UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02114-2023

01-0491

May 24, 2002

Mr. Andrew T. Silfer
Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue
Pittsfield, MA 01201

Re: Comments on General Electric Company's (GE) December 2001 *Conceptual Removal Design/Removal Action Work Plan for Newell Street Area I,* GE Housatonic River Project Site, Pittsfield, Massachusetts.

Dear Mr. Silfer:

This letter contains the Environmental Protection Agency's (EPA) comments concerning the above-referenced *Conceptual Removal Design/Removal Action Work Plan for Newell Street Area I.* This *Conceptual Removal Design/Removal Action Work Plan for Newell Street Area I* (Conceptual RD/RA Work Plan) is subject to the terms and conditions specified in the Consent Decree (CD) that was entered in U.S. District Court on October 27, 2000.

Pursuant to Paragraph 73 of the CD, EPA, after consultation with the Massachusetts Department of Environmental Protection (MDEP), provides the following comments on the above-referenced submittal. Some of these comments relate to the need for additional sampling, while others relate to the evaluations in the Conceptual RD/RA Work Plan. GE shall submit a supplemental sampling proposal for Newell Street Area I within 30 days of the date of this comment letter. That submittal shall propose additional sampling at this area, taking into account the EPA comments set forth below that require or relate to additional sampling. That submittal shall also propose a date for submittal of an addendum to the Conceptual RD/RA Work Plan. The addendum shall include the results of the additional sampling and address the remaining EPA comments listed below.

General Comments

1. GE points out a variety of evaluation issues related to the Appendix IX+3 constituents that are not covered specifically in the CD and Statement of Work for Removal Actions Outside the River (SOW). These issues are addressed below.

   - EPA concurs with GE's proposed Screening Preliminary Remediation Goals (PRGs) for total cyanide and total xylenes since these values are based on the most conservative EPA Region 9 PRGs for cyanide and xylene compounds.

   - For volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) that exceed the Screening PRGs, based entirely on elevated detection limits above the Project Quantitation Limits (PQLs), GE shall propose to resample select representative locations with elevated detection limits in an effort to achieve the PQLs.

   - GE shall retain Appendix IX+3 constituents for further evaluation, if lower analytical detection limits (at or below the Screening PRG levels) cannot be achieved for any compound detected previously at the Removal Action Area (RAA).

   - For Appendix IX+3 constituents with Screening PRGs that are significantly lower than their PQLs and that have not been detected previously at the RAA, GE shall demonstrate that it has met the PQLs, to the extent practical, and propose alternative Screening PRGs for the compounds, such as the PQLs, consistent with the values proposed in previous RD/RA Work Plans.

2. GE's spatial averaging calculations do not include the portions of Theissen polygons located beneath any of the buildings in the Newell Street Area I parcels. A few of the buildings or portions of buildings located on various parcels in Newell Street Area I are constructed with dirt floors, for example, the northern portion of the building on Parcel J9-23-20 and the storage barn at the northern end of the same parcel. GE shall evaluate the dirt floor portions of these buildings as unpaved areas with regard to PCB spatial averaging. GE shall confirm the construction details of the building floors on all parcels and modify the PCB spatial averaging polygons to reflect

the type of floor located within buildings.

3. Consistent with the SOW, GE has used the following dioxin/furan Toxic Equivalency Quotient (TEQ) PRG concentrations to assess the parcels: 1 part per billion (ppb) for recreational properties from 0- to 1-foot below ground surface (ft bgs); 1.5 ppb for recreational properties from 1- to 3-ft bgs; 5 ppb for commercial properties from 0- to 1-ft bgs; and 20 ppb for commercial properties from 1- to 15-ft bgs. In addition, although not specified in the SOW, EPA requests that, for Newell Street Area I and subsequent RAA evaluations, GE compare dioxin/furan TEQ data for the depth increments listed below (using either the maximum TEQ concentration or the 95% Upper Confidence Limit on the mean of the TEQ concentrations) to the following TEQ levels:

   - 1 ppb for recreational properties from 0- to 3-ft bgs and 5 ppb for commercial properties from 0- to 3-ft bgs, where the owner has not agreed to execute an Environmental Restriction and Easement (ERE).
   - 20 ppb for recreational properties from 3- to 15-ft bgs.

