



Province of
British Columbia

MINISTRY OF
ENVIRONMENT,
LANDS AND PARKS

BC
Environment
LOWER MAINLAND REGION

BURRARD
Environmental Protection
15326 — 103A Avenue
Surrey, British Columbia
V3R 7A2
Telephone: (604) 582-5200
Facsimile: (604) 584-9751

Date: DEC 29 1995

Our File: PE-07178

REGISTERED MAIL

BRITISH COLUMBIA HYDRO
AND POWER AUTHORITY
333 Dunsmuir Street
Vancouver, British Columbia
V6B 5R3

Dear Permittee:

Enclosed is amended Permit PE-07178 issued under the provisions of the *Waste Management Act*. Your attention is respectfully directed to the conditions of the permit. An annual fee for the permit will be determined in accordance with the Waste Management Permit Fees Regulation.

This permit does not authorize entry upon, crossing over, or use for any purpose of private or crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the permittee. It is also the responsibility of the permittee to ensure that all activities conducted under this permit are carried out with due regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This permit may be appealed by persons who consider themselves aggrieved by this decision in accordance with Part 5 of the *Waste Management Act*. Written notice of intent to appeal must be received by the Regional Waste Manager within twenty-one (21) days.

Administration of this permit will be carried out by staff from our regional office located at 15326 - 103A Avenue, Surrey, British Columbia, V3R 7A2. Plans, data and reports pertinent to the permit are to be submitted to the Regional Waste Manager at this address.

Yours truly,

R. H. Robb
Assistant Regional Waste Manager

Enc.

cc: Environment Canada

British Columbia Hydro and Power Authority
6911 Southpoint Drive
Burnaby BC V3N 4X8



MINISTRY OF ENVIRONMENT,
LANDS AND PARKS

**PERMIT
PE-07178**

Under the Provisions of the Waste Management Act

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
333 Dunsmuir Street
Vancouver, British Columbia
V6B 5R3

is authorized to discharge effluent to Burrard Inlet from Burrard Thermal Generating Plant, located off Bedwell Bay Road, Ioco, British Columbia, and is subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Waste Management Act* and may result in prosecution.

1. AUTHORIZED DISCHARGE

1.1 This subsection applies to the discharge of **STORMWATER FROM A DYKED TANK FARM AREA**. The site reference number for this discharge is 213910.

1.1.1 The maximum authorized rate of discharge is 1 650 cubic metres per day. The authorized discharge period is continuous.

1.1.2 The characteristics of the discharge shall be:

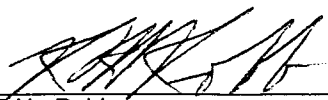
oil and grease, 5.0 mg/L, maximum.

1.1.3 The authorized works are an oil water separator, an outfall, and related appurtenances, approximately located as shown on attached Site Plan A.

1.1.4 The legal description for the location of the facilities from which the discharge originates is Lot 219, Group 1, except part thereof on reference plan 4373 and Lot 1, Plan 18279, New Westminster District PID 012-918-776.

1.1.5 The legal description for the location of the point of discharge is Burrard Inlet, near or adjacent to Lot 219, Group 1, except part thereof on reference plan 4373 and Lot 1, Plan 18279, New Westminster District PID 012-918-776.

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(most recent)


R.H. Robb
Assistant Regional Waste Manager

1.2 This subsection applies to the discharge of **BLOWDOWN FROM THE BOILER SYSTEM AND BACKWASH EFFLUENT FROM THE SAND AND CARBON FILTERS**. The site reference numbers for this discharge are E213911 and E222677.

1.2.1 The maximum authorized rate of discharge is 550 cubic metres per day. The authorized discharge period is continuous.

1.2.2 The characteristics of the discharge shall be:

i) At the end of each of the six boiler blowdown outfalls:

temperature, 32°C, maximum; and

ii) At the outlet of the sand and carbon filters:

total suspended solids (non-filterable residue), 50 mg/L, maximum.

