

Present and Increased Noise Level Determination and (possible) Mitigation of Northfield Mountain Project

5.9(b)(1)--Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to evaluate the current level of noise produced by the Northfield Mountain Project as heard by neighbors to the project; to determine if the proposed changes to the project (including utilizing more storage in the upper reservoir and increasing the unit and station capacity) increase the noise level; and to mitigate any present and future noise.

Specifically, the objectives of the study include:

- * determine a baseline current noise level for the Northfield Mountain Project. Is the Northfield Mountain Project responsible for noises heard in the area?
- * determine if changes to the project increase the noise level
- * mitigate any existing and future noise levels

5.9(b)(2)--If applicable, explain the relevant resource management goals of the agencies of Indian tribes with jurisdiction over the resource to be studied.

Not applicable.

5.9(b)(3)--If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

It is in the public's interest that this project and its expansion not negatively impact the quality of life for Northfield Mountain Project's neighbors. Noise negatively impacts quality of life.

Background and Existing Information

5.9(b)(4)---Describe existing information concerning the subject of the study proposal, and the need for additional information.

According to Scoping Document 1 for Northfield Pump Storage Project, FERC No. 2485-063 B, no Aesthetic or Socioeconomic issues have been identified for this project. Noise levels are not only aesthetic, but also socioeconomic if they affect real estate values in the area immediately surrounding the project. Thus additional information is needed on this subject.

Project Nexus

5.9(b)(5)---Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resources to be studied, and how the study results would inform the development of license requirements.

Northfield Pump Storage Project runs pumps to move water to a holding reservoir, and turbines to harvest energy from the water. Both these operations involve large equipment that makes a lot of noise. This noise may be broadband, low frequency, or infrasonic pressure or vibration. Increasing the pump and/or turbine operation in frequency, size, or number could impact the amount of noise this equipment makes, so that it is more audible to neighbors. Noise might need to be mitigated e.g. via insulation, or prescribed combinations of equipment running, etc. to reduce noise impact on neighbors.

Proposed Methodology

5.9(b)(6)--Explain how any proposed study methodology (including any preferred data collection and analysis techniques or objectively quantified information, and a schedule including appropriate field season(s) and the duration is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

Massachusetts Department of Environmental Protection recognizes noise pollution: "Noise is a public health concern that falls within the scope of Massachusetts Department of Environmental Protection (MassDEP) authority as a form of regulated air pollution (M.G.L. Chapter 111, Sections 142A-M provide statutory authority for MassDEPs Air Pollution Control Regulations, 310 CMR 7.00"

(<http://www.mass.gov/dep/air/laws/noisepol.htm>, accessed 1/31/13)

We propose to use MassDEP testing standards, should the noise need testing. Tests for infrasonic pressure or vibration should be included as well, where standards exist.

To simplify the process and possibly eliminate unnecessary tests, we propose a 2-part process: Part A to determine if the unexplained noises heard in the area are caused by the Mountain, and Part B using DEP protocol to determine how loud the noises are and if mitigation is called for. Mitigation would follow as needed. Each of these parts would need to be conducted before and after any change in the project (increased capacity etc).

Proposed methods include:

Part A: (1 year)

* Having neighbors to the project record unexplained noises including what type of noise and when.

* Comparing these lists with operating records of the Northfield Mountain Project to see if correlation exists.

Part B: (1 year)

* If correlation exists, further study would be needed using MassDEP protocols. This part could be done simultaneously with Part A to increase turn-around time, or left until afterwards on the chance it would not be needed. It could also be the first step in the process if Part A was not considered necessary.

Level of Effort and Cost

5.9(b)(7)--Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs

The estimated cost of determining a baseline noise level and comparing any old/new noises with the operating records is relatively low. Possibly there is already a community liaison from Northfield Mountain who could interface with neighbors, leaving only the cost of printing out existing operations records over a 1 year period to take into account tree leafing and other seasonal changes. Estimate: less than \$500.

If it is determined that the Northfield Mountain Project is making noise (either now or after installation of further equipment), then the cost of measuring the noise level would include hiring qualified engineers to do so, possibly tens of thousands of dollars. Mitigating the noise would be even more expensive, include hiring qualified engineers and installing noise mitigation equipment, likely several hundred thousand dollars.

Since there are no proposed alternative studies, it is unknown if any would meet the stated information needs.

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