

Authorization Criteria for Radiological Liquid Effluents (a)(f)

E-ALARA (b)

Implement economically viable and technically feasible waste minimization, treatment, and pollution prevention opportunities (c)(d).

Waste minimization, treatment, and pollution prevention opportunities exhausted.

Request Discharge Authorization from ESD.

NOTES:
 a. Criteria apply to anthropogenic radionuclides only.
 b. Environmental Effluents are As Low As Reasonably Achievable.
 c. Economically Viable = Cost of waste minimization, treatment, risk management, and pollution prevention opportunities are recovered in three years.
 d. Technically Feasible = Available technology exists for waste minimization, treatment, and Pollution Prevention (e.g., ion exchange, evaporation, and other separation methods).
 e. MDL = Minimum Detection Limit using standard analytical methods, counting time, and volume: i.e., the propagated analytical error would be less than 50% at 2 standard deviations.
 f. These criteria are applicable unless other criteria are negotiated with regulatory agencies (e.g., under the CERCLA process).

Sewage Treatment Plant (STP)

Radionuclide <drinking water standard at source.

Yes

Tritium <50% of the drinking water standard at Outfall 001.

Yes

Tritium < 25% of the drinking water standard at Outfall 001.

No

Generator conducts written critique of the wastewater source to reduce future releases and institutes corrective action.

Unless otherwise noted - If **NO** at any step, the generator must refer the release to the Operations Council for review, considering technical, institutional, and social risk. The Operations Council may refer to the Integration Council for final decision.

No measurable change in Cs-137, Sr-90, concentrations at both the STP influent and at Outfall 1, as compared with levels from 1997 - 1999.*

Yes

No transuranics or other long-lived radionuclides measurable at the source without evaluation of cumulative effects on the Peconic River sediments and/or STP sludge.

Yes

All other radionuclides < MDL (e) at Outfall 1.

Yes

Discharge Approved by the ESD Manager or designee.

Recharge Basins

Plume Management
Including well installation, development, and sampling and groundwater treatment.

Yes

All radionuclides < drinking water standards.

Yes

Other Locations (at Outfall)

Yes

Tritium < 25% of the drinking water standard at outfall.

Yes

All other radionuclide concentrations <10% of the drinking water standard.

Yes

Drinking Water Standards for Common Nuclides	
Tritium	20,000 pCi/L
Be-7	6,000 pCi/L
Na-22	400 pCi/L
Mn-54	300 pCi/L
Co-57	1,000 pCi/L
Co-58	9,000 pCi/L
Co-60	100 pCi/L
Sr-90	8 pCi/L
Cs-137	200 pCi/L
Zn-65	300 pCi/L

*Maximum influent and effluent Sr-90 concentrations were 2.8 and 1.4 pCi/L, respectively. Maximum Cs-137 influent and effluent concentrations were 0.7 and 2.2 pCi/L, respectively. No radionuclides would be released which could result in the dose from Peconic River sediments exceeding 15 mrem per year.