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Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue, Pittsfield, MA 01201

December 15, 2004

Mr. James M. DiLorenzo
U.S. Environmental Protection Agency
EPA New England
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: GE-Pittsfield/Housatonic River Site
Silver Lake Area (GECD600)
Revisions to Pre-Design Investigation Report for Silver Lake Sediments

Dear Mr. DiLorenzo:

This letter has been prepared in response to the Environmental Protection Agency's (EPA) November 30, 2004 conditional approval letter related to the September 2004 *Revised Pre-Design Investigation Report for Silver Lake Sediments* (PDI Report). Provided below is a discussion of General Electric's (GE) responses to EPA's November 30, 2004 comments. For convenience, EPA comments are provided in italics, followed by GE's response in standard format. Where EPA comments require revisions to the PDI Report, those revisions are described in the GE responses and are implemented in the attached documents. Specifically, we are providing replacements for the following portions of the PDI Report:

- Page 2-34 of the Report text; and
- Tables 15 and 24.

1. ***Response 10:*** *GE correctly states that the current conceptual design calls for armoring stone to extend to a water depth of 2.5 to 5.3 feet in Silver Lake based on design parameters such as wind speed and direction. In implementing this design requirement, GE shall extend the armoring layer to the maximum 5.3 foot water depth in public access areas, to be mutually determined by GE and the agencies.*

Response 1: GE will collaborate with EPA in the identification of those areas of Silver Lake that are likely to be available for public access. Upon such identification, GE agrees to increase the design requirement for the armor stone layer, within the agreed upon public access areas, to a water depth of 5.3 feet.

2. ***Tables 14 and 15:*** *The value of the "Adjusted Evaporation Rate" for 8/21/03 presented in revised Table 14 (0.19 cfs) should be equal to the value of "E" (evaporation out of the lake) in revised Table 15 for 8/21/03, which is currently shown as 0.20 cfs. GE shall revise either Table 14 or 15 accordingly.*

Response 2: Table 15 has been revised to reflect the correct data.

3. ***Table 24:*** *GE shall revise Table 24 (Geotechnical Testing Results) to present the correct USCS/USDA classifications for strata 1 and 2 soils (i.e., these are organic [OH, OL] silty soils instead of inorganic ML and MH soils.)*

Response 3: Table 24 has been revised to incorporate the soil classification changes.

4. ***Page 2-34:*** *The equations for the Vane Shear vs. Depth data for the soil layers 1 and 2 presented on the plots express the independent variable (i.e., Depth, the "y" coordinate) as a function of the dependant variable (i.e., Undrained Cohesive Shear Strength of the sediments, the "x" coordinate). It is more appropriate if these variables are reversed, that is, the undrained cohesive shear strength of the lake bottom sediments should be expressed as a function of depth in the linear regression equations. GE shall revise the plot accordingly.*

Response 4: As requested, the in-text figure on Page 2-34 has been revised such that the undrained cohesive shear strength of Silver Lake sediments (the "y" coordinate) is expressed as a function of depth (the "x" coordinate).

The revised Page 2-34, revised tables, and a new cover page and report covers are attached to this letter. These submissions are intended to supersede and replace portions of the Revised PDI Report previously submitted in September of 2004.

GE trusts that the responses provided above and the enclosed revisions adequately address EPAs comments and concerns regarding the PDI Report. Please feel free to contact me with any additional questions.