1.2.3 The authorized works are six submerged outfalls, and related appurtenances, approximately located as shown on attached Site Plan A.

1.2.4 The legal descriptions for the location of the facilities from which the discharge originates and the point of discharge are the same as set out in Subsections 1.1.4 and 1.1.5.

1.3 This subsection applies to the discharge of **COOLING WATER FROM THE TURBINES and EFFLUENT FROM THE TURBINE HOUSE SUMPS**. The site reference numbers for this discharge are E218421 and E218698.

1.3.1 The maximum authorized rate of discharge is 1 700 000 cubic metres per day, including a maximum of 3 000 cubic metres per day of effluent from the turbine house sump. The authorized discharge period is continuous.

1.3.2 The characteristics of the discharge shall be:

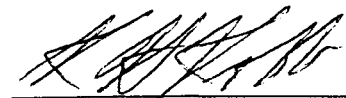
i) from the turbine house sumps, before entering the cooling water discharge stream:

oil and grease, 10 mg/L, maximum; and

ii) at the end of the cooling water outfall:

temperature, 27°C, maximum; and
total residual chlorine, 0.100 mg/L, maximum (until December 31, 1996);
total residual chlorine, 0.020 mg/L, maximum (after December 31, 1996).

1.3.3 The authorized works are a dechlorination system, submerged outfall, and related appurtenances, approximately located as shown on attached Site Plan A. The dechlorination system must be installed and operational prior to any discharge of chlorinated cooling water.



- 1.3.4 The legal descriptions for the location of the facilities from which the discharge originates and the point of discharge are the same as set out in Subsections 1.1.4 and 1.1.5.
- 1.4 This subsection applies to the discharge of effluent from **A WATER TREATMENT PLANT DEMINERALIZER**. The site reference number for this discharge is E213914.
- 1.4.1 The maximum authorized rate of discharge is 72 cubic metres per day. The authorized discharge period is continuous.
- 1.4.2 The characteristics of the discharge shall be:
- pH, 6.5 to 8.5, range.
- 1.4.3 The authorized works are a neutralizing tank, a submerged outfall, and related appurtenances, approximately located as shown on attached Site Plan A.
- 1.4.4 The legal descriptions for the location of the facilities from which the discharge originates and the point of discharge are the same as set out in Subsections 1.1.4 and 1.1.5.

2. GENERAL REQUIREMENTS

2.1 Maintenance of Works

The permittee shall inspect the authorized works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

2.2 Emergency Procedures

In the event of an emergency which prevents compliance with a requirement of this permit, that requirement will be suspended **for such time as the emergency exists** or until otherwise directed by the Regional Waste Manager provided that:

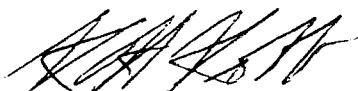
- a. Due diligence was exercised in relation to the process, operation or event which caused the emergency and that the emergency occurred notwithstanding this exercise of due diligence;
- b. The Regional Waste Manager is immediately notified of the emergency; and
- c. The emergency condition is being corrected with due diligence.

Notwithstanding a, b, and c above, the Regional Waste Manager may require the operation to be suspended to protect the environment while the situation is corrected.

2.3 Bypasses

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Regional Waste Manager is obtained and confirmed in writing.

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2.4 Process Modifications

The permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge.

2.5 Oil Separator Residue Disposal

Oil and settled residue removed from the oil separator shall be disposed of to a site and in a manner approved by the Regional Waste Manager.

2.6 Design Plans - Dechlorination Works

Plans and specifications of the dechlorination works authorized in Subsection 1.3 shall be certified by a qualified professional licensed to practice in the Province of British Columbia, and submitted to the Regional Waste Manager by February 29, 1996. A qualified professional must certify that the works have been constructed in accordance with the plans before discharge commences. The dechlorination system must be installed and operational prior to any discharge of chlorinated cooling water.

