel's Findings

On April 12, 2013, the panel filed its findings with the Commission. As indicated in Appendix A, of the ten disputed study elements, the panel recommended two modifications to the Director's February 1, 2013, study plan determination to resolve four of the disputed study elements.¹ The panel recommended no changes to the study plan determination to address the other six disputed study elements.²

Study Dispute Determination

Of the panel's two recommended modifications, the modification to RSP Study 7.7, Glacier and Runoff Changes, is adopted in part, and the modification to RSP Study 9.11, Fish Passage Feasibility at Watana Dam agreed to by NMFS and AEA, is adopted.

AEA is required to review existing literature relevant to glacial retreat and summarize the understanding of potential future changes in runoff associated with glacier wastage and retreat, as described in RSP section 7.7.4.1.

RSP section 9.11.1, *General Description of the Proposed Study*, is modified to delete the text that reads: "(2) Can the fish passage alternative be constructed and operated while maintaining the original purpose of the project?" The deleted text shall be replaced with the following: "(2) Can the fish passage alternative be constructed and operated while allowing an economically feasible Project?"

¹ RSP Study 7.7, Glacier and Runoff Changes, one modification to resolve one disputed element (plus three additional recommendations that were not included in the NMFS dispute); RSP Study 9.11, Fish Passage Feasibility at Watana Dam, one modification to resolve three disputed elements.

² RSP Study 7.7, Glacier and Runoff Changes (one disputed element); Study 9.7, Salmon Escapement (four disputed elements); RSP Study 9.11, Fish Passage Feasibility at Watana Dam (one disputed element).

The basis for staff's findings is included in Appendix B.

If you have any questions, please contact Matt Cutlip at (503) 552-2762.

Sincerely,

Jeff C. Wright
Director
Office of Energy Projects

Enclosures: Appendix A—Disputed Studies
Appendix B—Staff Recommendations for the Study Dispute
Determination

cc: Mailing List
Public Files

Appendix A—Disputed Studies

Study No.	Study Description	Dispute Resolution Panel Recommendation	Commission Staff Recommendation
RSP Study 7.7	Glacier and Runoff Changes		
NMFS Disputed Element 1	Implement the three study components related to glacier runoff and climate change that AEA proposed in the RSP	Modify	Modify the study plan determination to require that AEA implement its proposed study component related to a review of existing literature relevant to glacial retreat and summarize the understanding of potential future changes in runoff associated with glacier wastage and retreat, as described in RSP section 7.7.4.1
NMFS Disputed Element 2	Expand the study to consider the effects of climate change on aquatic, riparian, and terrestrial habitat and species	No change	None
RSP Study 9.5	Salmon Escapement		
NMFS Disputed Element 1	Expand the study to include escapement estimates for all five species of Pacific salmon	No change	None

Study No.	Study Description	Dispute Resolution Panel Recommendation	Commission Staff Recommendation
NMFS Disputed Element 2	Expand the study to include additional tagging efforts, tagging locations, and fixed receiver locations in the Middle River segment	No change	None
NMFS Disputed Element 3	Expand the study to include additional tagging and surveys to accurately document fish passage at the dam site	No change	None
NMFS Disputed Element 4	Expand the study duration to include a full generation, from 3 to 5 years, of each target salmonid species	No change	None
RSP Study 9.11	Fish Passage Feasibility at Watana Dam		
NMFS Disputed Elements 1, 2, and 4	Remove cost and add fish passage efficiency as a selection criteria, include fish passage as a project purpose, and include fish passage as an alternative to be evaluated in the study	Modify	Modify the study plan to include NMFS and AEA's agreed-upon changes to the RSP text
NMFS Disputed Element 3	Study duration for all habitat, utilization, and passage studies should include a full generation, from three to five years, of each anadromous target species studies	No change	None