Sincerely,

Andrew T Silfer/mm

Andrew T. Silfer, P.E.
GE Project Coordinator

ATS/dmn
Attachments

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
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Dean Tagliaferro, USEPA
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Tim Conway, USEPA
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K.C. Mitkevicius, USACE
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Nancy Harper, MA AG (without attachments)
Linda Palmieri, Roy F. Weston
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Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
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Public Information Repositories
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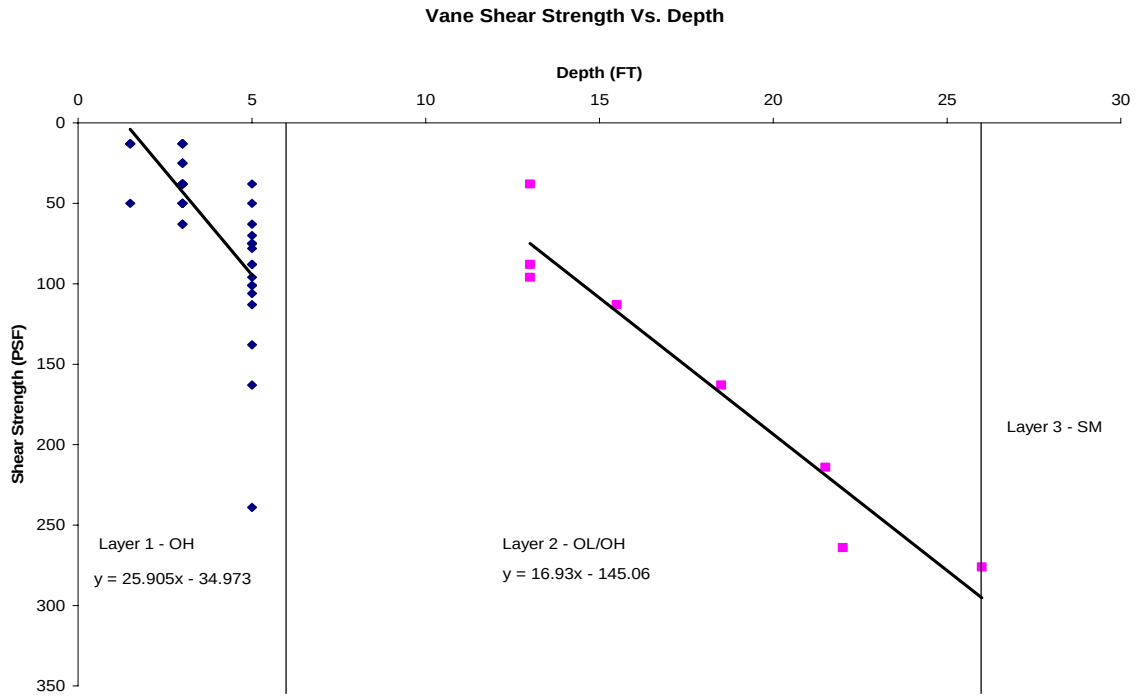

2.3.3.2.3 Assessment of Potential Data Needs

The geotechnical testing activities have provided a significant amount of information that will be used for design of the capping system and the collection of additional pre-design geotechnical data is not believed necessary. The sub-aqueous strata exhibited characteristics of low shear-strength (40 to 50 psf) and high compression index (1.5 to 5). In order to further evaluate available cap placement techniques and potential stresses on the lake bottom, a pilot study is proposed as discussed in Section 3.

2.4 Pre-Design Bank Habitat Investigations

The PDI Work Plan additionally proposed conducting a riparian habitat assessment of the banks to document the current vegetative community and potential wildlife usage adjacent to Silver Lake. The objective of the bank habitat characterization was to determine the existing functions and wildlife value of the shoreline areas, and to document existing habitats for restoration and/or enhancement purposes. The performance standards and other requirements for natural resource restoration/enhancement are set forth in detail in Attachment I to the SOW. For this assessment, the riparian habitat of Silver Lake was considered as the vegetative community covering the lake's bank slope from the edge of the water to the crest of the slope.

The bank habitat investigation activities are further discussed below.

TABLE 15
WATER BUDGET CALCULATION SUMMARY

PRE-DESIGN INVESTIGATION REPORT FOR THE SILVER LAKE AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in cubic feet per second, cfs)

Date	ΔS	Q_A	Q_B	Q_C	E	Q_{GW}
08/19/03	-1.15	1.53	0.11	1.20	0.20	-1.40
08/20/03	-0.53	1.12	0.07	1.39	0.19	-0.13
08/21/03	-0.37	0.47	0.03	0.82	0.19	0.15
Average	-0.68	1.04	0.07	1.14	0.20	-0.46

Notes:

Q_{GW} = net ground water flow to the lake

Q_C = flow out of the lake in Outfall C

E = evaporation out of the lake

Q_A = flow into the lake from Outfall A

Q_B = flow into the lake from Outfall B

ΔS = the change in storage

TABLE 24
GEOTECHNICAL TESTING RESULTS

PRE-DESIGN INVESTIGATION FOR THE SILVER LAKE AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Location	Sampling Interval	Moisture Content (ASTM D 2216)	Dry Unit Weight (PCF)	Organic Content (ASTM D 2974)	Atterberg Limits (ASTM D 4318)	Grain-Size Analysis (ASTM 422)				USCS/USDA Classification	Standard Penetration Test (ASTM D 1586) N Value	UU Triaxial (ASTM D 2850) Shear Strength (PSF)	Vane Shear		Torvane Undrained Shear (PSF)	Pocket Penentrometer Undrained Shear (PSF)	Permeability (ASTM D 5084) (CM/SEC)	Consolidation (ASTM D 2435) C_c	Specific Gravity (ASTM D 854)
						Gravel	Sand	Silt	Clay				Peak (PSF)	Remolded (PSF)					
SLGT03-01	0.0-1.0'		35.3		LL=61, PL=54, PI=7, OH										12	12			
	1.0-2.0'			12%			26%	64%	10%	OH, Silt Loam			0	0					
	2.0-4.0'		18.4										50	25	68	63			
	4.0-6.0'		17.4	14%	LL=103, PL=90, PI=13, OH								138	88	92	106			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-02	0.0-1.0'		43.5												68	2			2.45
	1.0-2.0'			13%	Non-Plastic	1%	46%	49%	5%	OL, Sandy Loam		76	0	0					2.45
	2.0-4.0'		44.7									23	38	25	64	38	1.3E-06		
	4.0-6.0'		44.5	16%	Non-Plastic	1%	41%	52%	7%	OL, Sandy Loam		30	101	50	48	32		0.403	
	6.0-8.0'	106									WOR								
	8.0-10.0'	72									WOR								
	10.0-12.0'	267		13%	Non-Plastic		39%	51%	10%	OL, Loam	WOR								
	12.0-14.0'	254									WOR		88	25					
	17.0-20.0'	246		13%	Non-Plastic		29%	71%		OL	WOR		163	50					
	21.0-23.0'	216									WOH		264						
	26.0-28.0'	84		5%	Non-Plastic	11%	28%	53%	8%	OL, Silt Loam	19								2.75
SLGT03-03	0.0-1.0'		55.5		Non-Plastic	2%	65%	34%		SM					36	82			2.45
	1.0-2.0'	178		7%									13	0				0.055	
	2.0-4.0'	69	43.6	13%	LL=47, PL=46, PI=1, OL	1%	41%	49%	9%	OL, Loam			38	25	40	50		0.98	2.31
	4.0-6.0'	204	23.7	9%	Non-Plastic		35%	65%		OL			163	113	128	138		1.8	2.26
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-04	0.0-1.0'		24.2																
	1.0-2.0'			19%	LL=69, PL=69, PI=0, OH								0	0					
	2.0-4.0'												38	8	28	0			
	4.0-6.0'												96	20	44	38			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR		96	20	44	38			
SLGT03-05	0.0-1.0'		29.9												32	0			
	1.0-2.0'												0	0					
	2.0-4.0'		34.5										63	25	96	76			
	4.0-6.0'												101	75	76	76			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'	999									WOR								
SLGT03-06	0.0-1.0'		27.4				4%	76%	20%	OH, Silt Loam					10	0			
	1.0-2.0'			13%	LL=56, PL=48, PI=8, OH								13	13					
	2.0-4.0'		6.9										25	13	60	32			
	4.0-6.0'	1503	7.4	73%	LL=1413, PL=391, PI=1022, OH								88	63	60	32			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'	999		42%	Assume OL		41%	59%		OL	WOR								
SLGT03-07	0.0-1.0'		44.5												40	25			
	1.0-2.0'												0	0					
	2.0-4.0'		16.4										50	13	56	63			
	4.0-6.0'																		
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								

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GEOTECHNICAL TESTING RESULTS