2.7 Chlorination/Dechlorination Optimization and Operating Procedures

The permittee shall utilize the period from the date of the most recent amendment of this permit to December 31, 1996, to implement and optimize the performance of the dechlorination system and targeted semi-continuous chlorination for control of biofouling. The permittee shall submit an optimization study work plan and schedule to the Regional Waste Manager, for approval, by February 29, 1996.

A report shall be prepared which presents the results of the optimization study. The report shall be submitted to the Regional Waste Manager by December 31, 1996. The permittee shall also submit a plan which details the operating procedures for the targeted semi-continuous chlorination system (to ensure minimum chlorine-use) and the dechlorination system (to ensure minimum total residual chlorine and dechlorination chemicals in the discharge). The operating procedures plan shall be submitted by December 31, 1996, for approval by the Regional Waste Manager. The permittee shall implement and maintain the approved operating procedures plan.

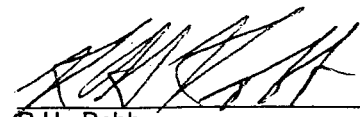
2.8 Environmental Impact Study

The permittee shall prepare and submit an environmental impact study plan which describes work which will be conducted for the assessment of the impact on water quality and biological communities of the cooling water discharge in the receiving environment. The proposed plan shall be submitted by April 30, 1996, for approval by the Regional Waste Manager. The permittee shall conduct the approved environmental impact study.

2.9 Assessment of Diffuser Options Report

The Regional Waste Manager may require the permittee to prepare and submit a report which assesses diffuser options to enhance mixing and heat dissipation of the cooling water discharge in the receiving environment.

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Assistant Regional Waste Manager

3. MONITORING AND REPORTING REQUIREMENTS

The following monitoring program shall be undertaken by the permittee. The Regional Waste Manager may modify the monitoring program based on the results submitted as well as any other data obtained by Environmental Protection.

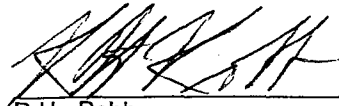
3.1 Discharge Monitoring

3.1.1 Sampling Sites

Sampling sites shall be located as follows (as shown on Site Plan A):

<u>Sample Site No.</u>	<u>Site Ref. No.</u>	<u>Location</u>
00	E213915	Cooling water intake
01	E213910	Outlet of the oil separator
02	E213911	End of each of the 6 boiler blowdown outfalls
02-1	E222677	Inplant outlet of the sand carbon filters
03	E218421	End of the cooling water outfall
05	E213914	Outlet of the neutralization tank
06	E218698	Inplant turbine house sump effluent before entering cooling water discharge

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3.1.2 Grab Sampling

The permittee shall install suitable sampling facilities, obtain and analyse the samples according to the following schedule:

Parameter	Sample Site No.						
	00	01	02	02-1	03	05	06
pH	-	D*	-	-	-	D	-
temperature (°C)	-	-	M	-	D	-	-
total suspended solids (mg/L)	-	-	-	M	-	-	-
oil and grease (mg/L)	M	Q	-	-	-	-	M
total ammonia nitrogen (mg/L)	-	D*	-	-	-	-	-
total residual chlorine (mg/L)	-	-	-	-	D*	-	-

where: Q=Quarterly

M=Monthly

D=Daily

D*= Until December 31, 1996, ammonia and pH analysis is required on every weekday that discharge occurs, and chlorine analysis is required on every weekday that chlorination occurs while chlorination is occurring. After December 31, 1996, chlorine analysis is required daily on every day that chlorination occurs while chlorination is occurring, and ammonia and pH analysis is required daily on every day that discharge occurs.

Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

3.1.3 Flow Measurement


Measure or estimate daily the volume of the cooling water discharge authorized by subsection 1.3. Measure or estimate monthly the volumes of the discharges authorized by subsection 1.1, 1.2, and 1.4, over a 24-hour period from each outfall.

3.2 Monitoring Procedures

3.2.1 Sampling and Flow Measurement

Sampling and flow measurement shall be carried out in accordance with the procedures described in "Field Criteria for Sampling Effluents and Receiving Waters", April 1989, 17 pp., or by suitable alternative procedures as authorized by the Regional Waste Manager.

