UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
New England Office – Region I
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

March 2, 2009

Mr. Andrew T. Silfer, P.E.
General Electric Company
159 Plastics Avenue
Pittsfield, Massachusetts 01201 Sent via US Mail and Electronic Mail

RE: Conditional Approval of GE's Conceptual Removal Design/Removal Action Work Plan for Silver Lake Sediments

Dear Mr. Silfer:

EPA has completed its review of GE's report entitled "*Conceptual Removal Design/Removal Action Work Plan for Silver Lake Sediments"* (hereinafter Work Plan) submitted July 3, 2008.

With respect to any other work plans or submittals related to Silver Lake or Silver Lake Bank Soils, nothing in this conditional approval shall be interpreted to supersede the approval, the conditions in a conditional approval, or the disapproval of such GE submittals, unless expressly stated as such by EPA. EPA reserves all its review and compliance rights under the Consent Decree regarding all GE submittals including but not limited to, the right to perform and/or require additional sampling or response actions, if necessary, to meet the requirements of the Consent Decree. If there is any conflict between the Performance Standards as stated in the Work Plan and the Performance Standards as stated in either the Consent Decree governing Silver Lake remediation, or the Statement of Work for Removal Actions Outside the River ("SOW", Appendix E to the Consent Decree) (excepting any changes necessitated by an EPA condition), the Consent Decree or SOW shall control.

Pursuant to Paragraph 73 of the CD, EPA, after consultation with the Massachusetts Department of Environmental Protection (MassDEP), conditionally approves the Work Plan subject to the following conditions, and after consulting with the Trustees regarding the implementation of the requirements specified in Technical Attachment I, subject to the conditions in the attached letter:

1. GE shall remove all debris located within the footprint of the sediment cap that is greater than 1 foot in height above the sediment surface and all debris in the area of placement of the shoreline protection system to insure cap integrity, including the pilings identified on Figure 3-3 and in Table 3-2. GE should also consider removing the concrete base structures located in the southeast corner of the lake. GE shall propose control measures for release of sediment to the water column to be implemented during debris removal. GE shall collect samples from the debris for characterization for appropriate off-site disposal. The phrase "to the extent practicable" shall be deleted from the last sentence in Section 3.4.1.2.

2. EPA has significant concerns with the use of topsoil as the amendment to meet the organic carbon performance standard as was conducted in the Pilot Study for two reasons, the substantial increase in total suspended solids (TSS) in the lake and potential discharge of solids to the East Branch, and the inability to consistently achieve the Performance Standard of a minimum of 0.5% total organic carbon (TOC) in samples collected in the Pilot Study both vertically through the cap and horizontally at different sampling locations. GE shall provide an evaluation of the use of an organo-clay or other appropriate material to replace the topsoil in the isolation layer to achieve the Performance Standard of a minimum of 0.5 % TOC. GE shall also consider and, if appropriate, propose other ways to reduce turbidity, including but not limited to lake drawdown, and insure that the Performance Standard of a minimum of 0.5% TOC is achieved. In addition, if increases in turbidity are observed when the proposed change to 2-inch lifts occurs, GE shall consult with EPA, and EPA shall determine the need to return to 1-inch lifts.

3. Note that GE resubmitted Figure 1-3 in their Bank Soil Conceptual RD/RA Work Plan addressing those outfalls that had not been depicted on Figure 1-2 in this Work Plan. GE shall update Figure 1-2 and Table 3-1 in the revisions to this Work Plan. In addition, GE shall address the issues associated with outfall sources and potential abandonment as directed in EPA's Conditional Approval Letter for the Bank Soil Work Plan.

4. In addition to the applicable or relevant and appropriate requirements ("ARARs") identified in Section 3.2 of the Work Plan, an additional ARAR is the EPA Mitigation Rule regarding aquatic resources (40 CFR 230 and 33 CFR 332). Additional guidance documents to be considered by GE in implementation of remediation, restoration and associated activities are the January 12, 2007, *New England District Mitigation Guidance*, by the U.S. Army Corps of Engineers,

New England District, and the Massachusetts Wildlife Habitat Protection Guidelines for Inland Wetlands (mass.gov/dep/water/laws/policies.htm#wetllguide).

5. It is unclear what criteria were used to designate the footprint of the sediment removal area. GE shall revisit the designation of the removal footprint, provide the criteria used to define the footprint, and propose methods to ensure that the removal area is accurately delineated in the field. In addition, GE shall describe the method to be used to verify that the 400 cy removal volume goal has been achieved such as using a standard volume bucket and recording the number of buckets of sediment removed from the lake.

