

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DEC 12 2000

DATE:

SUBJECT: **Engineering Evaluation/Cost Analysis Approval Memorandum**

FROM: J. Jeff Josephson, Remedial Project Manager
Emergency and Remedial Response Division

TO: Richard L. Caspe, Director
Emergency and Remedial Response Division

I. Subject

This Engineering Evaluation/Cost Analysis (EE/CA) Approval Memorandum requests and documents management approval and funding approval to conduct an EE/CA for a release or threat of release from the General Electric Company (GE) Hudson Falls Plant, an inactive industrial facility located in Hudson Falls, Washington County, New York. The GE Hudson Falls Plant is considered a facility as defined by Section 101 (9) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, (CERCLA), 42 U.S.C. § 9601(9).

The bedrock aquifer in the area of the GE facility, including bedrock beneath the Hudson River and south of the GE facility including the GL&V Property (formally known as Valmat-Sandy Hill, Inc.) is contaminated with polychlorinated biphenyls (PCBs) which are CERCLA hazardous substances as defined by CERCLA §101(14) and designated in Section 302.4(a) of the National Contingency Plan (NCP), 40 CFR § 302.4. The contamination exists as both PCB- contaminated non-aqueous phase liquid (NAPL) and PCB-contaminated ground water in areas west of the facility and southwest of the facility including the bedrock aquifer beneath the Hudson River. The contamination is not currently effectively contained or cannot be effectively captured with the existing pumping and/or containment systems that are in place at and in the vicinity of the plant site. In addition, this same area is contaminated with volatile organic contaminants (VOCs) and semi-volatile organic contaminants (SVOCs). The area is believed to be a continuing source of PCB, VOC and SVOC contamination to the Hudson River. Elimination of this source is required to: reduce the loading of PCBs and other hazardous substances into the Hudson River; prevent additional contamination of the Hudson River sediment with PCBs and potentially other hazardous substances; and reduce potential uptake of PCBs and potentially other hazardous substances by aquatic wildlife in the Hudson River. Eliminating or significantly reducing this source of PCBs and other hazardous substances will reduce the potential for ingestion of PCB-contaminated fish by humans, thereby alleviating health concerns for adults, adolescents, and children, and will also alleviate risks to the environment. Work performed for the Hudson River PCBs Site Reassessment Remedial Investigation and Feasibility Study demonstrates that the release of PCBs from the Hudson Falls Plant is a significant and continuing source of PCBs into Hudson River sediment and fish.

Both the United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) have documented the release of PCBs and other

CERCLA hazardous substances to the environment from the GE facility. EPA, in conducting the Reassessment Remedial Investigation effort, documented extensive PCB sediment contamination in the Hudson River. A Remedial Investigation (RI) and other hydrogeologic reports conducted by GE under an Order on Consent with the NYSDEC document extensive soil and bedrock aquifer PCB contamination and migration of PCB contaminated ground water and PCB NAPL from the GE Hudson Falls facility to the Hudson River. The nature and overall extent of the contamination at the GE facility and surrounding area is a result of GE's manufacturing history, hydrogeologic conditions at the facility, and contaminant transport mechanisms, as well as anthropogenic modifications to the bedrock and ground surface.

This EE/CA approval memo is seeking approval to conduct an EE/CA for the elimination or mitigation of all PCB-contaminated ground water and PCB NAPL discharges (as well as elimination of all discharges of ground water or NAPL containing other CERCLA hazardous substances) to the Hudson River from the GE Hudson Falls facility. It is limited to the PCB-contaminated ground water and NAPL discharges to the Hudson River not captured by the existing site containment/pump and treatment system. The EE/CA will not evaluate a comprehensive response action at the Hudson Falls Plant site and will not address contaminated ground water and NAPL at the facility that does not discharge to the Hudson River west or southwest of the facility, nor will it address facility soil contamination associated with the Hudson Falls Plant site (those issues are being reviewed pursuant to the NYSDEC Order on Consent.) EPA will make a final decision concerning a non-time critical removal action to address discharges to the Hudson River at Hudson Falls based on the EE/CA and in consideration of public comments provided to EPA during a public comment period for the EE/CA. EPA's final decision will be documented in an Action Memorandum.

