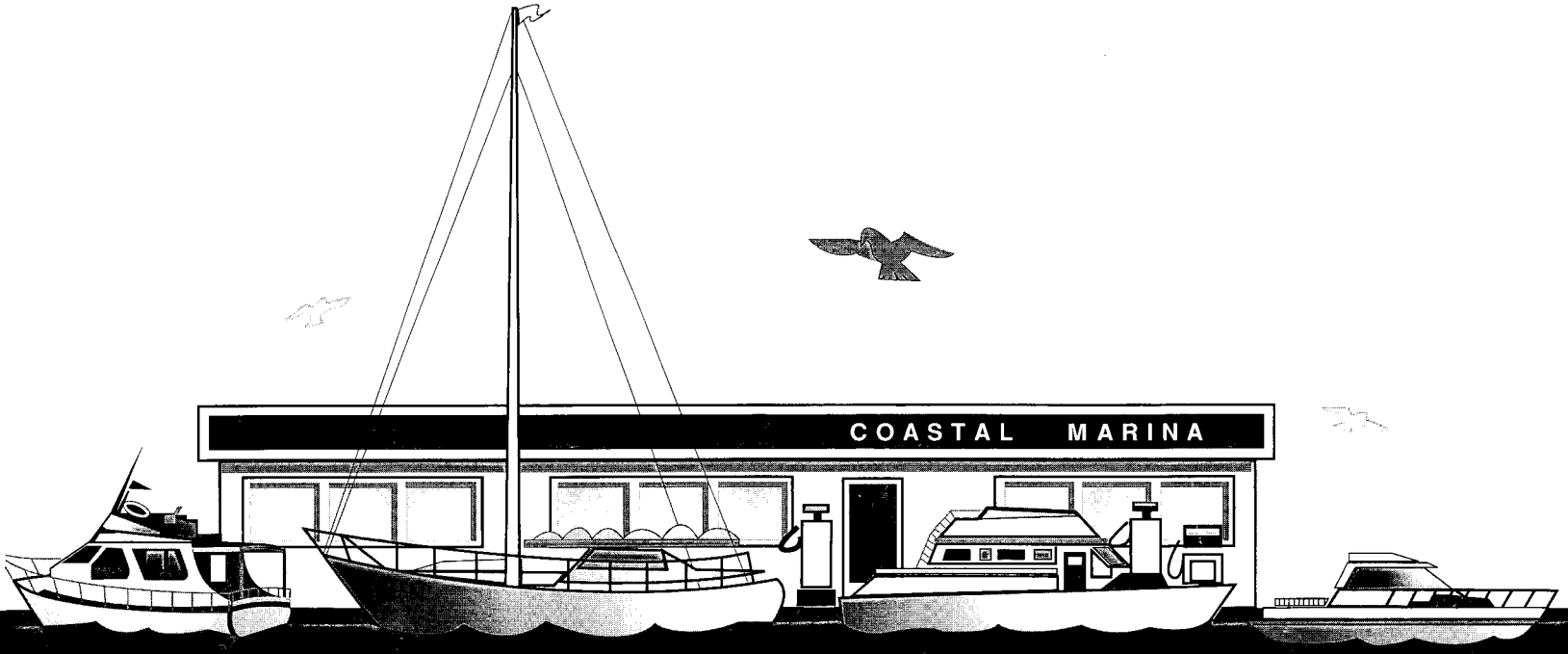
B.C. COASTAL MARINA FACILITY AND OPERATING STANDARDS



B.C. Coastal marina facility and operating standards.

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INTRODUCTION

Purpose of this Manual

This Manual presents the minimum requirements for facility and operating standards based on applicable existing legislation and codes, including Environmental Codes of Practice (ECP). It has been prepared to ensure environmentally sound management of B.C. coastal marinas as agreed by Industry and Government.

This manual is not intended to supersede any Local, Provincial or Federal regulations.

Every marina operator must comply with these guidelines to achieve an acceptable level of environmental protection.

Joint Effort

This Manual is the result of committed joint efforts by the Coastal Marina Operations Task Force which consisted of:

Core Members

- Canadian Petroleum Products Institute (CPPI) representatives from Chevron Canada Limited, Esso Petroleum Canada, Petro-Canada Products and Shell Canada Products Limited
- representatives from Canadian Coast Guard, Environment Canada and B.C. Environment

Associate Members

- representatives from Burrard Clean, Department of Fisheries and Oceans and Vancouver Port Corporation

SECTION 1

COASTAL MARINA FACILITY STANDARDS

GENERAL

The following facility standards are intended to be a minimum to which marina facilities on the coast of British Columbia should comply. These standards are designed to capture from existing Codes the specific facility standards which are applicable.

The applicable Codes which are referred to in this Standard are the current editions of the British Columbia Fire Code (BCFC) and the Canadian Council of Ministers of the Environment (CCME) and Environmental Code of Practice (ECP) for Underground Storage Tank (UST) Systems Containing Petroleum Products, 1989. The current edition of the BCFC incorporates the 1985 edition of the National Fire Code.

As the BCFC and the ECP are updated, it is recommended that the User reference the newer revised edition.

NOTE: CCME was known as the Canadian Council of Resource and Environment Ministers (CCREM) when the 1989 UST ECP was published. They now meet as CCME. Currently in draft form is the "CCME Environmental Code of Practice for Aboveground Storage Tanks (AST) Containing Petroleum Products". This ECP is recommended where applicable.