6. Verification of the removal of the 400 yd^3 volume will be done by observing the number of excavator bucket volumes removed from this area.

7. GE shall consider the use of an environmental clamshell or other style of bucket designed to minimize resuspension during sediment, island and debris removal, and shall document for EPA such consideration in GE's Final RD/RA Work Plan.

8. As discussed in Section 3.4.1.2 for debris removal, GE shall include the same procedures described in the second paragraph for dewatering in Section 3.4.2.2 (e.g. use of polyethylene sheeting, water treatment at 64G).

9. It is unclear, given the language used in the Work Plan "as necessary", a) if soil removal will be performed when installing the shoreline protection system in areas where bank soil removal is not being performed as a component of the Bank Soils Area; b) how the shoreline protection system will be transitioned from Bank Soils Areas to non-Bank Soils Areas; and c) how no loss of flood storage capacity will be achieved if soil removal is not performed to install the shoreline protection system. GE shall clarify if soil will be removed to install the shoreline protection system, how the shoreline protection system conceptually will be placed with respect to Bank Soils Area and non-Bank Soils Area, and how flood storage capacity will be maintained.

   GE shall include in the Final RD/R Work Plan detailed cross-sections at 100-foot intervals (or the distance between detailed survey transects) except as otherwise specified that show the existing grades, proposed excavation grades, and proposed final grades from the edge of pavement (or similar distance to the lake for areas that do not abut Silver Lake Boulevard) extending 25 feet into the Lake. The cross-sections shall account for anticipated sediment consolidation, the placement of the armor stone and anchor trench, bank excavation, bank stability and recontouring, bank replantings (in the NRD/EA areas) and construction of the walking path. In areas where the bank contours are modified from existing conditions, GE shall demonstrate how soil performance standards are met for the post-construction grades.

10. In Section 3.4.3.1, it is stated in the Work Plan that the cap placed on the scrub/shrub island will be 14 inches with an additional eight inches of topsoil to be placed for a total thickness of 22 inches. The finish grading will be done such that the top of the island will be approximately one foot above mean surface water elevation (i.e. 975.9). It is further stated that to accommodate this placement, removal will be performed to an elevation of 975.1. It is unclear from examining the existing topography depicted on the figures in the Work Plan and with the explanation provided in the Bank Soil Work Plan how this will tie into the bank soil removal. GE shall clarify how the final grade of the island, the cap placement in the vicinity of the island, and the bank soil removal will be performed and tie in together. In addition, GE shall submit detailed cross-sections at a spacing of 50 feet (or less as necessary) for this area in the Final Work Plan.

11. GE shall include a NAPL Contingency Plan (NAPL Plan) in either the Revised Conceptual Work Plan or Final RD/RA Work Plan. This NAPL Plan shall include removal or other remediation, as practicable, of any NAPL or other free petroleum-based product observed in constructing the shoreline protection system, sediment, and soil removal. GE shall coordinate with PEDA to appropriately manage and dispose such material prior to or during the installation by PEDA of the box culvert and swale.

12. In Section 3.5.2 GE proposes to collect core samples after 4 to 6 inches of cap material have been placed. However in Section 4.3.2.2 GE proposes to collect the samples after 5 to 6 inches of material are placed. GE shall collect samples after 4 lifts have been placed and depending on the achievement of the Performance Standard, potentially after approximately 8 inches have been placed to allow for timely corrective action if the 0.5% TOC Performance Standard or necessary cap thickness are not achieved upon EPA's determination of the necessity for the additional sampling.

13. GE shall reassess water elevation calculations using the data collected in the monthly monitoring program. GE shall use the output from the GE HEC/RAS model for the East Branch to evaluate the influence of storm events on river elevations and subsequently on water elevations in the Lake, recalculate armor stone specifications and elevations for the shoreline protection system using this information, and revisit the sizing and placement of armor stone adjacent to the large outfalls. A reservoir model may also be used to support this reassessment. In the Final RD/RA Work Plan, GE shall also provide the proposed cutting and filling details associated with the bank soil removal and cap construction. In addition, GE shall demonstrate compliance with the flood storage capacity ARARs in the Final RD/RA Work Plan.