4. In Subsection 4.3.5 (page 4-11), GE proposes to use the arithmetic average concentrations of various Appendix IX+3 compounds to compare against the Massachusetts Contingency Plan (MCP) Method 1 S-1, S-2, or S-3 category soil standards. GE has not provided the rationale for using the arithmetic average as required by Technical Attachment F to the SOW. GE shall provide a rationale for using the arithmetic average.

5. Significantly elevated concentrations of Appendix IX+3 constituents exist on several parcels, where EPA believes that the proposed PCB removal may not fully address these Appendix IX+3 constituents. Specifically, the following sample locations contained elevated concentrations of lead (ranging up to nearly 10,000 ppm) that may extend beyond the limits of the proposed PCB removals or other PCB remediation: on Parcel J9-23-13, sample locations D-4 (1- to 3-feet bgs) and D-5 (0- to1-foot bgs); on Parcel J9-23-16, sample locations D-6 (1- to 3-feet bgs), QP-22 (4- to 8- feet bgs), and QP-27 (4- to 6-feet bgs); and on Parcel J9-23-17, sample location IA-98 (3- to 6-feet and 6- to 15-feet bgs). For these locations, GE shall further assess the extent of areas having significantly elevated concentrations of lead (regardless of the proposed PCB remediation areas) through additional soil sampling and/or through additional Appendix IX+3 evaluations. Ultimately, GE must demonstrate that the proposed PCB remediation or other proposed remediation addresses the extent of the elevated Appendix IX+3 concentrations in these areas to confirm that Appendix IX+3 Performance Standards have been achieved.

   The arithmetic average, when used for the MCP Method 1 evaluation step, doesn't establish a removal area (e.g., Thiessen polygons for PCBs) for Appendix IX+3 constituents that exceed the Appendix IX+3 Performance Standards in soil. The following issues need to be resolved:

   - Unless GE decides to extend Appendix IX+3 soil removal areas to the next sample location that meets the Performance Standards, additional Appendix IX+3 sampling is required to delineate the extent of soil that needs to be removed to meet the Performance Standards. GE shall propose a protocol for defining the extent of soil that needs to be removed. If additional sampling is proposed, GE shall address sample pattern/frequency, depth, and areal extent for the additional samples be collected.
   - A process for evaluating additional Appendix IX+3 data needs to be established. New data shall be used to establish the extent of Appendix IX+3 soil removal/engineered barrier placement rather than to eliminate the need for such remediation through recalculating the overall Appendix IX+3 average at the property.

6. EPA has reviewed the risk evaluations provided by AMEC and raised several issues (see bulleted items below) concerning the values used in the risk evaluations. EPA believes that the human risk may have been underestimated for several compounds based on the values used by AMEC. GE shall recalculate the risk in response to the following comments:

   - If a relative oral absorption factor other than 100% is used in the soil ingestion dose calculations, the toxicity factors must be modified to represent an absorbed dose.
   - When calculating dermal risks, the toxicity factors must be modified to represent an absorbed dose.

- The use of time-weighted exposure assumption for the child recreational exposure scenario (Parcel J9-23-17) is not appropriate and underestimates risk. The report did not follow the methodology for age-adjusting risk that is presented in EPA, 1999[a].

- Page 6, first paragraph. The total annual soil ingestion assuming 50 mg/day for 219 days/year is equal to 10,950 and not 10,960 as presented.

- Table A4-b: Benzo(a)anthracene and arsenic soil concentration (CS) values of 1.36 and 6.27 are not consistent with the values presented on page 8 of the text. GE shall verify or correct these numbers.

- Tables A7-a and A7-b: Arsenic CS value on tables is 3.57 mg/kg. This is not consistent with text (see page 10). The 3.57 mg/kg value appears to be for Phenanthrene. The subsequent dose and risk calculations need to be updated.

- Tables 1 and 2: Toxicity criteria for vinyl chloride and 1,4-dichlorobenzene are referenced incorrectly.

- For the Adult Lead Model (ALM), the default ranges for baseline blood lead concentrations (PbB) and individual blood lead geometric standard deviation (GSDi) are cited from EPA 1996[b] based on the NHANES III Phase 1 data. While the values presented are indeed the ones noted in the source, the latest ALM (August 2001) uses updated ranges for the PbB and GSDi parameters based on the analysis of data collected in the completed NHANES III Phase 1 and 2 surveys. These updated values should be used.