BASIC REQUIREMENT

As well as the Codes referred to above, all facilities must comply with all other applicable local, Provincial and Federal regulations, (e.g., Provincial Fire Commissioner, Workers' Compensation Board, Canada Shipping Act, Canadian Electrical Code, etc.).

Good installation techniques and practices are vital. Therefore, all facilities must be installed by a Contractor or supervised by a consultant who is knowledgeable and familiar with all applicable documentation, particularly the BCFC and ECPs, and who has submitted drawings for approval to all appropriate Government jurisdictions. No installation may commence until such approval has been given.

SCOPE

The Coastal Marina Facility Standards provided herein have been prepared to assist in the examination and review of facilities used for receiving, storing, handling and dispensing petroleum products at coastal marinas.

These standards are not intended to supersede any local, Provincial or Federal regulations.

Technical assistance is available from the petroleum supplier to supplement these standards and to review any existing or proposed new facilities.

TRUCK UNLOADING AREA

An adequate truck unloading area must be provided for deliveries. This should consist of:

- a level area (less than 2% grade) preferably impermeable, sufficient in size to accommodate the delivery unit; the area should be graded to a safe and impermeable collection point in the case of a spill. The collection system should be either an oil separator or slop tank.
- an unloading area off public property, located such that the truck is not required to back onto or off public property.
- pole mounted light fixture in the immediate vicinity.
- an area free of ignition sources (i.e., open flames, non-explosion proof motors, etc.).
- a facility unloading pump, if provided, must have the control switch located adjacent to the delivery for emergency shut off purposes.

Underground Deliveries - In addition to applicable provisions provided in the CCME UST ECP, coastal marinas must conform to the following:

- Where deliveries are into an underground storage tank, the truck hose to the tank fillstem shall be of a quick "tight-fill" connection; 4" size is preferred.
- The box around the fillstem must contain all spills and drips.
- The fillstem box must be a containment box manufactured for this purpose, OPW #1, EMCO #A1003-001, or equal.

Aboveground Deliveries - In addition to the applicable provisions provided in the CCME AST ECP, coastal marinas must conform to the following:

- Where deliveries are into an aboveground storage tank system, a collection sump is required below the delivery hose connection and a hose drain reservoir, similar to reference drawings (vi) and (vii), see page 1.6.
- The sump is to be weather protected and drained into an underground storage tank for collection.
- This storage tank shall meet the requirements of this standard for underground storage tanks.

MARINE UNLOADING AREA

An adequate marine unloading facility must be provided for deliveries. This should include:

- sufficient depth of water to prevent grounding of marine vessel at any time.
- structures to safely moor the marine vessel.
- safe working area on all sides of unloading connections.
- easy access from the marine vessel to the unloading connections.
- an area free of ignition sources (e.g., open flames, non-explosion proof motors, etc.).

The receiving unloading assembly at the end of the pipeline must be a tight connection, either a bolted flange or a Kamlok coupler. As well, the assembly must include a steel gate valve and steel check valve installed in the pipeline. Below must be a collection system (e.g., metal drip pan, etc.) to contain hose connection drips as required by BCFC Subsection 4.7.7.

Fire extinguishers in accordance with the B.C. Fire Code Subsection 4.7.6 must be provided.

NOTE: Fuel transfer operations must conform to BCFC 4.7.11 and applicable Canadian Coast Guard regulations.

UNDERGROUND STORAGE TANKS (UST)

This section applies to the management of underground storage tanks at coastal marinas. It is based upon the requirements of the BCFC and CCME 1989 ECP for UST. The applicable sections of the code are:

Site Assessment

An environmental site assessment by a competent and knowledgeable person must be undertaken to establish the site sensitivity and therefore the requirements as set out in the ECP. It is likely that all coastal marinas be classified as "A", based on criteria referred to in the ECP.

Design

Tanks must be protected steel or fiberglass type suitable for petroleum products in accordance with the Codes. Double wall tanks or secondary containment must be used at environmentally sensitive sites.

BCFC	*Section 4.3.1.2(1) and Subsection 4.3.9*
ECP	*Sections 4.3 and 4.5*

Installation

Installation of underground tanks is to conform to:

BCFC	*Subsection 4.3.8*
ECP	*Section 4.4*

Vents

Installation of vents and other openings is to conform to:

BCFC	*Subsections 4.3.10 and 4.3.11*
ECP	*Sections 4.6 and 4.7*

Piping and Pumping Systems

The materials for piping, valves and fittings, the location and arrangement of piping, use of valves in piping systems and operating procedures are to conform to:

BCFC	*Section 4.4*
ECP	*Section 4.8*

Double wall pipeline or secondary containment of all underground pipelines are to be used at environmentally sensitive sites.

ABOVEGROUND STORAGE TANKS (AST)

The requirements for aboveground tanks follow the BCFC. Note that the provisions of the draft "CCME ECP for AST Containing Petroleum Products" must be satisfied, once that document is finalized. The applicable section from the BCFC are:

- *Design:* *Subsection 4.3.1*
- *Installation:* *Subsection 4.3.2 with amendments relative to property line distance*
- *Vents & Openings:* *Subsections 4.3.5 and 4.3.6*
- *Piping, Valves & Fittings:* *Sections 4.4 and Subsection 4.7.4*
- *Dykes & Drainage:* *Subsection 4.3.7*

In addition, an aboveground tank installation shall be equipped with an oil/water separator system to handle storm water from the dyked area. Refer to the drawings in the Appendix.