II. Background

The GE Hudson Falls Plant is on 17.8 acres on the eastern bank of the Hudson River adjacent to Bakers Falls and the Bakers Falls dam within the Village of Hudson Falls, New York. The facility is considered a primary source of PCB sediment contamination at the Hudson River PCBs Superfund site as well as a source of PCB contamination to the overburden and bedrock aquifers in the area. From 1952-1977, historical direct discharges from outfall 002 at the GE Hudson Falls Plant of PCB-contaminated wastes from production of electrical capacitors which contained PCBs were a principal source of PCB migration/contamination to the Hudson River and Hudson River sediments. Direct discharges of production wastes from outfall 002 at the GE Hudson Falls Plant were terminated in 1977. Outfalls 003 and 003A may have also been direct discharges of PCB waste. In addition, discharges of PCB-contaminated ground water from the overburden and bedrock aquifers and migration of PCB-contaminated NAPLs from the GE Hudson Falls Plant are documented sources of PCB migration/contamination to the Hudson River. There are numerous sources/suspected sources of the ground water contamination as well as migration pathways at and near the facility, including the return air duct system in GE Plant building #1, the Sumpter Street Sewer, the Allen Mill, eastern raceway, lower raceway and the tailrace tunnel. Bedrock and other PCB source areas to the Hudson River that would be addressed under the recommended EE/CA are part of the Hudson River PCBs Superfund Site, which is on the National Priorities List.

Summary of Actions to Date

The following response actions have been implemented with respect to the ground water contamination at the facility pursuant to an Order on Consent between NYSDEC and GE:

NAPL monitoring and recovery - As of August 2000, a total of 4,951 gallons (18,752 liters) of NAPL have been recovered from the site.

Ground Water Extraction and Treatment - A ground water extraction system is operational and monitored from a "line" of recovery wells located adjacent to the Hudson River. The extracted ground water is treated at a plant located at the facility to meet New York State discharge standards and discharged to the Hudson River. The average weekly volume of ground water treated by the facility between the third quarter of 1999 and the third quarter of 2000 has ranged from 542,580 gallons during the third quarter of 1999 to 721,139 gallons per week during third quarter of 2000.

A containment system for NAPL seeps was installed in the wing-dam pool area; sediment was removed and managed from the eastern raceway and tailrace tunnel.

State Role

The New York State Department of Environmental Conservation has been extensively involved with investigations and response actions which have resulted in elimination of many potential sources and migration pathways for PCB-contaminated ground water and NAPL to the Hudson River. Currently, GE is conducting a Remedial Investigation and Feasibility Study at the Hudson Falls facility pursuant to NYSDEC Order on Consent Index #D5-0002-96-06.

III. Threat to Public Health, Welfare, or the Environment

A. Release or Threatened Release Into the Environment of a Hazardous Substance or Pollutant or Contaminant

The release of PCBs which are hazardous substances as defined by CERCLA §101 (14) into the environment from the GE Hudson Falls Plant has been extensively documented by GE and NYSDEC at the facility in soils and ground water, and in the surrounding bedrock aquifer and soils as well as in the Hudson River and Hudson River sediments. Extensive environmental data were collected and are summarized in the 1998 "*Bedrock Remedial Investigation Report*" prepared for GE by HydroQual (1997). The source areas remain a continuing source of PCBs into the Hudson River, and PCBs that have been released into the Hudson River continue to be transported downstream and contaminate sediments as well as enter the aquatic food chain.

