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Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Licensing  
via eFiling

Cc:

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Re relicensing of Northfield Mountain Pumped Storage Project (FERC No. P-2485-063)

**Comments re Aquatic Resources:**

"Effects of project operations (including fluctuations in water levels, and downstream releases) on aquatic habitat and resources in the projects' vicinity (e.g., resident and **migratory fish populations**; fish spawning, rearing, feeding, and overwintering habitats; mussels and macroinvertebrate populations and habitat)" [cumulative and project effects, emphasis added];

"Effects of project facilities and operations, (including reservoir fluctuations, and generation releases) on **fish migration** through and within project fishways, reservoirs, and the downstream riverine corridor" [**cumulative and project effects advocated**, emphasis added];

"**Effects of entrainment** on fish populations at each project" [cumulative and project effects, emphasis added].

*(Scoping Document 1, December 2012, page 27)*

*Note: References to "projects" quoted above refer to the Turners Falls Project and to the Northfield Mountain Pumped Storage Project. These comments refer only to the Northfield Mountain Pumped Storage Project.*

*Note: Railway tank-car equivalencies below are based upon 7.48 gallons per cubic foot of water and the approximately 20-thousand-gallon capacity of a typical railway tank car ([www.gatx.com](http://www.gatx.com), lessor of 57 thousand railway tank cars).*

*Note: American shad counts are as reported by the U.S. Fish & Wildlife Service.*

The extraordinary environmental impacts upon migratory fish of daily operation of Northfield Mountain Pumped storage have been overlooked since it became a merchant power plant.

The commenter advocates a thorough scientific study of these project and cumulative environmental impacts and their mitigation.

The very greatest environmental impacts upon the Connecticut River are due to Northfield Mountain Pumped Storage, which could power the entire state of Vermont at peak summertime electric load.

Pumping water from Turners Falls reservoir 800 feet up to the summit reservoir at 15 thousand cubic feet per second is equivalent to 340 typical railway tank cars climbing Northfield Mountain every minute during many nighttime hours. Further illustrating the volume of water, such a train would be rolling at 150 miles an hour (assuming a 40-foot tank-car length per [www.arleasing.com](http://www.arleasing.com)).

Cascading water from the summit reservoir back into Turners Falls reservoir at 20 thousand cubic feet per second is equivalent to 450 typical railway tank cars rolling down the mountain every minute during many daytime hours. Further illustrating the volume of water, such a train would be rolling at 200 miles an hour (assuming a 40-foot tank-car length per [www.arleasing.com](http://www.arleasing.com)).

Such extraordinary volumes of water sucked from and then flooded back into Turners Falls reservoir overpower during many nighttime and daytime hours the natural current of the Connecticut River at Northfield Mountain Pumped Storage, necessarily, predominantly and cumulatively affecting migratory fish swimming upstream and downstream, because most nonmigratory fish remain upstream or downstream.

The wide variability of American shad counts at Vernon as a percentage of the counts at Turners Falls merits scientific investigation to quantify the inevitable environmental impacts upon migratory fish as they pass by Northfield Mountain Pumped Storage:

American shad counts	Holyoke	Turners Falls	Vernon	Vernon as % of Turners Falls
2000	225,042	2,590	1,536	59.3
2001	273,220	1,540	1,666	108.2
2002	374,548	2,870	336	11.7
2003	286,814	-	267	-
2004	191,555	2,092	653	31.2
2005	116,511	1,500	167	11.1
2006	154,745	1,500	133	8.9
2007	158,807	2,248	65	2.9
2008	153,110	3,982	271	6.8
2009	160,649	3,813	16	0.4
2010	164,439	16,768	290	1.7
2011	244,177	16,798	-	-
2012	490,431	*26,727	*10,715	40.1

\* Turners Falls total as of 9/5/2012; Vernon total as of 9/28/2012.

Sources:

[U.S. Fish & Wildlife Service, Connecticut River Coordinator's Office, Historic Fish Counts](#)

[U.S. Fish & Wildlife Service, Connecticut River Coordinator's Office, Daily Fish Counts](#)

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