STORAGE, HANDLING AND DISPENSING

The applicable sections for the BCFC, which shall apply to this Standard, are:

Storage & Handling:	*Subsection 4.5.2*
Dispensing Systems:	*Subsections 4.5.3 and 4.6.5.2(2)*
Shutoff Devices:	*Subsection 4.5.4.3*
Delivery Hoses & Nozzles:	*Subsection 4.5.5*
Remote Pumping System:	*Subsection 4.5.6*
Smoking:	*Subsection 4.5.9*
Fire Protection:	*Subsection 4.6.7*

Emergency Response Kit

In addition, an emergency response kit comprised of the minimum following materials and equipment shall be maintained on scene for small spills:

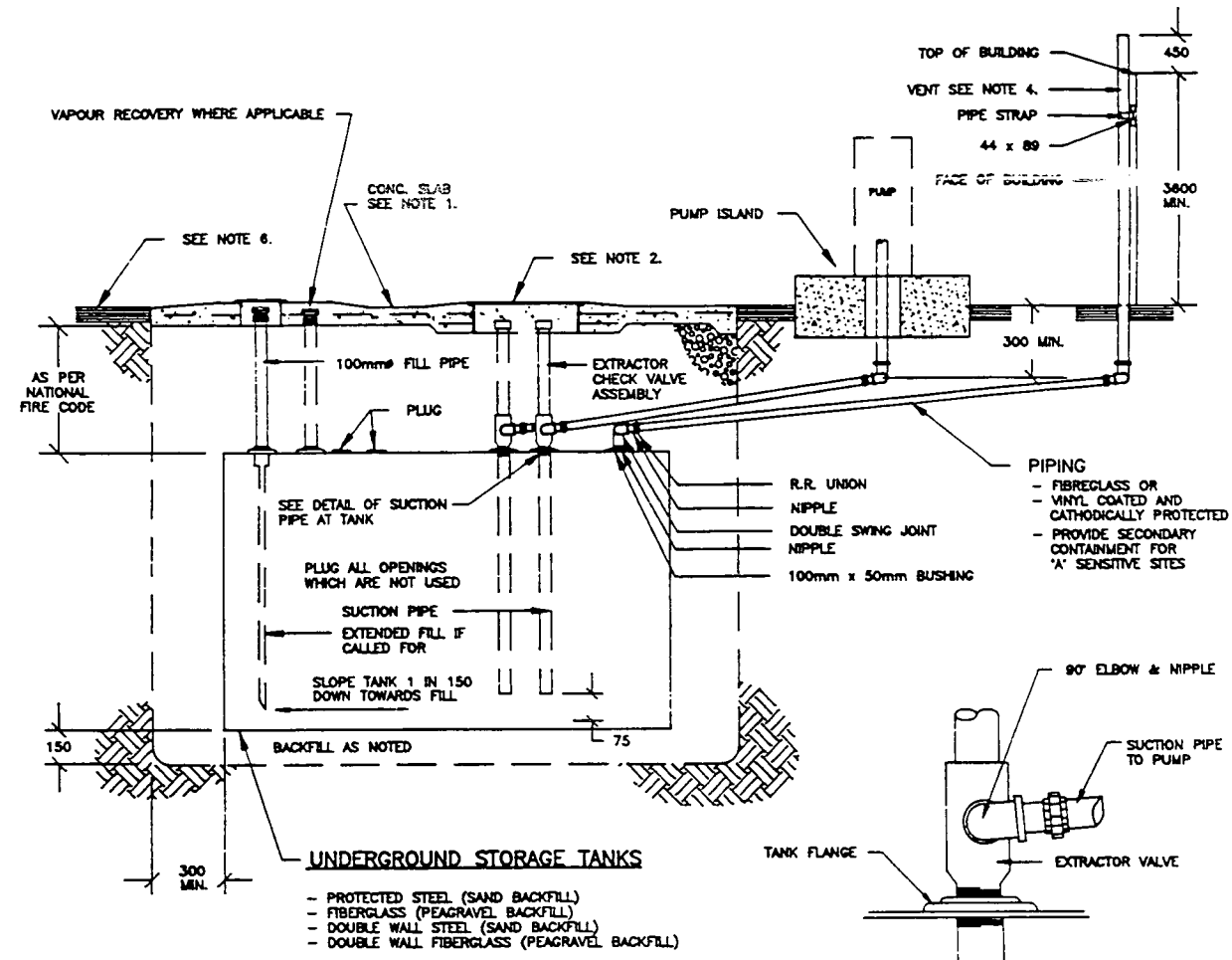
3 bales synthetic absorbent pads	broom
1 50' synthetic absorbent boom	rope
1 first aid kit	pliers/cutter
1 fire extinguisher	screwdrivers
2 shovels	wrenches
1 fork	tool box
2 rakes	hand drill
1 pick	wire mesh
1 mattock	stakes
1 sledge hammer	tie wire
1 axe	rags
1 carpenter's wrecking bar	spray pump
1 crowbar	gas can
2 hammers	trash hand pump with hose
1 flashlight	chain saw (optional)

Plus: Leak containment product such as "Plug-N-Dyke".