14. GE shall continue to perform ongoing monitoring of water surface elevation (wsel) through implementation of the remedial activities because with the addition and management of a weir at the lake discharge, water surface elevation may

fluctuate more than typically observed and confound accurate placement of the shoreline protection system.

15. In GE's December 15, 2004 letter it was agreed that the armor layer be extended to a maximum of 5.3 feet in certain areas of the lake agreed upon with EPA. GE shall propose a plan to address the extension of the armor layer and the locations where it is to be done.

16. GE shall insure that the gravel habitat layer is 3 inches thick up to one month after placement, and allow for the likelihood of some material filling the void spaces between the armor stone when conducting the placement.

17. Please note the concern that has been expressed that the walking path and picnic areas be ADA-compliant.

18. Section 6.1 of the Work Plan states that the banks will be cleared of vegetation as necessary for placement of the shoreline protection system. GE shall document the existing vegetation in the banks that are not subject to plantings as specified in Attachment I. In addition, GE shall propose to revegetate these banks with species similar to those present pre-remediation, with the exception of non-native and/or invasive species. Documentation of the existing vegetation, proposed revegetation plan, and inspection and maintenance plan for these banks shall be included in the Final RD/RA Work Plan.

19. If turbidity measurements exceed 50 NTUs, GE shall collect a surface water grab sample and analyze it for PCBs and TSS in accordance with the protocols used in the Pilot Study. GE may consult with EPA about reducing the number and/or frequency of samples after adequate data are available to confirm the findings in the Pilot Study.

20. The use of ten sample locations for the during-construction and post-construction monitoring program to determine the efficacy of cap placement in terms of thickness and TOC concentration is inadequate based upon the high degree of variability observed in the data collected from the 13 cores located within the 1-acre Pilot Study. Pre-placement *ex situ* sampling for TOC (every 500 yd^3) is being performed at a frequency equivalent to one sample per 0.32 acres of 12" of cap material (excluding the 2-inch mixing layer), yet the sampling to verify achievement of the TOC Performance Standard that must be achieved *in situ* would only have a sampling density of one sample per 2.6 acres. GE shall propose a during-construction and post-construction sampling plan that will allow for a statistically-based determination of whether the Performance Standard(s) of a minimum of 0.5% TOC and cap thickness are met. If these conditions are not met, GE shall propose corrective action(s) to achieve the required conditions.

21. GE states that if the during-construction core samples indicate levels below 0.5% TOC in any of the isolation layer materials, GE "will consider" modifications of

the cap material application method or the addition of supplemental material to enhance the TOC content in the isolation layer. The requirement for a minimum of 0.5% TOC is a Performance Standard and as such, if analyses indicate this performance standard is not achieved, GE shall modify the application method and/or the materials used after discussion with EPA and approval of such modification by EPA.

22. GE shall continue the use of the sediment collection pans for the duration of cap placement as they provide a very useful tool to control the day to day variability in cap placement thickness rather than discontinuing their use as is being considered in the Work Plan. If conditions are observed that warrant reduction or discontinuation of the use of the pans, GE may propose a plan for discussion and approval by EPA.

23. Technical Attachment K of the SOW states that grid-based bathymetric surveys and/or the use of cap thickness and sedimentation gauges, as well as diver inspections shall be used in long-term monitoring. However GE only proposes the use of sediment cores at the ten locations in the Work Plan which are also specified in the SOW. GE shall propose a method to adequately evaluate cap thickness as part of the long-term monitoring plan as required by the SOW.

24. GE shall include an inspection of the shoreline protection system following all major storm events. GE shall propose the storm event conditions that will trigger such inspections. In addition, GE shall address and include a proposal regarding inspections of the shoreline protection system after major wind events.

25. The discussion in Section 4.5.2 implies that monitoring of the shoreline protections system will only be conducted for 5 years following completion of the construction. In accordance with the SOW, at the end of five years GE shall propose to EPA an appropriate long-term monitoring plan for EPA approval.

26. GE shall include in the long-term monitoring of the plantings the control of invasive species as required in Section 8.1 of Technical Attachment I to the SOW.

27. GE shall provide testing methods for all testing proposed in Attachment A. GE shall submit copies of the testing results for all proposed materials prior to placement and shall certify that all materials meet the proposed specifications or applicable requirements. In addition, GE shall increase the testing frequency for armor stone to one sample per 2,000 CY per stone size.

Typographical Errors

28. Page 12 – 3rd paragraph. It appears the reference to Section 3.5 is incorrect, and that it should be Section 3.4.1.2 or 3.4.2.2.

