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Process Safety Management

City of New York Water Supply Case Study - Veritatis Advisors, Don Macdonald

Largely invisible – but essential – is New York City’s water supply system, stretching across 125 miles and delivering over one billion gallons of drinking water to nine million people.

New York City’s water supply system, one of the largest, largely unfiltered municipal water supply systems on the planet. The system, which relies on mountain water flowing into upstate reservoirs, is delivered to the city through an astounding network of tunnels and aqueducts.



Until roughly the 1950s, New York was experiencing really tremendous growth. The consolidation of the city in 1898 was an important part of that story. The water system developed in tandem with that population growth. The City expanded the Croton system until they got virtually every drop that was available in 1911.

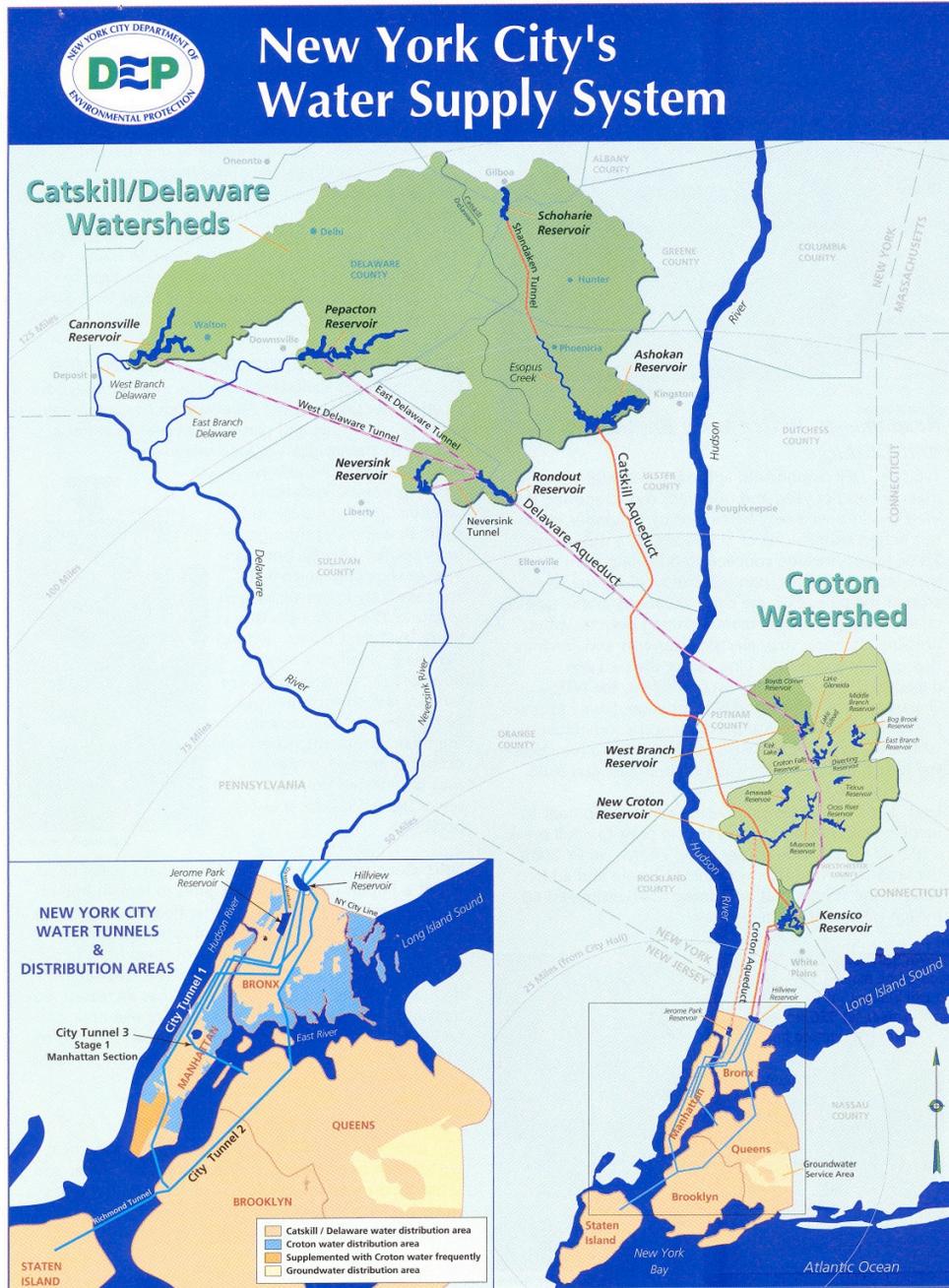
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New York City is the economic engine of the state. Through the democratic system, through the legislature, New York [City] is able to secure rights to take water from the Catskills. They had built all of these other reservoirs.





