

Letter and Article

February 11, 2010

Ms. Zinnia Rodriguez  
Principal Administrative Assistant  
Bureau of Legal Affairs  
NYCDEP  
59-17 Junction Boulevard, 19th Floor  
Flushing, New York 11373

Dear Ms. Rodriguez,

Dam Concerned Citizens, Inc. attended and participated in the The City of New York West of Hudson Hydroelectric Project Application, FERC Project No. 13287 Pre-application hearings held in Kingston, NY and Schoharie, NY on December 16, 2009.

DCC hereby submits, in writing, further questions, concerns and comments on the Pre-Application Document #13287. Attached to the letter is an appendix which includes documented references.

If you have questions contact information is included on the letter head as well as my personal phone number.

Thank you.

Sincerely,

Howard R. Bartholomew, Director  
Board of Directors  
DCC, Inc.  
(518) 827-4643

DCC Responds to NYCDEP West of Hudson Hydroelectric Project  
Pre-Application Document

This letter is a response from Dam Concerned Citizens, Inc. a 501-c3 corporation, referred to as DCC, to the Pre-Application Document (PAD) for project No. 13287-000, City of New York West of Hudson Hydroelectric Project as it relates specifically to the Schoharie Development. In this written response, DCC will refer to the topic and page number as presented in the PAD.

**Dam Reconstruction (Page 11):** Elements contained in this paragraph would lead the casual reader to assume that the New York City Department of Environmental Protection (NYCDEP) first became aware of structural deficiencies at the Gilboa Dam in October, 2005. This assumption is incorrect. An abstract from a report to the United States Society on Dams (USSD) entitled "Stability Analysis and Interim Safety Improvement, Gilboa Dam Spillway, Schoharie Reservoir, NY" states on pages 319-329:

*"Observations in July, 2000 indicated further loss of stone since 1998 inspections. Near the west end of the discharge channel an 18 cubic yard section of spillway concrete dislodged along a horizontal construction lift line and was deposited in the channel. Further erosion of the concrete apron in two areas where the stone masonry steps were largely missing resulted in voids up to about 8 feet deep to top of concrete and stone debris. These voids extended up to 14 feet below the channel paving. A tile underdrain constructed during the 1950s concrete paving was severed. Expedient interim repairs implemented included construction of access into the spillway channel; removal of loose stone and debris from the spillway face; excavation of 4,400 cy of rubble from the channel; preparation of bedrock subgrade with compressed air and water jets; installation of new underdrain pipes; and placement of 3,400 cy of mass cyclopean concrete and 1,600 cy of reinforced concrete paving. About 50 percent of the mass cyclopean concrete is recycled stone plums."*

This report was prepared in 2001 and makes it apparent that serious structural problems existed at the Gilboa Dam regarding its stability since at least 1998. January 19, 1996 was the date of the flood of record at the Gilboa Dam. The placement of post tensioned anchors mentioned on page 11 of the PAD was proposed on Page 319 of the USSD Stability Analysis and Interim Improvement Abstract. A copy of this abstract is enclosed herein.

**Outlet Works (Page 12):** There is no specific statement of the maximum discharge potential of the proposed 120" diameter Low Level Outlet. It is stated on page 13 of the PAD that each proposed turbines will have a rated flow of 350 cubic feet per second (cfs), making the combined rated flow 1,050 cfs. This appears to be an unrealistic figure for the carrying capacity of a 10' diameter conduit with an annual average hydraulic head of 158.3'. (Table 3.8.4-pg. 34) DCC requests that the maximum carrying capacity of the designed Low Level Outlet be made public. As it would seem that the carrying capacity of the Outlet Works may very well exceed 1,050 cfs, why are larger turbines with increased potential for electrical generation not being proposed at the Schoharie Development?

**Proposed Operation, Water Level, Withdrawal, Conservation/Discharge Release and Total Discharge (Page 31):** The last paragraph before the topic "Oasis" states; "The proposed hydropower facility at the Gilboa Dam is not designed to modify seasonal water

level fluctuation or water supply diversion.” DCC responds simply, “**why not?**”.