Appendix B—Staff Recommendations for the Study Dispute Determination

RSP Study 7.7, Glacier and Runoff Changes

NMFS Disputed Element 1— *implement AEA’s proposed study in its entirety, including the three study components related to glacier runoff and climate change that the study plan determination did not require: 1) review of existing literature relevant to glacial retreat and summarize the understanding of potential future changes in runoff associated with glacier wastage and retreat, 2) development of a hydrologic modeling framework to predict changes in glacier wastage and retreat on runoff in the Susitna basin, and 3) simulation of inflow of water to the proposed reservoir using downscaled climate projections up to the year 2100.*³

Study Plan Determination

The study plan determination did not require AEA to implement the three components identified in Disputed Element 1 above. The study plan determination concluded that AEA’s proposed climate change assessment would be very costly (section 5.9(b)(7)); the results may be too uncertain to rely on for the development of license requirements (section 5.9(b)(5)); and the effects of the project on environmental resources of the project area can be effectively studied and evaluated using conventional hydrologic studies, monitoring techniques, and predictive models (section 5.9(b)(6)). The study plan determination also noted that the Commission’s standard reopener article would be included in any license as a potential vehicle for making changes to the license if unforeseen and unanticipated adverse environmental effects occur, and that flexibility can be built into operational rule curves to accommodate fluctuations in hydrology during both high and low water years.

For these reasons, the study plan determination did not require AEA to implement any of these study components, but also noted that staff has no objection to AEA conducting these portions of the study.

³ RSP Study 7.7 includes four study components. The study plan determination required that AEA implement one of its four proposed study components, which includes an analysis of the potential changes to sediment delivery from the upper Susitna watershed into the proposed reservoir as a result of glacial surges. The study plan determination did not require the other three study components, which are related to glacier runoff and climate change and are the subject of NMFS Disputed Element 1.

NMFS Study Dispute

In its notice of study dispute, NMFS requested that the Commission require AEA to implement the three other study components related to glacier runoff and climate change proposed by AEA in RSP Study 7.7 (i.e., NMFS Disputed Element 1).

Panel Finding

The panel stated that the main issue with NMFS Disputed Element 1 is whether or not a study would be needed to evaluate the potential hydrological and biological responses resulting from climate change. The panel stated that the issue centers on whether the disputed information needs would be necessary for the Commission's environmental analysis, or whether alternative approaches would provide sufficient information without incurring the additional \$750,000 to \$1,000,000 estimated cost to conduct the climate change assessment.

The panel concluded that, because AEA is planning to conduct the proposed study in its entirety, regardless of the requirements in the Director's study plan determination, this would suggest the information is pertinent to AEA and the information to be obtained would justify the study costs. The panel also concluded that the study results would confirm the viability of the project, in terms of sufficiency of runoff, over the expected lifetime of the project. The panel found that AEA's proposed study would be useful to Commission staff's environmental analysis and would also assist NMFS in exercising its section 18 authority.

The panel recommended that the Commission require AEA to implement Study 7.7, in its entirety, as proposed in the RSP (i.e., NMFS Disputed Element 1). In addition, the panel also recommended that RSP Study 7.7 be modified to include the following additional requirements that were discussed at the technical conference:

1. Expand the geographic scope of the study to include the entire watershed upstream of the proposed dam at RM 184.
2. Include a water temperature component to improve the hydrologic modeling results, estimate temperature of inflow to the reservoir, and evaluate reservoir stratification over a range of potential future climate regimes.
3. Develop criteria to define an acceptable level of uncertainty, such that the 5 percent and 95 percent flows used by NMFS for designing fish passage facilities can be estimated.

Discussion

Of the three study components included in NMFS Disputed Element 1, one would consist of a relatively low-cost (section 5.9(b)(7)) review of literature relevant to glacial retreat and a summary of the understanding of potential future changes in runoff associated with glacier wastage and retreat. This information could be used in the Commission's environmental analysis to describe any general trends in glacier retreat and glacier runoff contributions to Susitna River streamflow (section 5.9(b)(5)).