Copies of the above manual are available from the Environmental Protection Division, Ministry of Environment, Lands and Parks, 777 Broughton Street, Victoria, British Columbia, V8V 1X5, and are also available for inspection at all Environmental Protection Offices.


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3.2.2 Chemical Analyses

Analyses are to be carried out in accordance with procedures described in the latest version of "BRITISH COLUMBIA ENVIRONMENTAL LABORATORY MANUAL for the Analysis of Water, Wastewater, Sediment and Biological Materials (March 1994 Permittee Edition)", or by suitable alternative procedures as authorized by the Regional Waste Manager.

A copy of the above manual may be purchased from the Queens Printer Publications Centre, 2nd Floor, 563 Superior Street, Victoria, British Columbia, V8V 4R6 (1-800-663-6105). A copy of the manual is also available for review at any Environmental Protection Program Office.

3.2.3 Total Residual Chlorine Analysis Performance

The analytical procedures for total residual chlorine analysis of the cooling water discharge authorized by subsection 1.3 shall have a minimum detection level of 20 ppb (0.020 mg/L). The analytical procedures utilized by the permittee shall be supported by a detection level performance study of the procedures. The performance study results and calculated detection levels shall be submitted to the Regional Waste Manager by April 30, 1996. The Regional Waste Manager may require alternative procedures for analysis be utilized or investigated based on the results of the study.

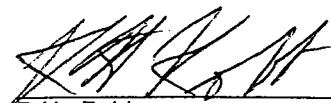
3.2.4 Total Residual Chlorine Continuous Analyzer

The permittee shall investigate and study the use of a continuous analyzer for total residual chlorine analysis of the cooling water discharge authorized by subsection 1.3. A report shall be prepared which presents the results of the study and makes recommendations regarding the applicability of use of a continuous total residual chlorine analyzer. The report shall be submitted to the Regional Waste Manager by December 31, 1996. The Regional Waste Manager may require the use of a continuous analyzer for total chlorine residuals based on the results of the study.

