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KEYNOTE SPEECH

MTA New York City Transit Environmental Sustainability Accomplishments and Best Practices

Thomas Abdallah, PE, LEED AP

Chief Environmental Engineer, NYCT/MTA

Abstract

NYCT's Department of Capital Program Management (CPM), which organizes its efforts under the structure of ISO 14001 certified Environmental Management System (EMS) since 1999, incorporates environmentally sustainable elements in all of its design and construction projects. These sustainability initiatives are included in order to maximize energy efficiency, improve indoor environment, use recycled and reusable materials, achieve waste reduction by diverting construction and demolition debris from landfills, prevent pollution and conserve water and natural resources.

NYCT/CPM's work continues to receive very positive attention through such CPM accomplishments as Stillwell Terminal Photovoltaic Roof, LEED Certified Corona Maintenance Shop, the Green Roof of 180th Street Signal Crew Quarters, as well as future projects such as the Mother Clara Hale Bus Depot and Bus Command Center, in addition to mitigation measures due to climate change.

Biography

Thomas Abdallah, P.E. LEED AP, is the Chief Environmental Engineer for the Capital Program Management Department (CPM) of MTA New York City Transit (NYCT). He holds a B.S. in Chemical Engineering from Rutgers University. He is both a Professional Engineer and a LEED® Accredited Professional. Thomas has been with NYCT since 1987s and is MTA NYCT's prime representative on sustainability issues. He has extensive experience with all areas of the environmental discipline including the Energy Efficiency, Waste Management, Air & Water Pollution Prevention, Noise and Vibration and Sustainable or Green Design. He is also directly responsible for his department's ISO 14001 certified Environmental Management System that has been certified since 1999. As the Chief Environmental Engineer since November 2004, Thomas provides expert environmental engineering services to MTA NYCT Capital Program Management Department (CPM) and ensures that all construction projects meet the environmental requirements of all Federal, State and Local regulations.

Thomas Abdallah presented at the New York Academy of Sciences and has lectured at Columbia University, Cooper Union, Harvard Graduate School of Design, Rutgers University, City College, Medgar Evers College, College of Westchester and Long Island University. He has appeared in numerous television programs outlining NYCT's sustainability efforts, including, Sundance Channel's Big Ideas for a Small Planet, Discovery's Science Channel City 2.0 and PBS Going Green New York, and a short film documentary "Postcards from the Future" which detailed Hurricane Sandy's impact on the MTA New York City Transit system.



INVITED SPEECH

Environmental Regulations Applicable for New Construction Projects: Case Study of the Newtown Creek Wastewater Treatment Plant Upgrade

Atiqur Rahman, PE, LSRP

Senior Environmental Engineer, NYSDEC

Abstract

The Newtown Creek WPCP (Plant) was built in 1967 to treat 310 MGD of wastewater, using a modified aeration process without primary settling tanks. The plant is located at 301 Greenpoint Avenue on a 53 acre site adjacent to Newtown Creek in Brooklyn, New York City. The plant treats wastewater from a combined sewer service area of approximately 25.4 square miles in parts of Brooklyn, Queens and Manhattan. The **Clean Water Act** required the plant to increase its existing treatment performance which is percentage removal of Biochemical Oxygen Demand (BOD-60%) and Total Suspended Solids (TSS-70%) to "Secondary Treatment Standards" (85% removal) by 1988, an extension from 1977. After two amendments (1995 & 2002) to the 1988 Consent Judgment, and the submittal of five Facility Plans & Updates (1980, 1989, 1995, 1998, 2002), the New York City Department of Environmental Protection (DEP) finally committed to upgrading the plant to meet "Secondary Treatment Standards" by 12/31/2007 and to complete the construction of the plant upgrade by 7/4/2013. Construction at the plant started in 2000. There are ten construction contracts required to fulfill the terms of the Newtown Order. Newtown Creek WWTP achieved secondary treatment standards by 7/31/2011. All construction contracts were completed by September 30, 2013. The cost of the upgrade initially planned for \$2.5 billion is reached at \$4 billion after the completion of all contracts.