- Page 6, last paragraph. Using the updated PbB and GSDi values would result in a slightly lower commercial adult PRG of 1712 mg/kg. This value should be used throughout the risk assessments to make comparisons with the site-specific lead concentrations. This change does not affect the results.

- Table 4. According to the text, a PRG was calculated assuming a 95th percentile fetal blood lead level of 10 μg/dL. Site-specific concentrations were compared with this calculated PRG. This table is titled "Calculations of Blood Lead Concentrations (PbBs)" and in fact calculates blood lead concentrations, not the PRG. The PRG calculation should be shown. In addition, as noted above, the updated PbB and GSDi values should be used in this calculation.

- For recreational and residential properties where lead concentrations (prior to the integration of proposed PCB soil removal areas) exceed the Appendix IX+3 Performance Standards, GE shall evaluate lead exposures for children using the Integrated Exposure Uptake Biokinetic (IEUBK) child lead model.

7. GE shall make the following changes to the proposed supplemental soil sampling strategy in Section 5:

   - In Subsection 5.2, GE indicates that six additional soil sample locations (four subsurface and two surficial) are proposed to supply PCB data for parcels J9-23-16 and -23, beneath the buildings on these GE-owned properties. The proposed sampling is adequate to supplement the PCB data set. However, GE proposes that no Appendix IX+3 samples will be collected from the four subsurface soil sample locations. EPA's review of the Appendix IX+3 sample distribution at these two parcels has revealed that an additional Appendix IX+3 sample is required to adequately characterize the 6- to 15-foot interval at Parcel J9-23-16.

   - In Subsection 5.5, GE indicates that eight additional soil samples are proposed to supply Appendix IX+3 dioxin/furan data for parcel J9-23-17, for which all existing dioxin/furan data have been rejected. The proposed samples are to be collected from four locations (IA-43, IA-63, IA-72 and IA-82) from the 0- to 1-ft and 1- to 3-ft bgs depth intervals. EPA requests that GE collect Appendix IX+3 dioxin/furan samples from the 3- to 6-ft, and 6- to 15-ft depth intervals, in order to further characterize the parcel. Also, the samples proposed for location IA-43 should be moved approximately 35 feet to the south, to a previously unsampled area.

8. GE shall provide a more detailed utility corridor evaluation procedure to the Agencies for review and approval. Additionally, GE shall address the following utility corridor issues:

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[a] EPA, 1999. Memorandum from Ann-Marie Burke (Toxicologist, Technical Support Section, EPA Region 1) to Richard Cavagnero, GE Project Leader, USEPA, Region 1) Subject: Protectiveness of Cleanup Levels for Removal Actions Outside the River – Protection of Human Health. August 4, 1999 (see SOW Appendix D).

[b] EPA, 1996. Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. Technical Review Workgroup for lead. December, 1996.

- For the sanitary sewer utility located along the riverbank at the northern end of the RAA, GE shall apply a 25-foot utility corridor for spatial averaging evaluation (12 ½ feet on either side of the utility line), since the easement for this utility corridor is 25 feet wide.

- To characterize soils within a utility corridor, GE shall only use soil data located within a 50-foot band centered along the length of the utility (25 feet on either side). In addition, the data shall be distributed at a frequency of one sample per approximately 100 to 150 linear feet of utility.

- GE shall apply the Performance Standard of 200 ppm for each utility corridor within a property to the maximum depth of the utility trench bedding or across the 0- to 15-foot depth interval, whichever is less. GE has proposed to apply the Performance Standard of 200 ppm to the 1- to 6- foot depth interval in utility corridors (Section 3.6); however, the SOW does not support the limited applicable depth interval that GE has proposed [SOW, Section 2.3.2, 6(c)]. The top of the main sanitary sewer line along the Newell Street Area I riverbank is deeper than 6 feet underground – it ranges from 7 to at least 11 feet deep.

- For the sanitary sewer utility corridor located along the riverbank at the rear of the RAA, GE shall calculate separate PCB spatial averages for reasonable exposure areas within that corridor (to be proposed by GE and approved by EPA), rather than for the entire length of the corridor in Newell Street Area I.

