**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**

Interim Final 2/5/99

**RCRA Corrective Action**
**Environmental Indicator (EI) RCRIS code (CA725)**

**Current Human Exposures Under Control**

**Facility Name:** **Niagara Mohawk Power Corporation., Seventh North Service Center**
**Facility Address:** **7437 Henry Clay Boulevard, Liverpool, NY 13088**
**Facility EPA ID #:** **NYD000730382**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

**__X__** If yes - check here and continue with #2 below.

**_____** If no - re-evaluate existing data, or

**_____** if data are not available skip to #6 and enter"IN" (more information needed) status code.

## BACKGROUND

### Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

### Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

### Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

| | Yes | No | ? | Rationale / Key Contaminants |
|---|---|---|---|---|
| Groundwater | _X_ | ___ | ___ | |
| Air (indoors)[2] | ___ | _X_ | ___ | |
| Surface Soil (e.g., <2 ft) | _X_ | ___ | ___ | |
| Surface Water | _X_ | ___ | ___ | _____ |
| Sediment | _X_ | ___ | ___ | |
| Subsurf. Soil (e.g., >2 ft) | _X_ | ___ | ___ | |
| Air (outdoors) | ___ | _X_ | ___ | _____ |

_____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

__X___ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation. ***(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)***

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

**Site History**

The Seventh North Service Center is located on an approximately 119 acre parcel of property located in the Town of Clay, Onondaga County, New York. The facility is located in an industrially-zoned area and is bordered to the north and south by industrial/commercial facilities. The facility is bordered to the west by a railroad right-of-way and to the east by Henry Clay Boulevard. The area located across Henry Clay Boulevard from the facility is utilized for residential apartments and commercial use. The geographic location of the Seventh North Service Center is shown on the site location map presented as **Figure 1.** The general layout of the Seventh North Service Center is presented on **Figure 2**.

The Seventh North Service Center was constructed beginning in the late 1950's and consists of the following buildings:

A garage and storage building that contains a vehicle maintenance and storage facility and a warehouse which serves as the main supply depot for NMPC's Central Operating Division;

A meter and test shop building that contains a gas meter shop, an electric meter shop, a transformer shop and a New York State Department of Health approved analytical laboratory (the System Chemical Laboratory);

A hazardous waste management building; and

An administrative (EMS) building that was constructed in the mid-1980s and is used for monitoring and control of NMPC's electrical operating system.

The facility also includes two outdoor electrical substations (the Seventh North Substation and the Woodard Substation) and several acres of parking and outdoor equipment storage areas.

***RCRA Selection of the Final Corrective Measures to Address Contamination***

The New York State Department of Environmental Conservation **(NYSDEC)** determined that hazardous wastes or hazardous constituents were released into the environment at the Niagara Mohawk Power Corporation's **(NMPC)** Seventh North Service Center, located in the Town of Clay, Onondaga County, New York. As required by NMPC's

6NYCRR Part 373 Hazardous Waste Management Permit (Permit No. 7-3124/00001-0 dated June 1, 1994), the company has completed an investigation of the releases and has determined that the releases resulted from past waste management practices. The Department determined that the contamination could pose a threat to human health and the environment and that corrective measures were needed to mitigate that threat.

***RCRA Facility Investigations***

Beginning in 1993, NMPC conducted a series of investigations at the facility. The purpose of these investigations was to determine the presence, nature, and extent of hazardous waste or constituents released into the environment. In addition, investigation and sampling took place to determine if there was a continuing source of contamination. Hundreds of samples of soils, sediments, surface water, groundwater and aquatic organisms were collected and analyzed. The following is a summary of investigations conducted at the NMPC Seventh North Service Center:

Drainage structure and piping investigation;
Soil investigation;
Sediment investigation;
Surface water investigation;
Groundwater investigation;
Biota investigation; and
Additional soil investigation at the line training area.

