

PART C

TECHNICAL REQUIREMENTS

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C1. INTRODUCTION

C1.1 The project contemplated consists generally of design and construction of Ultraviolet Light (UV) disinfection facilities for disinfection of the secondary effluent from the North End Water Pollution Control Centre (NEWPCC) in a completed, validated and fully functional UV disinfection system. The project includes the supply and validation of the UV disinfection equipment, which is the subject of this Request for Qualifications. The installation of the UV disinfection equipment and the associated mechanical, electrical, instrumentation, and ancillary components will be the subject of a separate contract.

C2. ABBREVIATIONS

ML/d	=	megalitres per day
UVt	=	ultraviolet light transmittance
mJ/cm ²	=	millijoules per square centimetre

C3. DESIGN CRITERIA

- Disinfected effluent standard = 200 MPN/100 mL *E.coli* as monthly geometric mean
- Maximum flow = 380 ML/d
- Average flow = 220 ML/d (approximately)
- Maximum TSS = 30 mg/L
- Average TSS = 21 mg/L
- Minimum UVt = 30%
- Average UVt = 40%
- Dose = 35 mJ/cm² minimum
- Design to be based on bioassay

The above design criteria may be refined and modified prior to issuing the Request for Proposal.

Design shall be for end of lamp life incorporating "aging factor" that is tied to the manufacturer's guaranteed lamp life and present worth costs.

Dose shall be achieved after accounting for absorbance by quartz sleeve.

Automatic in-place mechanical cleaning is required, as a minimum.

A three year warranty will be a requirement of the contract for supply of the equipment.

Plant performance to be verified using "reduction equivalent dose".