1. Ground Water Contamination - Numerous ground water, surface water, sediment and soil samples have been collected from the site which document releases and migration of CERCLA hazardous substances from the facility. Since 1987, ground water samples were collected by GE from approximately 180 locations. Ground water samples were collected between two and nine times at approximately 60 locations and once at the remaining locations. Samples from most locations have

been analyzed for PCBs, VOCs, and base neutral semi-volatiles, while approximately 75 locations have been analyzed for metals. PCBs have been detected in ground water samples from the overburden (unconsolidated soils), the Snake Hill Shale (the shallowest bedrock unit at the facility), the Glens Falls Limestone and the Isle la Motte Limestone. In general, a sample with concentrations exceeding 200 micrograms per liter ($\mu\text{g/L}$), the solubility of Aroclor 1242, indicates the likely presence of emulsions or DNAPL. Since 1997, numerous samples have been collected. PCB contamination in the overburden ground water is greater than 10,000 $\mu\text{g/L}$ outside the manufacturing buildings at the GE facility. PCB contamination in the ground water from the upper Snake Hill Shale greater than 1,000 $\mu\text{g/L}$ is found near the former manufacturing buildings and the northern portion of the eastern raceway, in the middle of the Snake Hill Shale to the northeast, west and southwest of the former manufacturing buildings, and in the lower Snake Hill Shale beneath the tailrace tunnel and southeast of the tailrace tunnel. Within the Glens Falls Limestone and the Isle la Motte Limestone, the PCB contamination exceeding 100 $\mu\text{g/L}$ is found in a northeast-southwest trending area extending from the central portion of the facility under the former manufacturing buildings to the north portion of the adjacent GL&V property. (See Table 1.)

Table 1. Range of PCB Concentrations in GE Hudson Falls Plant Ground Water Wells since 1997

Bedrock Unit	Range of PCB Concentration in Ground Water ($\mu\text{g/L}$)	Range of VOC contamination in bedrock ground water ($\mu\text{g/L}$)
upper Snake Hill Shale	<1 - 2,100,000	nd* - 91,000 (a collection pit open to bed-rock)
middle Snake Hill Shale	<1 - 140,000	nd - 137,190
lower Snake Hill Shale	<1 - 460,000	nd-14,370
Glens Falls Limestone	<1 - 55,000	nd- 147,780

* nd = non detect

2. Surface Water Contamination - Since 1997, discharge of PCBs from the vicinity of the Hudson Falls Plant has been documented by GE during sampling of surface water of the Hudson River adjacent to the facility. Two areas that have been repeatedly sampled and located down gradient from the site since 1998 indicate:

a) Boat Launch Samples- (1/6/98 - 1/27/99)- Range of total PCB concentrations was from <11 nanograms per liter (ng/L) (1/12/98) to 5144.7 ng/L (11/23/98). Preliminary water quality data from 8/16/00 detected PCBs at a concentration of 32 ng/L.

b) Plunge Pool at 32 feet depth -(4/15/98 - 12/28/98) - Range of total PCB concentrations was from <11 ng/L (numerous dates) to 201.2 ng/L (9/3/98). Preliminary water quality data from 8/16/00 indicated no PCBs were present above the 11 ng/L detection limit.

c) Plunge Pool Depth Profiling - (5/98-7/98) - GE conducted depth profile sampling on 10 separate occasions from the plunge pool to determine if stratification of PCB contamination could be documented. Sample results indicated: 2 feet below water surface from nd (<11 ng/L) to 74.6 ng/L

(6/17/98); 16 feet below water surface from 11.2 ng/L-110.5 ng/L (6/6/98); and, at 24 feet below water surface from nd (<11 ng/L) -101.8 ng/L (6/17/98).

d) Sample Location HR 20 East and HR 50 East 4/98-8/98 - Sixteen water samples were collected from these two locations to characterize water quality existing in the plunge pool and Bakers Falls areas. The samples were collected one foot below the water surface 20 and 50 feet from the east bank of the river. PCB analytical results for HR 20 East ranged from nd (<11 ng/L) to 72.5 ng/L (6/4/98). PCB analytical results from HR 50 East ranged from nd (<11 ng/L) to 49.4 ng/L (9/12/98).

e) Eastern Bank South of Boat Launch Surface Water Sample Results - Collection and analysis at four sample locations south of the Boat Launch were conducted. Sample results indicated that PCBs ranged from nd (<11 ng/L) to 3,930 ng/L. The level of 3,390 ng/L was detected adjacent to a drop shaft in a former Niagara Mohawk Power Corporation facility.