Under the terms of the SPDES permit, by which NYCDEP operates the Shandaken Tunnel, daily tunnel discharge is limited to a combined flow, with that of the Esopus Creek, as measured at Allaben, NY of no more than 300 million gallons per day (mgd) during the months of June-October. With this reduction in Shandaken Tunnel discharge as mandated by the SPDES permit, “excess” water is available at the Schoharie Reservoir during these months, thus allowing for longer durations of hydroelectric generation than that proposed by NYCDEP for the Schoharie Development. Since the onset of NYCDEP's compliance with the SPDES permit, water has been available for hydroelectric generation at the Gilboa Dam/Schoharie Reservoir that exceeds snow melt induced run off. It will be noticed on pg 34 of the PAD that the average annual generation (kwh) at the Cannonsville Development is stated to be 25,456,000 kwh. The unit capacity in terms of cfs at Cannonsville is one turbine at 80 cfs and 3@350 cfs as compared to 3 turbines at 350 cfs at the Schoharie Development. DCC contends that if NYCDEP were not restricted to the dictum of “*The water available for generation at Schoharie will be comprised of water that would normally be 'spilled' downstream*”, page 31, its generating capacity could be increased at the Schoharie Development. It seems wasteful and imprudent to wait for a reservoir to “fill and spill” when it is accumulating water restricted because of the aforementioned SPDES restrictions.

DCC questions why no mention has been made of the potential for utilizing the discharge of the 18 mile long Shandaken Tunnel in the PAD. This tunnel has discharge much of the year and a low head turbine could provide additional generating capacity for the Schoharie Development.

As NYCDEP has taken a position in opposition to exploration for and exploitation of potential natural gas resources within the catchment area of its reservoirs (document included), it would seem prudent to pursue the development of other forms of energy production. One can understand the basis for concern regarding natural gas exploitation, based upon existing technology, and the fact is that CH<sub>4</sub> is trapped in the rock and not going away, so it will be there for possible extraction in years to come, with hopefully less danger to the environment. There exists a feeling of cynicism among residents living within or near the watershed<sub>s</sub> of NYCDEP reservoirs regarding its motives concerning various forms of energy development in the catchment area of the West of Hudson Reservoirs. The sentiment of the residents is that NYCDEP regards the watershed as its own personal fiefdom. While no sensible person would want to, in any way, impede NYCDEP in its mission to supply clean and abundant water to New York City, it is the position of DCC, that every effort be made to use of the reservoirs and dams it owns and operates in upstate NY to generate hydroelectric power to the fullest extent possible, without hindering its primary goal of meeting its water supply demands. This position is in agreement with the USSD theme “*Collaborative Management of Integrated Watersheds*” which “*reflects the need for enhanced collaboration and integration between disciplines, facilities and institutions.*” and one statement of purpose contained in the overview of the USSD Annual Meeting and Conference held April 12-16, 2010: “*The practical application of enhanced technology calls for improved interdisciplinary collaboration.*” (document included)

Schoharie Reservoir 3.7.1 (Page 32): “*The Schoharie Reservoir is not subject to conservation or directed releases.*” The glibness of this statement is offensive when one considers the fact that there existed a hydroelectric power generating plant between Middleburgh and Schoharie, NY on the Schoharie Creek downstream of the Gilboa Dam at

Frisbieville, NY. This plant, the Middleburgh and Schoharie Electric Light, Heat and Power Company provided electricity to the villages of Middleburgh and Schoharie. With the completion of the Gilboa Dam, stream flow in the Schoharie Creek was so drastically reduced north of the dam that stream flow at the USGS gauge station at Prattsville, NY (usgs #01350000) frequently exceeds that measured at Burtonsville, NY (usgs #013515000) during times of non-spillage. Thus, the continued operation of a hydroelectric power/steam plant on the Schoharie Creek down stream of the Gilboa Dam was untenable.

*“The Middleburgh and Schoharie Electrical Light, Heat and Power Company received an award of \$17,500.00 on its \$200,000.00 claim, the award covering the diversion of water, by the Schoharie reservoir, from the dam and station of the claimant. This company's combined steam and water power plant was located along the Schoharie creek about midway between its customers in the Villages of Middleburgh and Schoharie. After the filing of the claim and before the award was made the water-power installation was dismantled and the steam-plant, power-lines and business sold.”* is quoted from the 1928 Board of Water Supply, City of New York Annual Report, page 13. Bureau of Claims very succinctly describes the fate of the Middleburgh and Schoharie Electric, Heat and Power Company. (document included)

Since the completed Gilboa Dam deprived residents living downstream of it on the Schoharie Creek of the benefits of its own locally produced hydroelectricity, it would seem appropriate that, when the opportunity arises to provide a means of restoring locally produced hydroelectric power to Schoharie County and the surrounding area, it would be taken seriously. The restoration of hydroelectric generation on the Schoharie Creek, albeit nearly a century after its demise, would be a small but nevertheless significant step in the direction of renewable energy production, and could serve as an example to other dams and reservoirs to capitalize on their latent hydroelectric potential.