PRE-DESIGN INVESTIGATION FOR THE SILVER LAKE AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Location	Sampling Interval	Moisture Content (ASTM D 2216)	Dry Unit Weight (PCF)	Organic Content (ASTM D 2974)	Atterberg Limits (ASTM D 4318)	Grain-Size Analysis (ASTM 422)				USCS/USDA Classification	Standard Penetration Test (ASTM D 1586) N Value	UU Triaxial (ASTM D 2850) Shear Strength (PSF)	Vane Shear		Torvane Undrained Shear (PSF)	Pocket Penentrometer Undrained Shear (PSF)	Permeability (ASTM D 5084) (CM/SEC)	Consolidation (ASTM D 2435) C_c	Specific Gravity (ASTM D 854)
						Gravel	Sand	Silt	Clay				Peak (PSF)	Remolded (PSF)					
SLGT03-08	0.0-2.0'		105.3	10%	Non-Plastic	19%	70%	10%	1%	SW-SM, Sand					136	44			
	2.0-4.0'		49.3	41%	Non-Plastic										88	125			
	4.0-6.0'										3								
	0.5-2.5'				Non-Plastic		85%	15%		SM									
	2.5-4.5'			51%	Non-Plastic		91%	9%		SP-SM									
SLGT03-09	0.0-1.0'																		
	1.0-2.0'																		
	0.5-2.5'	24		2%	Non-Plastic	11%	73%	15%		SM	9								
	2.5-4.5'	18		2%	Non-Plastic	7%	84%	9%		SP-SM	19								
SLGT03-10	0.0-1.0'	87	104.9		Assume OL	14%	85%	0%		SP									2.63
	1.0-2.0'			1%															
	2.0-4.0'		104.5	2%	Assume OL	11%	88%	1%		SP									
	4.0-6.0'										2								
SLGT03-11	0.0-1.0'		44.1										0	0					
	1.0-2.0'			13%	LL=41, PL=41, PI=0, OL								50	0					
	2.0-4.0'		16.1	13%									50	13					
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-12	0.0-1.0'		44.1																
	1.0-2.0'			13%	LL=41, PL=41, PI=0, OL														
	2.0-4.0'	114	35.8										38	25					
	4.0-6.0'	77	49.4												60	92			
	10.0-12.0'	755									WOR								
	12.0-14.0'												38	25					
	14.0-17.5'	747		29%	Assume OL		19%	81%		Assume OL	WOR		113	63					
	20.0-22.5'	384									WOR		214	88					
	25.0-27.5'	32									WOR		276	201					
	30.0-32.0'	31		0%	Non-Plastic		62%	33%	5%	SM, Sandy loam	7								2.74
SLGT03-13	0.0-1.0'	101	36.1		LL=56, PL=52, PI=4, OH		15%	74%	11%	OH, Silt Loam		0							
	1.0-2.0'			12%									0	0				1.056	
	2.0-4.0'	77	43.5	19%	LL=53, PL=52, PI=1, OH								63	25					
	4.0-6.0'	1068	4.0										75	50	28	56			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								