3. NAPL Seep Contamination - Analysis of dense NAPL collected from bedrock seeps at Bakers Falls adjacent to the facility was conducted during 1996-1998. NAPL was collected directly from the bedrock surface and analyzed. The chemical analysis of the NAPL samples indicates that NAPL is composed of between 93% and 99% PCBs with the exception of samples collected from "Seep 13" which are approximately 52% - 93% PCBs. The remainder of each of the samples is composed of bis(2-ethylhexyl) phthalate (BEHP), phenyl xylyl ethane (PXE), or 1,2,4-trichlorobenzene (TCB). (Both BEHP and TCB are designated hazardous substances pursuant to CERCLA §101(14).) Analysis of "light" NAPL from "Seep 13" indicates that it is composed of approximately 89.3% PCBs, 2.6% BEHP, and 8.1% TCB. Seep 13 is located within the Hudson River in the Plunge Pool.

4. DNAPL Transport in the Hudson River - EPA (1998), concluded in their Hudson River PCBs Reassessment RI/FS Responsiveness Summary for the Data Evaluation and Interpretation Report (DEIR) that "PCB DNAPL from the Bakers Falls plunge pool is transported downstream primarily through dissolution and/or emulsification of very small droplets into the water column. Enhanced transport during spring high flows may then be associated with increased velocity and turbulence of DNAPL resident in the plunge pool, increasing the rate of interfacial PCB transfer and suspension of small droplets".

The exact amount of PCB-contaminated ground water or PCB-NAPL currently or potentially entering the Hudson River from the vicinity of GE Hudson Falls facility is unknown.

B. Threats to Public Health, Welfare or the Environment

Based on the findings of the GE RI reports conducted for NYSDEC and hydrogeologic investigations, there is a threat to human health and the environment resulting from the release and threatened release of PCBs into the Hudson River from the vicinity of the Hudson Falls facility, and the conditions at the Site meet the section 300.415 (b)(2) requirements for the undertaking of a CERCLA removal action based on the following factors in the NCP:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [300.415(b)(2)(i)];

- (ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems [300.415(b)(2)(ii)];
- (iii) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [300.415(b)(2)(v)]; and,
- (vii) The availability of other appropriate federal or state mechanisms to respond to the release [300.415(b)(2)(vii)].

(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [300.415(b)(2)(i)];

EPA has determined that PCBs entering the Hudson River from sources upstream of Rogers Island, including the area of the GE Hudson Falls Plant, contribute to the PCB contamination in water, sediment, and fish at the Hudson River PCBs Site. See Revised Baseline Modeling Report of the Hudson River PCBs Reassessment RI/FS (EPA, 2000). The EPA has determined that sufficient evidence exists to show that PCB mixtures are carcinogenic in animals. The available PCB animal carcinogenicity studies are summarized in EPA's 1996 reassessment of the toxicity data on the potential carcinogenic potency of PCBs (EPA, 1996), as well as EPA's Integrated Risk Information System (IRIS), an electronic data base which provides the Agency's consensus review of chemical-specific toxicity data (1999c).

The EPA has classified PCBs as a probable human carcinogen (B2), based on a number of studies in animals showing liver tumors with a number of different PCB mixtures which are believed to span the range of congeners found in environmental mixtures (Aroclors 1016, 1242, and 1260). Also, liver tumors were found in female rats for all Aroclors and in male rats exposed to Aroclor 1260 (EPA, 1996).

EPA has also evaluated the non-cancer toxicity of Aroclors 1254 and 1016, and information in this evaluation is presented in the IRIS database, mentioned above. As a result of this analysis, EPA developed individual oral Reference Doses that provide an indication of the non-cancer toxicity of these substances, and these are provided in the IRIS database. The non-cancer toxicity of individual Aroclors are evaluated by comparing the non-cancer dose an individual would receive from ingestion of fish to the Reference Dose. The resulting Hazard Index indicates that level to which the Reference Dose was exceeded.