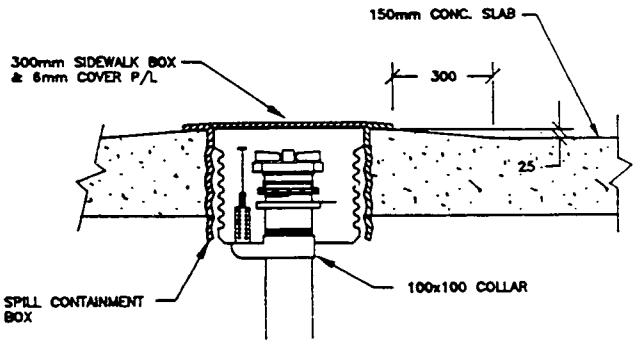
Materials and equipment must be replaced immediately upon use. Cost recovery from the polluter is suggested.

REFERENCE DRAWINGS

The following drawings are general in nature and for reference purposes only. Site plans, additional drawings and specifications may be required by the authorities having jurisdiction.



DETAIL OF SUCTION PIPE AT TANK



NOTES:
1. TANK SLABS 150mm THICK REINF. WITH 150 x 150 x 10 GA. WIRE MESH. SLAB TO EXTEND BEYOND TANK AT LEAST 300mm ON ALL SIDES. BROOM FINISH. ALL EDGES TO BE FORMED AND TROWELLED WITH AN EDGER. CONCRETE TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
2. 250mm X 300mm X 6mm CHKR. P/L COVER & FRAME FOR 2 SUCTIONS. 300mmø SIDEWALK BOX & 6mm COVER FOR SINGLE SUCTION.
3. DOUBLE SWING JOINTS AT ALL RIGHT ANGLE BENDS. SWING JOINTS FROM 2-90° ELLS & 1 NIPPLE.
4. VENTS TO BE NOT LESS THAN 2400mm AWAY FROM ANY WINDOW OR OPENING.
5. ALL TANK INSTALLATIONS TO CONFORM WITH PROVINCIAL FIRE MARSHAL REGULATIONS.
6. REPAIR EXISTING BLACKTOP WHERE BROKEN OR DAMAGED. USE HOT ASPHALT MIX.

DRAWN BY	DATE	DRAWING NO.
RWG	91/02/15	IX

TITLE
UNDERGROUND TANK DETAIL
CANADIAN PETROLEUM PRODUCTS INSTITUTE

SECTION 2

COASTAL MARINA OPERATING STANDARDS

BASIC ASSUMPTIONS ON FACILITIES/OPERATIONS

These operating standards are intended for coastal marinas in B.C., serving pleasure craft and commercial marine vessels.

Fuel storage tanks may be either land-based or they may be integrated into the wharf. Land-based tanks may be either aboveground or underground.

These guidelines are minimum standards. In some cases, because of the particular location of a facility, additional local port authority may apply.

RECEIVING DELIVERIES OF FUEL

(a) **Training**: The operator of the marina must ensure that the person delivering the fuel into storage understands the workings of the storage system pipes, valves and pump equipment. This will require direct supervision by the marina operator or his delegate until such time as the delivery person has a clear understanding of the procedure.

(b) **Ullage Determination**: Prior to fuel being pumped into storage tanks, the marina operator or his delegate must first determine that there is sufficient space, or ullage available in the tank to accept the intended load without danger of overfill and spillage. This will require that the tanks be physically dipped using a tape or dipstick, and that the ullage be computed using the proper tank chart.

(c) **Fuel Delivery**: Once it has been determined that sufficient ullage exists, and once the correct hose connections, valve openings and electrical bonding have taken place, the delivery of fuel into storage can commence. This may involve a gravity-drop, or pumping, using the on-board pumping equipment of delivery trucks or barges.

The person making the delivery must remain in a position to clearly observe the delivery and to take immediate action to prevent a tank overfill or any other incident.

Upon completion of delivery:

1. **STOP** pumping.

2. **CLOSE** appropriate valves.

3. **DISCONNECT** hoses.

4. **DISCONNECT** bonding wires.

Throughout the delivery process:

1. **ELIMINATE** all possible sources of ignition from the area of delivery.

   If required, the vehicle engine will remain running to provide pumping power. Otherwise, the engine will be shut off.

2. **SHUT OFF** all ancillary electrical equipment in the vehicle, including radios, telephones and other electronic devices.

3. **PROHIBIT** smoking in the vicinity of fuel storage facilities.

DISPENSING OF FUEL

(a) Either the person in charge of the boat or his delegate will be required to physically fuel the boat. Neither the marina operator, nor his staff will perform this function.

Mechanisms which lock fuel dispensing nozzles in the "on" position must be removed from all nozzles.

(b) **NEVER** allow the filling of portable fuel containers while the containers are in a boat.

PLACE the containers on the fuelling dock. Containers not approved under the *B.C. Fire Services Act* will not be filled under any circumstances.

(c) No sources of ignition will be permitted in the vicinity of the fuelling operation. This includes such ignition sources as may exist on the boat, such as running engines, pilot lights, etc.

PROHIBIT smoking on the fuelling dock.

POST adequate signs to warn against ignition sources.

(d) **NEVER** leave the power to the pumping system in the "on" position when neither the marina operator nor his delegate is present.

ENSURE that the operator or his delegate is present when the facility is open for fuelling. He/she supervises the operation and follows safe procedures.

(e) At such times when the marina is not open for fuelling, and where tanks are land-based, at an elevation above the water level:

CLOSE appropriate valves.

LOCK them to prevent the accidental gravity discharge of fuel from the storage tanks.

FACILITIES AND EQUIPMENT CHECKS AND INSPECTIONS

Public safety and protection of the environment require that facilities and equipment be checked regularly and that faults are corrected as quickly as possible.