Biography

Over 16 years of professional experience as an environmental, geotechnical and civil engineer. Mr. Rahman is presently working in NYSDEC as Senior Environmental Engineer since 2004. He is working as an Environmental monitor for the upgrade of Newtown Creek Wastewater Treatment Plant, (\$4 Billion project, 310 MGD capacity), largest plant in the New York state. His responsibility includes regulatory compliance of the plant's process during the upgrade, construction milestone monitoring, review of construction design documents, specifications, progress reports, process modification, SPDES Permit, General Storm water Discharge Permit, Groundwater Dewatering and Water Discharge Permit, participation in Consent Order meetings to discuss the progress of all Newtown contracts at various stages of planning, funding, design, construction and operation. Prior to Newtown Monitor, Mr. Rahman was involved in conducting multi-media compliance inspections for various NY City agencies (NYCDOT, NYCDEP, MTA), power plants, solid waste facilities, recycling facilities.

As an environmental consultant, Mr. Rahman has directed and contributed to numerous design and construction engineering projects and pioneered the development of several innovative systems for use in the following areas: site investigation, environmental modeling, Brownfield redevelopment, beneficial reuse programs for contaminated materials. Mr. Rahman has performed remedial design, operation and maintenance (O&M) and provided construction management of remediation projects involving pump and treat systems; chemical oxidation; monitored natural attenuation; excavations of hazardous soils; removal, replacement and in-place closure of underground and aboveground storage tanks and remedial containment system.

As an research assistant at NJIT, Mr. Rahman worked in the development of a patented Soil Remediation technology known as '*Pneumatic Fracturing*'. Prepared research report of the laboratory and Pilot study on the enhanced of Pneumatic fracturing process with in-situ bioremediation for EPA.



INVITED SPEECH

Landfill Gas Collection and Control System—Regulatory Review and Compliance Strategies

Shaikh A. Tayeb, PhD, PE, BCEE

Program Manager, Green Environmental Management System, US Department of Veterans Affairs, VAMC, Delaware

Abstract

LFG is produced by landfills naturally, for relatively long time, although the rate at which it is produced depends mainly on the temperature, moisture, and type of wastes contained in the landfill. Two main components of LFG are CH_4 and CO_2 . CH_4 is a very potent greenhouse gas, over 21 times stronger than CO_2 .

Each landfill has numerous cells from which the gas is collected. A typical LFG collection system is composed of the extraction well in the cell, a condensate collection and treatment system, and a compressor or blower to pull the gas from the collection well. The landfill gas is then used for energy or flared to control odor. While burning on power generation equipment or flaring it, LFG can create concerns of various pollutions. The facilities must secure permits as required by numerous federal and state regulations.

A typical large active municipal solid waste landfill is subject to various monitoring and records keeping requirements, outlined by Subpart WWW of 40 CFR Part 60. In most part, states have adopted these federal requirements by reference.

Biography

Shaikh A. Tayeb, PhD, PE, BCEE, Program Manager, Green Environmental Management System (GEMS), is currently employed by the US Department of Veterans Affairs at VA Medical Center (VAMC), Wilmington, Delaware. He has over 18 years of environmental engineering work experience with private, city, state and government agencies. Tayeb holds a PhD in Chemical Engineering from Moscow Technological Institute of Light Industry and a MS in Environmental Technology from New York Institute of Technology. He manages the GEMS program which includes environmental permitting and compliance, recycling, municipal solid and medical wastes, energy reduction, green purchase, requirements under National Environmental Policy Act (NEPA) and ISO 14001.

Prior to his employment with VAMC, Tayeb worked over 11 years with the Delaware Department of Natural Resources and Environmental Control (DNREC). He prepared and recommended Title V and various source category air permits including landfill gas collection and control system, power plants and electroplating. During his employment with DNREC, Tayeb conducted numerous compliance inspections and completed enforcement actions as per the state and EPA regulations and guidelines. In recognition to his contribution to various landfill projects, Tayeb received an Outstanding Engineer award by the Division of Air Quality, DNREC. He served as a subject matter expert for the Department.

In 90s, Tayeb worked as a graduate intern for the New York City Department of Sanitation and the Department of Environmental Protection. Tayeb is a registered professional engineer in multiple states including Delaware, Maryland and Virginia. He is a Board Certified Environmental Engineer (BCEE) by the American Academy of Environmental Engineers. Tayeb published numerous articles on environmental engineering in professional journals.