29. Page 15 – 2nd paragraph. It appears the reference to Section 3.1.3 should be 3.3.1.

30. Typo Page 16 – 4th paragraph. In the last line, the first use of the "PDI" appears incorrect, and that it should be something else.

31. Page 17 – 4th paragraph. It appears the reference to Section 3.7 should be to Section 3.5.

32. Page 18 – 1st paragraph. GE shall provide a schematic with elevations and depths/thicknesses in the Final Work Plan.

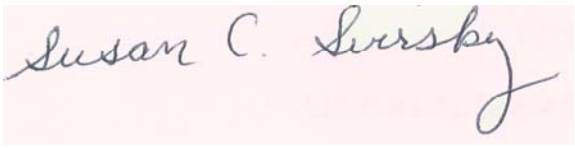
33. Page 23 – 1st paragraph. It appears that the reference to Section 3.6 for materials handling is incorrect.

34. Page 26 – Shallow Water Shelf. It appears the reference to Section 3.8.4 should be 3.6.4.

35. Page 36 – 2nd paragraph. It is unclear which monitoring program "specified above" is indicated. GE shall clarify what the proposed monitoring program will be for the shallow-water shelf and cap on the island.

36. Figure 4-1 – The Appendix IX+3 samples are not included.

GE shall submit a Revised Conceptual Removal Design/Removal Action Work Plan addressing these conditions (except where otherwise noted) within 45 days of receipt of this letter. In addition, GE shall submit the testing results from evaluation of additives other than topsoil as discussed in Condition 2 under separate cover within 90 days of receipt of this letter. If you have any questions, please give me a call.



Susan C. Svirsky, Project Manager

Attachment

cc: Mike Carroll, GE
Rod McLaren, GE
James Bieke, Goodwin Procter
Mike Gorski, MassDEP
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Ken Finkelstein, NOAA
James Owens, EPA
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Tim Conway, EPA
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Mayor James Ruberto, City of Pittsfield
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December 23, 2008

Mr. Andrew T. Silfer, P.E.
General Electric Company
159 Plastics Avenue
Pittsfield, Massachusetts 01201

Sent via US Mail and Electronic Mail

RE: Conceptual Removal Design/Removal Action Work Plan for Silver Lake Sediments

Dear Mr. Silfer:

In my capacity as Lead Administrative Trustee (LAT) for the GE/Housatonic River site, this letter provides written notification to GE regarding the review by EEA and USFWS, as the Trustees, of GE's report "Conceptual Removal Design/Removal Action Work Plan for Silver Lake Sediments" (hereinafter Work Plan) submitted July 3, 2008. Such review has been conducted pursuant to Paragraph 119 (Work Plans for Restoration Work Components) of the Consent Decree (CD).

The Trustees have reviewed the proposed conceptual design of the restoration components for Silver Lake for consistency with the CD and Technical Attachment I. After consultation with EPA, DEP, and the City of Pittsfield, we hereby conditionally approve the Work Plan subject to the following conditions. We also advocate, as a follow-up to these comments, that 1) a site walk be convened with representatives of the Trustees, GE, EPA, and the City to discuss design issues and 2) the details of the design be discussed at the next CCC meeting.

Shallow-Water Shoreline Shelf

1. In order to effectively enhance fish habitat, the gravel habitat layer should contain sand and gravel with material diameters 1-inch or less, with high proportions of small grain size components. The proposed 3-inch or less material diameter criteria is too large for nest-building centrarchids present in the lake. Adequate grain size composition of the gravel layer is essential in order for it to be useful for fish nesting.

2. It is unclear how wide and at what slope the armor stone and gravel habitat layer will be in all parts of the lake. However, it is likely that steep sloped portions of armoring may not support fish nesting habitat, even with a gravel layer. However, these areas could support benthic community and submerged aquatic vegetation re-colonization if the habitat layer was amended with organic matter, which in turn would support fishery re-establishment.

Scrub-Shrub Island

1. It is unclear if the entire island area will be armored in addition to the channel area. Figure 3-6 shows only the channel as armored while Figure 3-10 shows armoring around the entire island area. There is no supporting text describing this issue and it should be clarified.
2. GE shall address the requirement in Technical Attachment I for the island that, in areas where exposed armoring is present, the voids in the stone will be filled with topsoil and seeded with a wetlands mixture of herbaceous species.
3. It is stated the island will have a final post-remedial elevation 1 foot above mean water level. Figure 3-6 depicts a mounded topography with tree plantings in contrast to text description and should be clarified.
4. We do not recommend planting cattails due to their invasive nature and likelihood to self-colonize the lake and form a monoculture, which is inconsistent with NRD goals.
5. Invasive species control should be discussed for this area and all restored habitat around and in the lake.