Daily Checks:

1. **VISUALLY INSPECT** all fuel handling components for signs of leakage. This includes, wherever possible, tanks, lines, unions, valves, hoses and nozzles.

2. **EXAMINE** the water surface for signs of spilled fuel from equipment or from moored boats.

3. **CHECK** shoreline for signs of fuel seepage from soil.

4. **ENSURE** emergency equipment is intact and in place. This includes fire extinguishers, life preservers, spill containment equipment and emergency telephone list.

5. **ENSURE** that the work area is free from loose electrical wiring, oily surfaces, debris, or obstacles that could trip staff or customers.

Weekly Checks:

1. **CHECK** operation of pump emergency shut-down device.

2. **ENSURE** night emergency lighting is functional.

3. **EXAMINE** inside of pump cabinets for leakage, exposed wiring, worn belts, etc.

4. **EXAMINE** hoses and nozzles for wear and damage.

5. **REVIEW** past month's inventory records for accuracy and loss/gain trends.

INVENTORY RECONCILIATION

Fuel storage systems become vulnerable to leakage due to such forces as mechanical damage, corrosion, vandalism, etc.

Fuel which is leaking into the soil from tanks and/or piping often is not visible for long periods of time, until large volumes have been leaked and significant environmental damage has been done.

Leaked fuel can often also pose a serious health and safety hazard.

Contamination from leaks that are quickly detected can be dealt with much more safely and economically than leaks which have been allowed to continue unnoticed for longer periods of time.

Proper reconciliation of inventories is one of the best methods of early detection of leakage. It is also a legal requirement under the *B.C. Fire Services Act*.

- For underground tanks, fuel and water levels in the tanks must be determined each day the marina is in operation.

- For aboveground tanks, the fuel and water levels must be determined at least weekly.

- An inventory reconciliation must be performed daily for underground tanks and weekly for aboveground tanks and the records must be retained for at least 2 years.

- Unusual losses of fuel or gains of water must be reported. Water levels in excess of 55 mm (2 inches) in underground tanks must be reported immediately to the fire authorities.

The following guidelines and criteria, which are often used in the petroleum industry, are useful in assessing the possibility of leakage from underground tank systems. Appearance of any of the following conditions should be considered as grounds for serious investigation:

- 18 or more days of inventory shortage out of any 30 consecutive days records.
- 5 or more consecutive days of inventory shortage.
- Losses for a 30-day period exceeding 1/2% of the sales volume for the same period.

RECORD KEEPING

In many cases, marina operators are required by law to maintain various records for specified time periods and to present their records on demand to authorities wishing to inspect them.

There are other records which may not be legally required, but which operators would be wise to maintain for their own use in managing the business and in defending themselves in the event of prosecutions resulting from incidents.

The following is a list of some of the recommended types of records that should be maintained and stored on or near the site.

- **Inventory Records**
  - Legal requirement (minimum 2 years)
- **Workplace Hazardous Materials Information System (WHMIS)**
  - Training records for operator and employees
  - Material Safety Data Sheets (MSDS) for all regulated products on the site (Legal requirement)
- **Employee Training Records - General**
  - Safety training
  - First aid
  - Emergence response training
  - Fire training

- **Equipment/Facilities Inspections**

  - Own inspection logs
  - Oil company inspections
  - Inspections by government authorities

- **Maintenance Records**

  - Pump/meter calibrations
  - Tank/line pressure tests
  - Fire extinguisher servicing

- **Miscellaneous Records**

  - Staff safety meeting
  - Emergency response exercises
  - Accident/incident reports
  - Reports to fire/environmental authorities

SPILL REPORTING

The *B.C. Spill Reporting Regulations* require that a person who had possession, charge or control of a substance that has spilled or leaked, must immediately report the spill:

- to the Provincial Emergency Program (PEP) by telephone 1-800-663-3456, or
- if calling from outside the province, call 1-604-387-5956, and
- if not practical, to the nearest RCMP.

Substances include:

- all fuels, solvents and waste oil in quantities of 100 litres or more
- glycols and antifreeze in quantities of 5 kilograms or more

However, this should not inhibit you from reporting lesser quantities.

For a complete list:

- consult the regulations, or
- contact your local B.C. Ministry of Environment Office.

The provincial regulations apply mainly to on-land spills. If there is a pollutant release of any quantity into a marine environment, the federal regulatory authority requests that it be reported.

All spills may be reported through the phone numbers above.

When it appears to a person observing a spill that a report under the regulations has not or will not be made, he or she is legally obligated to make that report.

Failure to report, even if you are only an observer, can result in fines up to $200,000.

Spill Report Contents

The Spill Report must (where practical) include:

(a) the reporting person's name and telephone number,

(b) the name and telephone number of the person who caused the spill,

(c) the location and time of the spill,

(d) the type and quantity of the substance spilled,

(e) the cause and effect of the spill,

(f) details of action taken or proposed action to stop, contain, and minimize the effects of the spill with all regard for the safety of the public and of himself,

(g) a description of the spill location and of the area surrounding the spill,

(h) the details of further action contemplated or required,

(i) the names of agencies on the scene, and

(j) the names of other persons or agencies advised concerning the spill.

Other Requirements

The Provincial Spill Reporting Regulation also requires that all reasonable efforts must be made to stop, contain and minimize the effects of the spill, taking into account personal safety and risk to others.