9. In Figure 3-1, GE proposes 0.5-foot soil removals from parcels, J9-23-12, -16, -17, and -21. Soil removals for the 0- to 1-foot spatial averaging interval must be conducted for the entire 1-foot interval, not just the first 6 inches.

10. On page 4-16, GE proposes to eliminate the Appendix IX+3 MCP Method 1 evaluation at parcel J9-23-12 at the 1- to 3-ft depth interval since all the existing Appendix IX+3 samples at that depth will be excavated during the proposed PCB soil removals. Eliminating Appendix IX+3 evaluations for this depth increment is not acceptable. GE shall propose additional sampling and analysis of Appendix IX+3 constituents in the 1- to 3-foot depth increment at Parcel J9-23-12 in the forthcoming supplemental sampling proposal.

11. GE has proposed soil removals along most of the drainage ditch located between parcels J9-23-22 and J9-23-23. GE shall remove soil/sediment from entire ditch – only one small area near sampling location FW-17 has not been selected for removal.

12. As noted regarding previous Work Plans, it is difficult to assess the spatial representativeness of the Appendix IX+3 analytical results based on the figures provided by GE in the Work Plan. GE has agreed to prepare maps illustrating the distribution of Appendix IX+3 samples, to demonstrate that the vertical and horizontal distributions of Appendix IX+3 analyte groups/constituents meet the requirements stipulated in the SOW. These maps should include all current and proposed sampling for Appendix IX+3 constituents. EPA reserves the right to comment on the adequacy of the Appendix IX+3 sampling after having reviewed these additional submittals from GE.

13. In accordance with the MCP, GE has proposed that the Method 1 S-2 Soil Standards apply to surface soils within the upper 3 feet of the commercial/industrial parcels, and the Method 1 S-3 Soil Standards apply to "subsurface soil" (i.e., soil at depths greater than 3 feet, or beneath pavement). However, the averaging intervals specified in the SOW for commercial/industrial properties, which have accepted an ERE, address the 0- to 1-foot depth interval and the 1- to 6-foot depth interval. GE has proposed to evaluate the 1- to 6-foot and 0- to 15-foot depth intervals using the Method 1 S-3 Soil Standards. Under this commercial-use scenario, the 1- to 3-foot depth interval in unpaved areas is not being evaluated against the Method 1 S-2 Soil Standards. Therefore, GE shall evaluate soil in the 1- to 6-foot depth interval using Method 1 S-2 Soil Standards for commercial properties with EREs.

14. GE shall evaluate sulfide at Newell Street Area I according to the protocol agreed to during the 20s, 30s and 40s Complexes RD/RA Work Plan discussions, as documented in EPA's 20s, 30s and 40s Complexes RD/RA Work Plan Conditional Approval Letter, dated March 19, 2002. Sulfide concentrations shall be compared to Screening PRGs based on the EPA Region 9 PRG for carbon disulfide.

15. The SOW requires that the total number of Appendix IX+3 samples collected from an averaging area be equal to approximately one-third the number of PCB samples required to characterize that area. Further, the Appendix IX+3 samples must be approximately evenly distributed between surface (0- to 1-foot depth increment) and subsurface (greater than 1 foot depth increments) soil samples.

    EPA agrees that GE has generally followed the SOW requirements presented in the preceding paragraph, but EPA's review of the Appendix IX+3 sampling has revealed several distribution and completeness issues. These issues relate to the distribution of Appendix IX+3 samples across each parcel and the completeness of the analyte groups collected at each averaging interval:

    - Incomplete Appendix IX+3 samples (samples or combinations of samples that do not cover the full list of the RAA's Appendix IX+3 analytes) do not adequately meet the SOW requirements. For example, at Parcel J9-23-16, two Appendix IX+3 samples (QP-22 and QP-23) are listed at the 6- to 15-foot depth as meeting Appendix IX+3 sampling requirements. Unfortunately, at this depth increment, only inorganics were collected and analyzed for at these locations.

    - Appendix IX+3 samples collected in close proximity to one another should only count as one Appendix IX+3 sample. Using the same example as above, QP-22 and QP-23 are only approximately 25 feet apart.

    GE shall review the Appendix IX+3 analyte distribution at each Newell Street Area I parcel and, as part of the supplemental sampling proposal for Newell Street Area I, propose additional Appendix IX+3 sampling to address these distribution and completeness issues.