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PRE-DESIGN INVESTIGATION FOR THE SILVER LAKE AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Location	Sampling Interval	Moisture Content (ASTM D 2216)	Dry Unit Weight (PCF)	Organic Content (ASTM D 2974)	Atterberg Limits (ASTM D 4318)	Grain-Size Analysis (ASTM 422)				USCS/USDA Classification	Standard Penetration Test (ASTM D 1586) N Value	UU Triaxial (ASTM D 2850) Shear Strength (PSF)	Vane Shear		Torvane Undrained Shear (PSF)	Pocket Penentrometer Undrained Shear (PSF)	Permeability (ASTM D 5084) (CM/SEC)	Consolidation (ASTM D 2435) C_c	Specific Gravity (ASTM D 854)
						Gravel	Sand	Silt	Clay				Peak (PSF)	Remolded (PSF)					
SLGT03-14	0.0-1.0'																		
	1.0-2.0'												0	0					
	2.0-4.0'	180	28.7	12%	LL=83, PL=65, PI=18, OH		1%	69%	30%	OH, Silty Clay Loam		0	13	13	48	0	1.0E-06	1.074	
	4.0-6.0'		4.3	50%	LL=925, PL-262, PI= 663, OH	3%	75%	22%		SC		78	50	38	52	0		15.8	
	6.0-8.0'										WOR								
	8.0-10.0'	331		95%			38%	62%		Assume OL	WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-15	0.0-1.0'		22.9												24	0			
	1.0-2.0'			28%	LL=76, PL=72, PI=4, OH								0	0					
	2.0-4.0'		19.3										50	25	76	38			
	4.0-6.0'												113		128	250			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										4								
	12.0-14.0'										7								
SLGT03-16	0.0-1.0'		28.6			2%	48%	41%	9%	SM, Loam					0	0			2.23
	1.0-2.0'			20%	LL=60, PL=54. PI=6, OH								0	0					
	2.0-4.0'		19.5										38	13	48	12			
	4.0-6.0'		23.6	9%	LL=101, PL=91, PI=10, OH		26%	68%	6%	OH, Silt Loam			88	50	100	62			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOH								
	12.0-14.0'										WOH								
SLGT03-17	0.0-1.0'		24.6												0	0			
	1.0-2.0'			15%	LL=73, PL=65, PI=8, OH	1%	37%	52%	10%	OH, Loam			0	0					
	2.0-4.0'		13.6										0	0	32	0			
	4.0-6.0'		34.2	12%	LL=105, PL=89, PI=16, OH					OH			38	25	58	32			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOH								
SLGT03-18	0.0-1.0'		21.4												18	0			
	1.0-2.0'												0	0					
	2.0-4.0'		19.5										50	25	24	13			
	4.0-6.0'												75	45	40	32			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-19	0.0-1.0'		30.2		LL-67, PL=61, PI=6, OH					OH					0	0			
	1.0-2.0'			15%									0	0					
	2.0-4.0'		23.1										13	13	8	0			
	4.0-6.0'												50	38	48	13			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-20	0.0-1.0'		21.9										0	0					
	1.0-2.0'			20%	LL=69, PL=59, PI=10, OH		20%	60%	20%	OH, Silt Loam			13	0					
	2.0-4.0'		24.1	18%	LL=87, PL=65, PI=22, OH		5%	67%	28%	OH, Silty Clay Loam			13	0					
	4.0-6.0'		10.6																
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								

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						Gravel	Sand	Silt	Clay				Peak (PSF)	Remolded (PSF)					
SLGT03-21	0.0-1.0'		19.2																
	1.0-2.0'			20%	LL=67, PL=61, PI=6, OH								0	0					
	2.0-4.0'												25	13					
	4.0-6.0'		4.2										70	25					
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-22	0.0-1.0'		24.4												28	0			
	1.0-2.0'			14%	LL=78, PL=65, PI=13, OH								0	0					
	2.0-4.0'		14.5										25	13	28	0			
	4.0-6.0'												63	25	72	50			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-23	0.0-1.0'		11.4												3				
	1.0-2.0'												0	0					2.23
	2.0-4.0'		21.4	7%	LL=106, PL=54, PI=52, OH		3%	93%	4%	OH, Silt			13	13	8	6			2.43
	4.0-6.0'		20.2										75	25	10	14			2.41
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-24	0.0-1.0'		23.3	21%											20	0			
	1.0-2.0'				Non-Plastic		2%	74%	24%	OL, Silt Loam			0	0				1.06	
	2.0-4.0'		71.3										38	13	54	38		4.87	
	4.0-6.0'		6.9	39%	LL=890, PL=113, PI=777, OH		37%	63%		OH			106	43	52	19	6.6E-09	6.35	
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOR								
SLGT03-25	0.0-1.0'		59.5												100	160			
	1.0-2.0'			4%	Non-Plastic	1%	33%	64%	3%	OL, Silt Loam			0	0					
	2.0-4.0'		8.9										38	25	128	188			
	4.0-6.0'		17.2	15%	LL=135, PL=123, PI=12, OH								239	63	68	60			
	6.0-8.0'										WOR								
	8.0-10.0'										WOR								
	10.0-12.0'										WOR								
	12.0-14.0'										WOH								

Notes:

LL - Liquid limit
PL - plastic limit
PI - plasticity index
ASTM - American Society for Testing and Materials
PCF - pounds per cubic foot
PSF - pounds per square foot
USCS - Unified Soil Classification System
USDA - United States Department of Agriculture
WOH - Weight of Hammer
WOR - Weight of Rod

OH- organic clay of high plasticity
OL- organic silt of low plasticity
MH - silt of high plasticity
ML - silt of low plasticity
CH - clay of high plasticity
CL - clay of low plasticity
cm/sec - centimeters per second
C_c - compression index