If there is a release into the external environment (offsite) that would be deemed to have a health or safety risk due to the sensitivity of the area, a report should be called in regardless of the amount. Sensitive areas include:

- any and all waterways (creek, river, lake or ocean),
- storm or sanitary sewers,
- close to water wells,
- close to inhabited buildings, etc.

Marinas are particularly sensitive due to proximity to the ocean and waterways (Fisheries Act). Discretion is the key, but it is in your best interest to quickly advise regulatory agencies of any spills that occur.

The initial reporting of a spill should be coordinated by field personnel with immediate notification to the Owner of the property or Management.

Contractual Obligations

These regulations do not alter any obligations laid out in contractual agreements with suppliers, owners, or management for Spill/Incident Reporting procedures. Consult with Management/Owner for local policies.

SECTION 3

FACILITY MAINTENANCE SCHEDULE

A. SAFETY, SECURITY AND CONCERN FOR THE ENVIRONMENT	
AREA OF ACTIVITY	**MARINA OPERATOR WILL:**
1. Legislation	**Comply** with all laws, ordinances, regulations, orders, licences, environmental codes of practice and permits of all constituted authorities, and with any requirements of insurers.
2. Unsafe Conditions	**Immediately make** safe any unsafe conditions involving the facility. Where applicable, **immediately report** any unsafe condition to authorities.
3. Reports	**Report** any product spills to government authorities in accordance with applicable legislation.
4. Product Losses	**Gauge** (dip) all bulk underground storage tanks and reconcile bulk stock daily. **Gauge** (dip) all bulk aboveground storage tanks and reconcile bulk stock weekly. **Keep** accurate records of measurements, meter readings and reconciliations. **Test** underground storage tanks for water daily. **Test** aboveground storage tanks for water weekly. **Use** an approved water finding paste. **TAKE** action to correct and promptly **report** to the facility owner: • any suspected inaccuracy of loading meter (where present) • the finding of water in the storage tanks, and • any suspected product loss owing to faulty storage tanks and lines supported by records of measurement, reconciliations and meter readings.

AREA OF ACTIVITY	MARINA OPERATOR WILL:
5. Emergency Stop Equipment	**Ensure** that main power switch, and "Emergency Stop" switches, where provided, are clearly identified and in perfect working condition at all times.
6. Fire Extinguishers	**Examine** fire extinguishers monthly. **Keep** all fire extinguishers charged and in good working condition. **Ensure** all extinguishers are kept in well-marked, accessible locations in accordance with local fire regulations. **Arrange** for servicing and annual inspection of fire extinguishers, excluding recharging.
7. Waste Removal	**Keep** waste receptacles emptied and **dispose of** waste and garbage in compliance with local regulations. **Keep** the yard and buildings free of rubbish. **Ensure** used oil tanks are not allowed to overfill. **Dispose of** only waste lubricating oils from the marina operation in used oil tanks. **Do not collect** used solvents, anti-freeze, kerosene or fuels in used oil tanks. Collecting customers' used oil requires caution and the method is specific to each company. • **Ensure** water is not allowed to enter in the tanks. • **Drum** contaminated light oils separately and **dispose of** them in accordance with Special Waste Regulation. • Regarding used oil management, it is hoped that proposed legislation which requires the creation of local waste oil collection facilities will soon make the collection of all waste oil possible.

AREA OF ACTIVITY	MARINA OPERATOR WILL:
8. Pollution Control	**Conform** to all pollution control regulations and practices to prevent the entry of entry of flammable or combustible liquids into sewer systems, drains, drainage ditches and waterways. **Be familiar** with action plans to be taken in the event of a spill. **Maintain** lists of personnel and agencies to be contacted if a spill occurs. See section on Contingency Plan. Where oil/water separators have been installed, **remove** the oil at frequent and regular intervals. In hot dry weather, **ensure** that water in separator is at the correct level. In anticipation of freezing weather, **pump** separator dry. **Close** the outlet valve so that it acts as a holding tank, and pump it out during thawing cycles.
9. Grounding	**Ensure** proper grounding of all equipment by regular checking and tightening of connections. **Repair** broken grounding cables. **Replace** broken grounding cables when repairs are not feasible.
10. Product Identification	**Ensure** product identification is legible. **Replace** product decals, stencils and tags on all tanks, pipes, valves and pumps: • immediately after they are damaged, or • when the printing becomes illegible.
11. Signs	**Maintain** legible approved "No Smoking" signs on the premises in accordance with local regulations.

AREA OF ACTIVITY	MARINA OPERATOR WILL:
12. Security	**Lock** all access gates, warehouse and office. **Close** and **lock** tank outlet valves and turn off the master switch before leaving the marina unattended. On aboveground tanks, **keep** tank water drain valves locked and plugged at all times. **Lock** access gates when the person on duty is required to be out of sight of the marina or office for any length of time. At night, **illuminate** marina and fence lines.
B. PREMISES - BUILDING	
AREA OF ACTIVITY	**MARINA OPERATOR WILL:**
1. General	**Carry out** all maintenance and repairs that may be required on the interior and exterior of all buildings.
2. Housekeeping	**Keep** the entire premises, including the interior and exterior of buildings, neat and tidy.
3. Locks & Keys	**Keep** locks and door hardware in good working order. **Lubricate** working parts of locks and safes as required.
4. Furnace and Heating System	**Keep** the furnace and ducting interior and exterior clean. **Replace** or **clean** furnace filters monthly during the heating season. **Have** the chimney inspected and cleaned as required by local ordinance, but no less than once a year. **Arrange** for an annual inspection and servicing of the furnace.
5. Glass	**Replace** all broken glass on premises.