A Human Health Risk Assessment (HHRA) conducted for the Hudson River PCBs Site Reassessment RI evaluated both cancer risks and non-cancer health hazards to children, adolescents and adults posed by PCBs in the Upper Hudson River from Hudson Falls, NY to the Federal Dam located in Troy, NY, and in the mid-Hudson River. As indicated above, EPA has classified PCBs as probable human carcinogens and known animal carcinogens. Other long-term adverse health effects of PCBs observed in laboratory animals include a reduced ability to fight infections, low birth weights, and learning problems.

The major findings of the HHRA are:

Eating fish is the primary pathway for humans to be exposed to PCBs from the Upper Hudson.

Under the reasonable maximum exposure (RME) scenario for eating fish, the calculated risk is one additional case of cancer for every 1,000 people exposed. This excess cancer risk is 1,000 times higher than EPA's goal of protection and ten times higher than the highest risk level allowed under Superfund law.

For non-cancer health effects, the RME scenario for eating fish from the Upper Hudson results in a level of exposure to PCBs that is more than 100 times higher than EPA's reference level (Hazard Index) of one.

Under the baseline conditions, the point estimate RME cancer risks and non-cancer hazards would be above EPA's generally acceptable levels for a 40-year exposure period beginning in 1999.

EPA also has identified significant risks to the environment posed by PCBs at the Hudson River PCBs Site. Ecological risks were calculated for representative fish, birds, and mammals. The highest risk levels were associated with piscivorous birds and mammals. PCBs at the site may adversely affect the survival, growth, and reproduction of these species, such as the mink, river otter, belted kingfisher and great blue heron. (Revised Baseline Ecological Risk Assessment for the Hudson River PCBs Reassessment RI/FS (November, 2000).

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems [300.415(b)(2)(ii)];

Sensitive ecosystems are and continue to be contaminated with PCBs due to the release of PCB-contaminated ground water and PCB NAPL from the vicinity of the Hudson Falls facility. The release has contaminated large portions of the Hudson River and its banks creating actual and potential conditions for exposure to PCBs by aquatic wildlife and humans. The EPA has determined that sufficient evidence exists to show that PCB mixtures are carcinogenic in animals. The available PCB animal carcinogenicity studies are summarized in EPA's 1996 reassessment of the toxicity data on the potential carcinogenic potency of PCBs (EPA, 1996), as well as EPA's IRIS, an electronic data base which provides the Agency's consensus review of chemical specific toxicity data (1999c).

(iii) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [300.415(b)(2)(v)];

Studies conducted for the NYSDEC have demonstrated that monitoring wells screened in the overburden soils or open to the middle Snake Hill Shale respond to precipitation which indicates that, during periods of precipitation, ground water level increases will influence the flow of PCB, VOC, and semi-VOC contaminated ground water as well as PCB-contaminated DNAPL from the facility to off-site receptors including the Hudson River.

EPA (1998) concluded in the Hudson River PCBs Reassessment RI/FS Responsiveness Summary for the DEIR that "PCB DNAPL from the Bakers Falls plunge pool is transported downstream primarily through dissolution and/or emulsification of very small droplets into the water column. Enhanced transport during spring high flows may then be associated with increased velocity and turbulence of DNAPL resident in the plunge pool, increasing the rate of interfacial PCB transfer and suspension of small droplets."

Measurement of water levels at monitoring wells found at the site in various bedrock or overburden units indicate that these monitoring wells respond to changes in the water level in the Hudson River. During increased flow conditions due to an increase in precipitation or melting of winter snow and ice, water levels fluctuate, indicating hydrologic influence between the Hudson River and the bedrock and overburden aquifer.

(vii) The availability of other appropriate federal or state mechanisms to respond to the release.

A non-time critical removal action is the most appropriate response mechanism to implement source control at the Hudson Falls on a schedule that is consistent with EPA's proposed remedial action for the Hudson River PCBs Superfund Site.

The existing Order on Consent between NYSDEC and GE does not address the necessary source control at Hudson Falls. New York State law may not provide NYSDEC with sufficient enforcement or other mechanisms that would enable NYSDEC to require source control at Hudson Falls on a schedule coincident with EPA's preferred remedy for the Upper Hudson River sediments.