The other two disputed study components are related to modeling effort's prediction of hydrologic response to future predictions of climate change. We are not aware of any new information or analysis that was presented in NMFS notice of study dispute, at the technical conference, or in the panel's findings to suggest that our analysis and recommendations for these two disputed climate change study components should change. Specifically, we see no new information to suggest that: (1) the study costs would be lower than estimated (section 5.9(b)(7)); (2) the global climate models, downscaled climate projections, and corresponding streamflow predictions up to the year 2100 would be of sufficient accuracy to rely upon for the development of license requirements (section 5.9(b)(5)); (3) the effects of the project on environmental resources of the project area could not be effectively studied and evaluated using conventional hydrologic studies, monitoring techniques, and predictive models, as has been done in other hydroelectric licensing cases (section 5.9(b)(6)); or (4) future potential changes in streamflow conditions from climate change and any corresponding adverse effects on environmental resources of the Susitna River basin could not be addressed through flexibility built into operational rule curves or the Commission's standard reopener articles.

All of the panel's additional recommendations are expansions of the climate change study components. Consistent with our discussion above, we are not aware of any new information or analysis filed after the study plan determination was issued that would suggest these additional recommendations are necessary to conduct the Commission's environmental analysis.

Staff Recommendation

We recommend that AEA review existing literature relevant to glacial retreat and summarize the understanding of potential future changes in runoff associated with glacier wastage and retreat, as described in RSP section 7.7.4.1

RSP Study 9.11, Fish Passage Feasibility at Watana Dam

NMFS Disputed Element 1—*Selection Criteria, Construction and Operation Costs, and Fish Passage Efficiency*

NMFS Disputed Element 2—*Fish Passage as a Project Purpose*

NMFS Disputed Element 4—*Fish Passage as an Alternative for Consideration*

Study Plan Determination

The study plan determination approved AEA's fish passage feasibility study as proposed, concluding that the study proposes a reasonable approach to evaluate various fish passage alternatives at the project, appeared to address most of the items included in NMFS' fish passage feasibility study request, and was consistent with the other fish passage feasibility analyses conducted within the context of hydroelectric licensing cases (section 5.9(b)(6)).

NMFS Study Dispute

Three of the study elements identified by NMFS in its notice of study dispute were affected by the panel's recommendations.

In regard to Disputed Element 1, NMFS disputes that construction and operation costs should be included as a selection criteria in the conceptual and feasibility level design studies. Instead, NMFS requests that fish passage efficiency be included as a selection criterion for determining potentially feasible passage options.

In regard to Disputed Element 2, NMFS states that the study plan determination constrains fish passage studies by requiring that alternatives not conflict with the purpose of the project. NMFS requests that fish passage also be a required as a purpose of the project.

In regard to Disputed Element 4, NMFS states that the study plan determination includes in the conceptual and feasibility design studies two alternatives: (1) no fish passage and (2) the retrofitting of fish passage after construction. NMFS requests that fish passage be included as a required element of the project.

Panel Finding

The panel concluded that discussions during the technical conference indicated that the dispute was primarily based on a misunderstanding of AEA's approved study plan. The panel noted that NMFS and AEA discussed wording changes at the technical conference that would clarify the proposed approach and, in doing so, would resolve Disputed Elements 1, 2, and 4. The panel concluded that Disputed Elements 1, 2, and 4

were resolved by agreed-upon changes to the RSP. The panel recommended that the study plan be modified to incorporate the agreed-upon changes to the RSP that it included as Appendix B of its filing.

Discussion

Incorporating the panel's recommended modifications to the text in section 9.11.1 of the RSP would clarify the intent of the study plan and should resolve NMFS Disputed Elements 1, 2, and 4 at little or no additional cost or effort (section 5.9(b)(7)).

Staff Recommendation

We recommend that RSP section 9.11.1, *General Description of the Proposed Study*, be modified to delete the text that reads: "(2) Can the fish passage alternative be constructed and operated while maintaining the original purpose of the project?"

We recommend that the deleted text be replaced with the following: "(2) Can the fish passage alternative be constructed and operated while allowing an economically feasible Project?"

Document Content(s)

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