C. *PREMISES - YARD*	
AREA OF ACTIVITY	**MARINA OPERATOR WILL:**
1. Housekeeping	**Keep** the entire premises including yards, lawns, tank farm, neat and tidy and free of weeds, rags, wood and debris. **Keep** snow and ice from roadways, walkways, tanks and equipment. **Fill** and **patch** pot holes in gravelled yard area.
2. Painting	**Carry out** all minor touch-up painting in the yard including pipelines, fences and other equipment.
3. Drainage	**Regularly drain** all tank farm areas of surface water to the oil water separator. **Keep** water passages and sumps free of debris and water.
4. Fences & Gates	**Keep** fences and gates repaired. **Ensure** that gates swing fully and freely. **Ensure** that locking devices function properly.
D. EQUIPMENT - STORAGE TANKS	
AREA OF ACTIVITY	**MARINA OPERATOR WILL:**
1. Records	**Keep** accurate records of: • daily tank gauge readings and inventory reconciliations for underground tanks • weekly tank gauge readings and inventory reconciliations for aboveground tanks • daily tests of the underground storage tanks for water/weekly tests of the aboveground tanks for water

AREA OF ACTIVITY	MARINA OPERATOR WILL:
2. Water and Other Contaminants	**Prevent** water and other contaminants from entering the tanks. **Ensure** that dip hatches on aboveground tanks and fill caps on underground tanks form a secure seal. **Check** that gaskets are in good condition. **Drain** water from aboveground storage tanks when the water depth reaches 5 cm (2 inches) or more. **Drain** all water from underground tanks. **Dispose of** water in an environmentally acceptable manner.
3. Locked Storage	**Ensure** that storage is secured with locks on all tank valves and water drain valves. **Keep** fill caps and dip caps of underground tanks locked.
4. Tank Vents and Screens	**Keep** all tank vents and screens clean and clear of snow, ice, leaves, etc. **Inspect** tank vents and screens not less than twice a year. **Check** tank vent valve seats for tightness of seal.
5. Inspection	**Visually inspect** periodically for excessive corrosion, leaks or settlements.
6. Take Corrective Action and Report to Facility Owner	**Correct/Report** the finding of water in storage tanks **Report** any leaks, excessive corrosion or need for major tank maintenance, including any suspected malfunctioning of tank vents. **Correct** where possible. **Report** any suspected product loss due to faulty storage tanks or other equipment (valves, lines, pumps, loading arms, hoses). **Keep** records of daily measurements and meter readings. **Correct/Report** any cracks or openings in concrete and/or earthen dykes.

E. EQUIPMENT - OTHER	
AREA OF ACTIVITY	**MARINA OPERATOR WILL**
1. Pumps	**Replace** unservicable major items such as pumps, meters, loaders, vents and valves. **Check** for product leaks daily. **Clean** strainer at pump suction at least every six months. **Keep** pumps clear of ice and snow. **Lubricate** as required by schedule of greasing and lubrication. **Make** repairs to leaking mechanical seals.
2. Motors	**Lubricate** motors as required by manufacturer's specifications. **Adjust** motor belt where applicable. **Check** couplings and alignment between pump and motor.
3. Meters	**Ensure** meters are accurate. **Check** that the test seals are intact.
4. Hoses	**Use** hoses carefully and **maintain** them properly to avoid kinks, chafing, and excessive wear. **Inspect** hoses daily to detect weak spots, chafing, and defective fittings. **Replace** defective or worn hoses and fittings as required. **Hydrostatically test** jumper and cargo delivery hoses annually to a pressure equal to 1-1/2 times the maximum working pressure by a qualified contractor who will tag the hoses with the test date.

AREA OF ACTIVITY	MARINA OPERATOR WILL:
5. Valves	**Lubricate** valves as required by manufacturer's specifications. **Tighten** all nuts and bolts on flanges. **Lock** all valves when facility is unattended. **Inspect** and **repair** any cracks or leaks in valves or the inability of a valve to make a positive seal.
6. Piping	**Inspect** pipes daily for leaks and **repair** any minor leaks found. **Tighten** all nuts and bolts on flanged connections. **Replace** gaskets where required. **Report** any major leaks, excessive corrosion damage, excessive expansion, contraction or line shock conditions in piping. **Remove** and **clean** strainer screens at least every six months. **Replace** worn or damaged screens as required.
F. LIGHTING AND ELECTRICAL	
AREA OF ACTIVITY	**MARINA OPERATOR WILL:**
1. Lamps and Fixtures	**Clean** lamps and fixtures, inside and outside. **Replace** unservicable lamps and ballasts (incandescent, fluorescent, mercury vapour and high-pressure sodium) with lamps and ballasts of the recommended type and wattage.
2. Fuses and Circuit Breakers	**Replace** all malfunctioning electrical fuses and circuit breakers.
3. Explosion Proof Fixtures	**Ensure** that all explosion proof and vapour proof fixtures, switches and receptacles are kept properly sealed at all times.
4. Electrical Panel	**Keep** outside electrical panel locked.

SECTION 4

CONTINGENCY PLAN

INTRODUCTION

CPPI Guidelines

These "Contingency Plan Guidelines" have been prepared by CPPI and provide a framework from which to prepare a site-specific contingency plan. A contingency plan is likely the most valuable "tool" to be employed in response to an accidental discharge. Prior knowledge of just how one will react to a given circumstance is essential to achieve an efficient and effective response to an accidental discharge. A good contingency plan provides that knowledge.