EPA's administrative order authority under CERCLA Section 106(a), as well as the availability of CERCLA funding (depending on the cost of this source control measure), provide the most effective means for EPA to ensure that source control at Hudson Falls will be implemented.

C. Non-Time Critical Removal Action Applicability

In addition to the NCP criteria discussed above, EPA's February 14, 2000 memorandum "Use of Non-Time-Critical Removal Authority in Superfund Response Actions" (the "February 14, 2000 NTCRA Memorandum") indicates that EPA decision makers also should consider the following factors when determining whether to employ a non-time-critical removal action in a particular situation: (1) time sensitivity of the response; (2) the complexity of both the problems to be addressed and the action to be taken; (3) the comprehensiveness of the proposed action; and (4) the likely cost of the action. The applicability of these four criteria to the use of non-time critical removal action authority at Hudson Falls is discussed below:

(i) **Time sensitivity of the response**

Time sensitivity refers to the need to take relatively prompt action. In this case, the proposed response action is time sensitive because the area near the Hudson Falls facility represents a significant ongoing source of PCBs and other hazardous substances to Hudson River sediment, water, and fish that needs to be abated promptly. As noted above, EPA has determined that PCBs entering the Hudson River from sources upstream of Rogers Island, including the area of the GE Hudson Falls Plant, contribute to the PCB contamination in water, sediment, and fish at the Hudson River PCBs Site. A 1996 New York State Department of Health study of anglers in the Upper and Lower Hudson River found that about 18% of the Upper Hudson respondents had fish in their possession when interviewed, and that 11% had more than one fish. Consequently, the existing fishing advisories, which rely heavily on voluntary compliance, are not adequate in reducing exposure to PCBs through consumption of fish. It therefore is important to promptly address this source of PCBs to Hudson River water, sediment and fish. At the same time, the proposed response action is considered non-time critical because there is a planning period of at least six months before on-site activities must be initiated. Therefore, a non-time critical removal action rather than a remedial action is the appropriate mechanism to address PCB discharges from the vicinity of the Hudson Falls facility.

(ii) **The complexity of both the problems to be addressed and the actions to be taken**

The conduct of an EE/CA and non-time critical removal action of this nature is to address a highly complex ground water contamination and NAPL contamination source. In accordance with EPA's February 14, 2000 NTCRA Memorandum, use of non-time-critical removal authority is appropriate to address a complex problem where, as here, the proposed action is relatively time-sensitive. It is expected that the response action, once selected, will (together with other actions being taken) provide for elimination/mitigation of the source(s) from the facility, thereby halting this specific source of contamination of the Hudson River and Hudson River sediments. A removal action consisting of the elimination or mitigation of sources of PCB contamination to the Hudson River would be consistent with a long-term remedial action that is selected for the Hudson River PCBs Site.

(iii) **The comprehensiveness of the proposed action**

The recommended EE/CA is not a comprehensive remedy for the Hudson Falls facility, and would not address other contaminated areas at the Hudson Falls Plant site which are currently the subject of an order on consent between NYSDEC and GE. The recommended EE/CA also will not address PCB-contaminated sediments that are being addressed by EPA's Reassessment Remedial Investigation and Feasibility Study for the Hudson River PCBs Superfund Site.

(iv) **The likely cost of the action**

The cost of a NTCRA to address the ongoing release of PCBs to the Hudson River near Hudson Falls may exceed \$6 million. As noted in the February 14, 2000 NTCRA Memorandum, CERCLA Section 104(c)(1) and 40 CFR § 300.415(b)(5) require that fund-financed removal actions (other than removal actions conducted under CERCLA Section 104(b)) be terminated after \$2 million has been

obligated or 12 months have elapsed. These limits (which can be waived) apply only to fund-financed actions, and serve as a fiscal check; they are not found in the statutory definition of "removal" and do not control which actions can be taken as removals. The potential cost of the NTCRA therefore does not preclude the use of NTCRA authority in this case.

The February 14, 2000 NTCRA Memorandum requires Regions to consult with the Office of Emergency and Remedial Response (OERR) prior to signing an EE/CA Approval Memorandum with respect to a non-time critical removal action where the cost of the selected removal action could exceed \$6 million. The Region has consulted with the Director of OERR regarding this proposed EE/CA. The Director of OERR concurred with EPA's proposed EE/CA in a November 22, 2000 Memorandum.