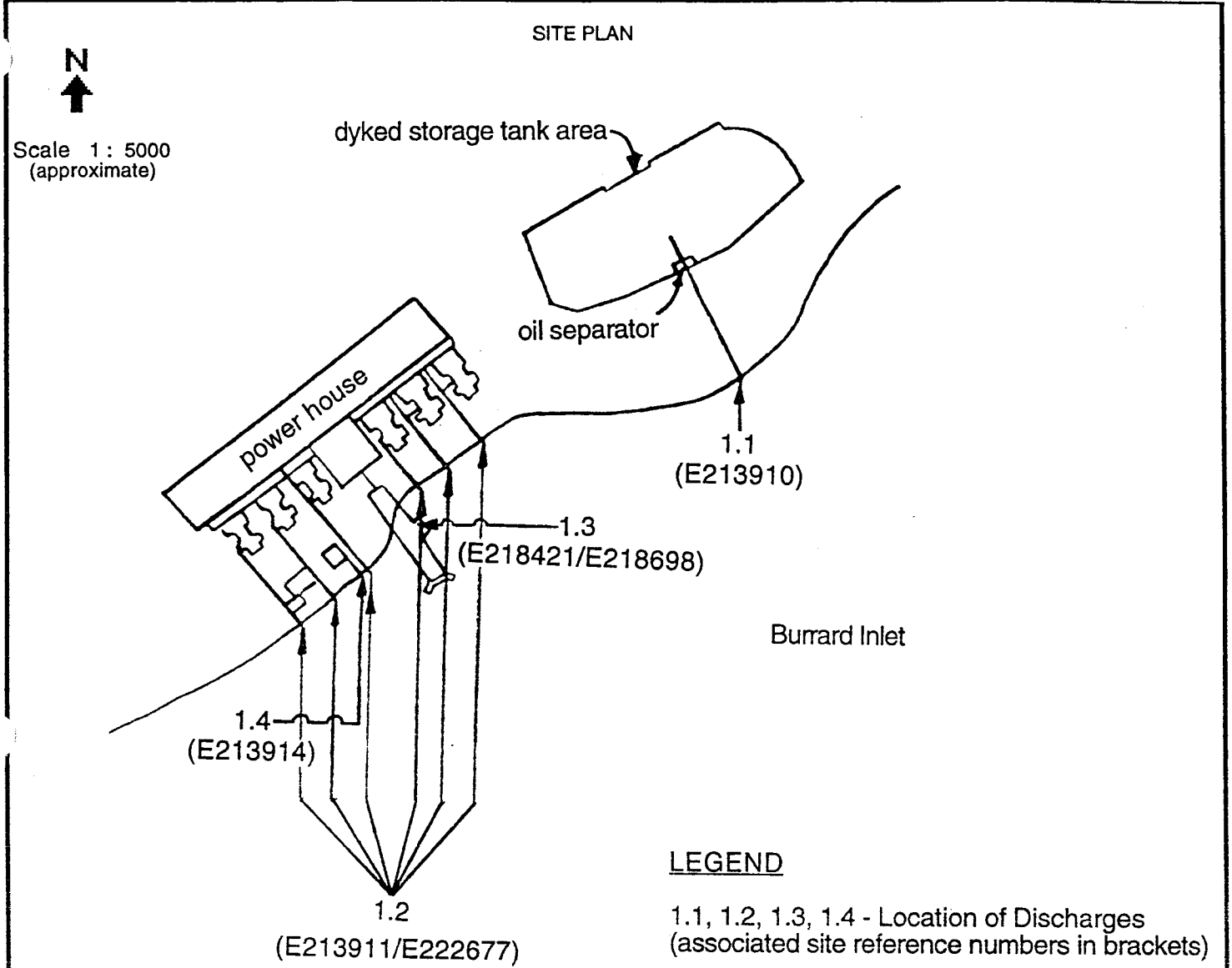
3.3 Reporting

Maintain data of analyses and flow measurements for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the **previous quarter**. During the testing period from May to December 31, 1996, described in subsection 2.7, a status report covering progress and test results shall be submitted on a **monthly** basis. The next reporting period ends **December 31, 1995**. All reports shall be received by the manager within 31 days of the end of the reporting period.

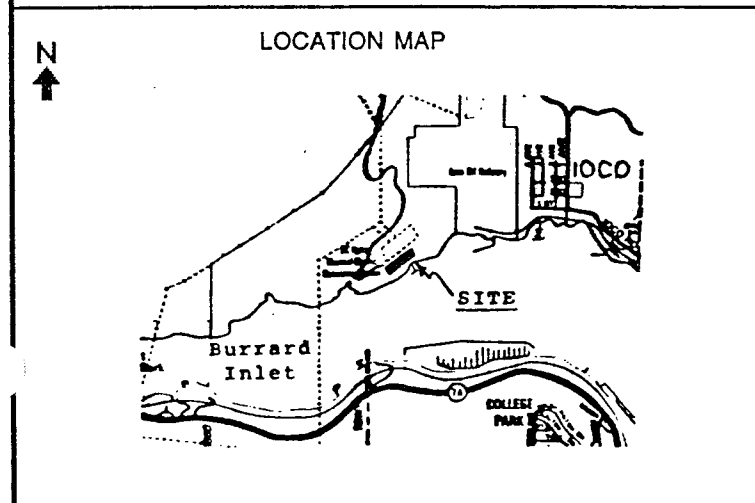
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Assistant Regional Waste Manager



LEGAL DESCRIPTION: Lot 219, Group 1, except part thereof on reference plan 4373 and Lot 1, Plan 18279, New Westminster District PID 012-918-776.



For Office Use Only

Site Plan A

Permit/Approval PE-07178

DEC 29 1995

Date

Assistant Regional Waste Manager