Parcel-Specific Comments:

Parcel J9-23-18

In Subsection 5.5, GE proposes additional sampling for Appendix IX+3 constituents at two locations and two depths (1- to 3-ft and 3- to 6-ft bgs) on parcel J9-23-18. In order to increase the representativeness of the Appendix IX+3 data at the northern end of the parcel, GE shall relocate the samples proposed for location RV-9 to location RV-1 at the same depth intervals.

Parcels J9-23-19, -20, -21

The following list of issues relates to Parcels J9-23-19, -20 and -21:

- The spatial averaging calculations in Tables A-30 to -32 and A-34 to -36 indicate that analytical results from soil sample N1-OT000014 were used in the spatial averaging calculations for parcels J9-23-19 and -20. In the June 2001 *Supplement to Pre-Design Investigation Report*, soil sample N1-OT000014 is identified in the data table on Figure 2B as a "soil pile" sample, and was not proposed for grid characterization or supplemental use. Soil sample N1-OT000014 was collected by WESTON for EPA from a pile of loam stored on parcel J9-23-19 by driving a sampler diagonally into the pile, and cannot be used for spatial averaging purposes. The analytical results related to soil sample N1-OT000014 shall be removed from the PCB spatial averaging calculations in Tables A-30 to -32 and A-34 to -36 and the polygons related to soil sample N1-OT000014 depicted in Figures A-1 to -6 and A-8 shall be removed and the remaining polygons must be revised.

- The spatial averaging calculations in Table A-32 indicate that analytical results for sample N1-BH000471 from 3- to 4-ft bgs appear to have been included instead of those for sample J9-23-20-F-14, as the polygon associated with sample N1-BH000471 is not included in parcel J9-23-19 but the polygon associated with sample J9-23-20-F-14 is, on Figure A-6. GE shall revise the calculations to reflect this fact.

- The spatial averaging calculations in Table A-33 indicate that analytical results for sample N1-BH000471 from 6- to 8-ft bgs appear to have been included instead of those for sample N1-BH000464, as the polygon associated with sample N1-BH000471 is not included in parcel J9-23-19 but the polygon associated with sample N1-BH000464 is, on Figure A-12. GE shall revise the calculations to reflect this fact.

- No gas, water or sewer utilities are shown to serve Parcel J9-23-19; GE should confirm that this is correct, or evaluate such utilities if they exist.

- To better characterize the central portion of the property, GE shall collect additional Appendix IX+3 samples from 1- to 6-feet at location SZ-19.

Parcel J9-23-22

To better characterize the soils at the rear portion of the property, GE shall collect an additional Appendix IX+3 sample from 6- to 15-feet at location C-16 rather than at D-16, as proposed in the Work Plan.

Parcel J9-23-23

GE states in Subsection 3.5.8 that soils associated with sample FW-16, will be removed from the top foot, but Table A-53 does not reflect that soils in polygons 2098 and 3032, associated with sample FW-16, will be removed. GE should revise text or Table A-53 to resolve this conflict.

Parcel J9-23-25

GE proposes two additional locations (D-20 and H-22) on parcel J9-23-25 for supplemental sampling for Appendix IX+3 constituents at 6 to 15 ft bgs. GE shall instead collect the additional Appendix IX+3 soil samples from the 6- to 15-ft bgs interval at locations D-20 (as proposed by GE) and F-22 (replacing location H-22).

Parcel J9-23-26

GE has included sample PKSC-03 in the characterization of the CD portion of Parcel J9-23-26. However, this sample location is well beyond the boundary of the portion of Parcel J9-23-26 addressed by the CD, and therefore should not be used in this evaluation.

In the Work Plan, GE states that final limits for soil removal may be recalculated for shallower depth increments, resulting in revisions (aerial and depth) to specific volumes identified for removal. GE shall identify any proposed changes to the final limits for soil removal in the Conceptual RD/RA Work Plan Addendum and the Final RD/RA Work Plan. EPA reserves the right to require specific approval for any modifications, particularly any reduction in soil to be removed, from what was proposed in this document and illustrated on Figure 3-1.

EPA reserves its right to perform additional sampling in RAA 14 and/or require additional sampling or Response Actions, if necessary, to meet the requirements of the Consent Decree. If you have any questions, please contact me at (617) 918-1365.

Sincerely,

Bryan Olson
GE Team Leader

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