Therefore, based on the above facts, an EE/CA is appropriate to analyze the various removal alternatives available for this release.

IV. Endangerment Determination

Actual or threatened releases of hazardous substances from the vicinity of the Hudson Falls facility may present an imminent and substantial endangerment to public health, or welfare, or to the environment. The main threats present are ingestion and direct exposure to PCBs by humans and exposure of aquatic wildlife to PCBs due to releases of PCBs from the contaminated ground water and PCB NAPL from the GE Hudson Falls facility. In addition, the facility currently has an uncontrolled release of VOC and semi-VOC contamination to the Hudson River.

V. Enforcement Actions

General Electric Company is conducting an RI/FS at the facility under an Order on Consent with the NYSDEC. The Order divides the GE Hudson Falls Plant Site into the following Operable Units (OUs).

OU1 - Identified contaminated soils southeast of the manufacturing buildings at the site - Record of Decision signed 3/29/93

OU2A - Overburden soils

OU2B - Overburden ground water

OU2C - Ground water within the Snake Hill Shale above an elevation of approximately 80 feet National Geodetic Vertical Datum of 1929 (NGVD)

OU2D - Ground water within the Snake Hill Shale, the Glens Falls Limestone, and the Isle la Motte Limestone below an elevation of approximately 80 feet NGVD

OU 3 - Contamination of media within property owned by Niagara Mohawk Power Corporation and the Hudson River adjacent to the GE Hudson Falls Plant

EPA expects to offer GE as the potentially responsible party the opportunity to conduct the EE/CA. If GE elects to conduct the EE/CA under an Administrative Order on Consent (AOC), we expect that the AOC will require GE to pay for any oversight costs incurred during the development of the EE/CA.

VI Proposed Project/Oversight and Cost

The proposed EE/CA involves evaluating the effectiveness, implementability, and cost of various cleanup alternatives to address the flow of PCB-contaminated ground water and PCB NAPL as well as other hazardous substances to the Hudson River.

EPA would provide oversight of the responsible party from project inception through completion in the event that GE conducts the EE/CA under an EPA order.

The estimated cost of the EE/CA is \$500,000. Funds expended to prepare the EE/CA are CERCLA § 104(b)(1) funds and are not counted toward the \$2 million statutory limit for removal action. EPA will seek to have GE conduct the EE/CA, and if it elects to, no funding would be required except to monitor GE's performance. The cost of a NTCRA to address discharges of hazardous substances to the Hudson River at Hudson Falls may exceed \$6 million.

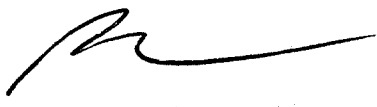
VII Headquarters Consultation

In accordance with the February 14, 2000 NTCRA Memorandum, the Region has consulted with the Director of the Office of Emergency and Remedial Response (OERR) regarding this proposed EE/CA. The Director of OERR concurred with EPA's proposed EE/CA in a November 22, 2000 Memorandum.

VIII Approval/Disapproval

Based upon conditions provided in the Reassessment RI, the 1998 Hydrogeologic Summary Report and the 1999 Workplan, the NCP § 300.415(b) criteria for a removal action are met, and I recommend your approval to develop the proposed EE/CA. A non-time critical removal action is appropriate because any threats to human health and the environment are from long-term exposure to PCB contamination in fish. Therefore, based on the above facts, a planning period of more than six months exists prior to the need to begin removal activities, and an EE/CA is appropriate to analyze the various removal alternatives available to address discharges to the Hudson River at Hudson Falls. The EE/CA will be prepared in conformance with guidelines in "Guidance on Conducting Non-Time Critical Removal Actions Under CERCLA" (EPA/540-R-93-057, August 1993).

Please indicate your approval and authorization of funding for the EE/CA, as per current Delegation of Authority, by signing below.

Approval:  Date: 12-12-00

Disapproval: _____ Date: _____