The following Table summarizes the areas and media which have been impacted by releases of hazardous constituents at the facility:

**AREAS IMPACTED at the NMPC FACILITY**

| Location | Type of Contaminants | Media Impacted |
|---|---|---|
| **On-site Drainage Ditches in Sediments** | PCB's (from non-detect to 4,000 ppm), Metals (from <1 to ppm of Cr, Hg, Pb) Semi-volatile Organics (from non-detect to 6,400 ppm) | Sediment and Aquatic Organisms |
| **Site-Wide Storm/Industrial Sewer System Debris** | PCB's , (from non-detect to 130 ppm), Metals, (from <1 to 700 ppm for Cr), Volatile and Semi-volatile Organics (from non-detect to 3,800 ppm). | Sediment, Soil and Groundwater |
| **Acid Crock/Electric Meter Shop Soils** | PCB's, (from non-detect to 480 ppm), Metals (up to 20 ppm). | Soil and Sediment |

***Groundwater Investigation***

The groundwater investigation consisted of installing and developing 13 groundwater monitoring wells, collecting groundwater samples, and conducting hydraulic conductivity testing. Ten groundwater monitoring wells were installed at the site during the RFI. Five of the groundwater monitoring wells are located adjacent to the site-wide storm/industrial sewer system, two of the monitoring wells are located in the vicinity of the electric meter shop acid crock, two of the groundwater monitoring wells are located hydraulically down gradient of the facility, and one of the groundwater monitoring wells is located hydraulically up gradient of the facility. Based on available information reviewed by NMPC, there is no industrial or residential use of groundwater in the vicinity of the facility. A comparison of the groundwater analytical results with the NYSDEC groundwater quality standards/guidance values[1] is presented below: See Tables 1-3 which identifies Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds

[1] Water Quality Regulation for Surface and Groundwaters, 6NYCRR Part 703

(SVOCs), Polychlorinated biphenyls (PCBs) and Inorganic (TAL) compounds in on-site groundwater monitoring wells.

PCBs were not detected above laboratory detection limits in any of the groundwater samples collected.

1,1-dichloroethane and 1,1,1-trichloroethane were detected in groundwater samples collected during July 1995 and November 1995 from one groundwater monitoring well (MW-5) at concentrations above the Class GA groundwater quality standard. No other VOCs were detected in the groundwater samples at concentrations above the NYSDEC Class GA groundwater quality standards/guidance values.

Detected concentrations of SVOCs in the groundwater samples did not exceed groundwater quality standards/guidance values.

Inorganic constituents, including arsenic, barium, chromium, lead, manganese, selenium, sodium, thallium, and zinc, were detected in five of the groundwater samples, including the background well, at concentrations exceeding the 6NYCRR Part 703 Class GA groundwater quality standards and guidance values.

***Interim Corrective Measures (ICM)***

During the course of the site investigation, the NMPC implemented Interim Corrective Measures (ICM) to immediately address the potential spread of contamination. As a result of these actions, the NYSDEC believes that potential sources of contamination at the facility have been shut off and most residual contaminants removed. The NYSDEC has determined that the ICMs are protective of human health and the environment and should serve as part of the Final Corrective Measures for the site.

***Selection of the Final Corrective Measures to Address Contamination***

In July 1997, the NYSDEC selected a proposed Final Corrective Measures for the NMPC Seventh North Service Center and determined that the proposed remedy will be protective of human health and the environment. Implementation of the remedy began after public notice and response to any public comments after the comment period ended.

***Final Corrective Measures for the Site***

The Final Corrective Measures were implemented in the summer of 1998, which included the remediation of an approximately 2.5-acre on-site Federal Jurisdictional Wetland area. This wetland area consisted of a large drainage swale impacted by PCBs, metals and organic hazardous constituents. Concentrations of these contaminants in the swale represented a potential threat to human health and the environment; however, the likelihood of human exposure to those contaminants was minimal. The contaminants also represented a threat to aquatic organisms living within this on-site drainage swale. The Final Corrective Measure for the on-site drainage swale was excavation and off-site disposal of the contaminated sediments. Completion of this action is protective to both humans and resident aquatic organisms. The Final Corrective Measures and the remedial goals for the Seventh North Service Center are summarized below:

**FINAL CORRECTIVE MEASURES**
**AND REMEDIAL GOALS**

| Location | Goal and Type of Remediation to be Performed |
|---|---|
| **On-site Drainage Ditches**. (Final Corrective Measures) | **Excavated Contaminated Sediments Located Within the Boundary of an On-site Federal Wetland Area.** Approximately a 2.5-acre portion (10,000 cubic yards of sediment) was excavated from the on-site Federal Jurisdictional Wetland area located along the western property. Removal of contaminated sediments reduced bio-availability and accumulation of contaminants in aquatic organisms residing in this area. |
| **Site-Wide Storm/Industrial Sewer System** (Completed as an Interim Corrective Measure) | **Removed Contaminated Sediments/Debris to Prevent Discharge to On-site Drainage Ditches.** This system was the primary source and pathway of contamination to the on-site drainage ditches. Removal of contaminated sediment/debris from drainage structures and piping associated with the storm sewer system was accomplished by hydroflushing the drainage structures and piping. This will prevent future deposition of contaminated sediments. |
| **Acid Crock/ Electric Meter Shop** (Completed as an Interim Corrective Measure) | **Excavate and Dispose of Contaminated Soils.** Source of this contamination was an on-site laboratory. Removal of contaminated sediment and demolishing the former acid crock and associated piping completed; excavation of impacted soil in the area located outside the electric meter shop building completed. |
| **Groundwater Contamination** | Monitored natural attenuation. |

***Post-Remedial Monitoring***

Because the magnitude and extent of groundwater contamination was limited, active remediation of the groundwater plume was not required. The NMPC continues to perform long-term monitoring of the groundwater, storm sewers and aquatic biota at the site to verify that the remedial criteria have been achieved. The NYSDEC will continue to evaluate the monitoring data and any other available data to determine if additional investigative or remedial activities are warranted. In addition, the NMPC will provide deed notifications to inform future land owners of the presence of residual contamination and has a financial assurance mechanism to cover the costs of the post-remedial activities.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

| | Potential **Human Receptors** (Under Current Conditions) | | | | | | |
|---|---|---|---|---|---|---|---|
| **"Contaminated" Media** | Residents | Workers | Day-Care | Construction | Trespassers | Recreation | Food[3] |
| Groundwater | No | No | No | No | No | No | No |
| Air (indoors) | No | No | No | No | No | No | No |
| Soil (surface, e.g., <2 ft) | No | No | No | No | No | No | No |
| Surface Water | No | No | No | No | No | No | No |
| Sediment | No | No | No | No | No | No | No |
| Soil (subsurface e.g., >2 ft) | No | No | No | No | No | No | No |
| Air (outdoors) | No | No | No | No | No | No | No |

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

__**X**___ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

**Rationale and Reference(s):**

***Focused Corrective Measures Study Report,*** January 1997, prepared by Blasland, Bouck & Lee, Inc.
***Interim Corrective Measures Summary Report,*** July 1997, prepared by Blasland, Bouck & Lee, Inc.
***Final Statement of Basis,*** July 1997, prepared by the New York State Department of Environmental Conservation, Division of Solid & Hazardous Materials

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4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

___ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

___ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment). (For groundwater and soil pathways

___ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

___ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_**X**_ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Niagara Mohawk Corp., Seventh North Service Center** facility, EPA ID # **NYD000730382**, located in the **Town of Clay, Liverpool, NY** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by (signature) Date 9/29/99
Timothy I. DiGiulio, P.E.
Environmental Engineer 2

Supervisor (signature) Date 9/30/99
Paul J. Merges, Ph.D.
Director, Bureau of Radiation & Hazardous Site Management
NYSDEC

Locations where References may be found:

NYSDEC

Division of Solid and Hazardous Materials
50 Wolf Road
Albany NY 12233

Contact telephone and e-mail numbers
Timothy I. DiGiulio, P.E.
(518) 457-9253
txdigiul@gw.dec.state.ny.us

**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**