Walking Path

1. Walkway Width: Trustees agree with a minimum width of 5' but suggest increasing the width by 1-2' especially in areas along the shoreline with viewsheds of the City and the Berkshires. We also recommend installation of benches at such locations for users to enjoy the lake and views.
2. Walkway Material: We recognize that Technical Attachment I specifies a walking path covered with crushed stone. However, we suggest GE explore and compare benefits of various soft surface and hard surface products in terms of maintenance/erosion issues and multi-functional goals including public use. Trustees strongly advocate soft-surfaces to mitigate non-point source pollution, but recognize that hard surface/porous products have been developed which may also be feasible.
3. The walkway should be graded away from the lake for drainage. It should not be immediately proximal to the lakeshore, if possible, to minimize bank erosion from drainage off the surface, and provide wildlife with a buffer for shoreline and emergent habitat use without disturbance.
4. The cross-section of the walkway/guardrail/top of shoreline will vary depending on existing slopes. Trustees suggest moving the walkway closer to the shoreline in wider areas to take advantage of viewsheds. In other areas, the walkway will be close to the guardrail, but for the majority of the shoreline, the walkway can be placed 5' from the guardrail.
5. Trustees suggest the guardrail be replaced with a more rustic/wood material, or replace the metal rail with wood and retain the metal posts. Portions of the existing guardrail will need to be modified in order to allow pedestrian movement from the proposed crosswalks.
6. Access: Pathway alignment and access should correlate with existing sidewalks and reuse projections by PEDA for the area, e.g. access to the pathway could occur at both ends and possibly at 1-2 intervals along Silver Lake Blvd, dependent on reuse projections by PEDA. Due to steep banks and limited area, a portion of the walkway on the eastern shoreline should be eliminated and not extended to the intersection of East Street.

7. Picnic Areas: Trustees do not recommend locating a picnic area @ the intersection with East Street. Another more appropriate location along the northern shoreline would be recommended.

Bank Plantings

1. It is unclear how the NRD plantings identified in Technical Attachment I to the SOW are going to be performed in conjunction with the installation of the walking path and Bank Soils removal. GE should provide a clear description of the integration of these activities in the Final RD/RA Work Plan.
2. Trees and shrubs: Trustees recommend changing the location of the shrubs and trees, such that shrubs are planted nearest the cap armor versus the trees.

- Shrubs: In lieu of oblong patches, shrubs should be planted in two rows with alternating spacing, at the originally prescribed distances from the mean high water/armor edge and the individual spacing requirement of 4'. Total number of shrubs should at least equal the originally specified numbers based on the oblong patches but may need to be augmented dependent on the requirement to populate all shoreline areas.
- Trees should be planted above the bank from the shrubs at the original space separation (from the shrubs). The performance criteria state that black willow and eastern cottonwood be planted as a single line of trees @ 8' on center; however, we recommend that tree separation could be greater than 8' (10-12') and the size be increased to at least 2-1/2" - 3" caliper, with percent survivability increased to 100% in such areas. Tree species may also include silver maple.

3. Presently, the shoreline of the lake supports a predominantly hardwood overstory and a mixed understory of trees, shrubs and vines. This vegetation provides multi-use habitat for a variety of migratory birds. We assume that clearing of vegetation for bank soil removal and shoreline armoring will entail removal of most, if not all, of the existing vegetation. We recommend that habitat commensurate with existing habitat should be replaced around the entire lake, not just with the proposed woody plantings along the eastern and northern perimeters and herbaceous seeding elsewhere.
4. Invasive species monitoring and control should be included in long-term monitoring operations for all re-vegetated bank and shoreline areas and submerged aquatic habitat

If you should have any questions regarding these comments, please feel free to contact me at 617-626-1134. We look forward to discussing the details of these design parameters as needed.

Sincerely,

Dale C. Young

Dale C. Young
LAT Housatonic River

CC Veronica Varela, USFWS
Kenneth Munney, USFWS
Susan Svirsky, EPA
Dean Tagliafero, EPA
Richard Fisher, EPA
James McGrath, City of Pittsfield