New York City DEP uses chlorine to meet the New York State Sanitary Code and federal Safe Drinking Water Act disinfection requirements. Kensico is one of the locations where some of the City's water is treated with chlorine.

New York City DEP is committed to protecting the public, its employees, and the environment from any accidental releases of hazardous materials used at its facilities. We have implemented safety, environmental protection, and risk management programs to prevent hazardous materials releases.

If there is an accidental release, we will immediately notify the DEP Police East view Command Center to mobilize DEP's emergency response team to minimize the effect of the release and notify the public of any actions necessary to ensure public protection, through county emergency management agencies.

Accidental Release Prevention Steps

DEP is committed to public safety, personnel safety, continued reliable operation and regulatory compliance. Based on this commitment, an individual, designated as the RMP Responsible Manager, has assumed overall responsibility for the development and implementation of the Risk Management Program.

The RMP Responsible Manager has also clearly defined accountability and responsibility for each of the prevention program elements to meet both EPA and OSHA Process Safety Management requirements.

To ensure a release scenario does not occur, the NYC DEP maintains a release prevention program with the primary focus of protecting the public and plant employees from the hazards associated with an accident or release involving chlorine.



Veritatis Advisors (At the Time working on behalf of ARCADIS) executed the multifaceted process safety/HAZOP/PHMP program includes the use of:

- Chlorine detectors and alarms to rapidly alert operators to any problems;
- Process Safety Information to document the safe process design;
- Process Hazards Analyses to evaluate the chemical and process hazards;
- Operating Procedures to ensure that the system is operated safely;
- Maintenance, inspection and testing to ensure that the system is maintained according to applicable standards and manufacturer's recommendations;
- Training, hot work permits, contractor safety and employee participation programs to ensure that all employees and contractors working on and around the processes are aware of the hazards, can perform their job duties safely and know the actions to be taken in an emergency;
- Management of Change and Pre-startup Safety Reviews to ensure that changes are documented, analyzed and kept within the design basis;
- Incident Investigation procedure to investigate each incident and "near misses" to determine root causes and make needed safety improvements; and,

Periodic compliance audits to ensure that our programs working as they should to protect both the public and employees.



Five-Year Accident History

Within the past five years, the Kensico Facility has not had accidental releases that resulted in injuries or property damage. The plant has maintained an excellent safety record throughout its operating history.

Emergency Response

In the event that a chlorine release does occur, the Kensico Facility has an emergency response program that coordinates emergency response with the Fire Department. If such a release did occur, plant personnel would contact the DEP Police East view Command Center who would dispatch DEP's Emergency Response Team to the site to handle the chlorine release. The East view Command Center would also notify local emergency personnel to support DEP's emergency response team.

Maintaining A Safe Operation

The NYC DEP continually works to safely manage the hazards of chlorine to protect the community we serve and employees. The Risk Management Program will be maintained to reduce the risk of accidental releases and each year we will conduct training, review procedures, maintain the equipment and follow safe work practices. Periodically, we will audit our program, review our Process Hazard Analysis and coordinate with the community emergency response organization.

NYC

Environmental
Protection

Michael R. Bloomberg, Mayor
Cas Holloway, Commissioner

New York City 2010 Drinking Water Supply and Quality Report