Your Own Plan

During an emergency, there is no time to plan strategy, locate equipment, identify contacts and their phone numbers, etc. These must be pre-determined and contained in the contingency plan. The plan must be updated annually:

- to reflect changes at the facility
- to ensure that local conditions (contact phone numbers, equipment stockpiles, cleanup contractors, etc.) have not been altered

The value of any contingency plan is limited by its practical applicability at a facility. Even the best contingency plan will be of no value during an emergency if employees are not familiar with its contents or are unable to locate it directly. Therefore, the three key factors with regard to contingency plans are:

(a) the contents must be accurate and specific;

(b) all facility personnel must be fully conversant with the contents; and

(c) it must be located as to allow for immediate reference.

Responsibility

The operator/owner of each facility must ensure that the contingency plan is developed and maintained. The petroleum suppliers may also provide assistance. The operator/owner is also responsible for testing the procedures specified in the plan. Actual testing of the plan via a spill scenario is the only way to identify defects therein. The discovery that planned response actions are impractical or impossible during a real event can be disastrous.

In the aftermath of a discharge, regulatory authorities will focus not only on the cause of the spill but also on the response of the responsible party. A functional contingency plan will facilitate a good response, and this will help to establish that the responsible party has indeed acted in a responsible manner.

If the responsible party is deemed to have acted responsibly, the likelihood of prosecution is decreased.

Hotline

Although each contingency plan must be developed on a site specific basis, all those prepared for B.C. Coastal Marinas must include the Provincial and Federal "24-Hour - Spill Reporting Hotline" numbers which are:

1-800-663-3456 (Provincial)
666-6100 (Federal)

The local Department of Fisheries and Oceans (DFO) phone number should also be included.

Significant time and effort is required to develop a realistic, workable contingency plan, but the benefit it affords during an emergency may save you thousands of dollars in cleanup and remediation work, and prevent untold environmental and property damage.

Supplement to Plan

A good supplement (but not an alternative) to a contingency plan is the "Emergency Procedures/Emergency Contacts" posters available from most major oil companies. A number of these posters, filled out accordingly, and prominently displayed throughout the facility is also beneficial.

GUIDELINES FOR SITE-SPECIFIC CONTINGENCY PLAN

A. PLAN ACTIVATION/NOTIFICATION PROCEDURES

1. General

A brief sequential activation procedure, operational 24 hours every day, outlining the chain of command.

Preferably on one page (first page of Plan) covering:

- all required internal and external notification.
- all up-to-date personnel and telephone numbers or other methods of communication to be used, (i.e., car radio, beeper, walkie talkies, etc.).

Procedure must identify:

- What is to be reported and with what urgency?
- Who will report?
- To whom it will be reported and in what sequence?

2. NOTIFICATION/CONTACT RESOURCE LIST MUST INCLUDE:

Internal:

- Office/home number(s) of local management (24 hours).
- 24-hour number for site/contact.
- Brief statement on how participants will keep each other informed and communications' networks to be used in a specific occurrence.

External:

- Others, neighbours, personnel and/or industrial/commercial facilities that may/could be affected by occurrence (24 hours).
- Federal Government
- Provincial Government
- Local Government agency assistance contacts
  - Police
  - Fire
  - Ambulance/Medical
  - Municipal (i.e., city works, engineering)
  - Environmental (i.e., Waste Management Branch)
- Pre-arranged industry assistance contacts
- Pre-arranged local clean-up contractors
- Other firms supplying specialized response equipment/materials pre-arranged and noted in the plan.

B. SITE LOCATION MAP

An overall site map will be prepared, indicating "high risk" area(s) of the plan. The map will indicate, for each area identified, the:

- expected point(s) of sudden discharge for the maximum quantity of product expected to be released.
- key control points of sensitive areas (i.e., culverts, catch basins, streams, environmental concerns, neighbours facility concerns, etc.)
- evacuation point where all facility personnel will report.
- safety equipment (i.e., fire fighting, personal protective equipment, first aid, etc.) and response equipment locations.
- safe sequential shutdown device(s), location(s) including overall main utility shutdown locations.

C. PRE-DETERMINED PROTECTION/CONTAINMENT/CLEAN UP PROCEDURES

In each and every site/ship "high risk" areas, indicate the:

- product that could be released in a spill, fire or combination of both
- maximum quantity that may/could be released
- key site features that could be used as control points (culverts, streams, ditches, docks, etc.) to minimize impact
- potential impact(s) on neighbours, extent, magnitude, key areas/locations, controls, contacts

Then develop specific procedures (in this order), "people, the environment and property" by:

- immediate notification sequence (neighbours, response, etc.)
- appropriate evacuation system(s) for personnel and neighbours
- controls to minimize risks (i.e., ignition sources)
- safe shutdown sequence to minimize impact
- safe containment techniques for location, equipment, manpower and training required (pre-arranged)
- where/when to get HELP (contact list)
- safe clean up strategy and requirements, equipment, manpower and training (pre-arranged)
- reporting requirements

which determine specific response strategies that:

- identify product(s) being responded to
- provide product(s) characteristics, hazards, safe handling procedures to be used in a spill/fire/vapour emission response
- provide policy for required personnel protective equipment (where to obtain, MUST for responders, etc.)
- respond to potential Health and Environmental hazards to own or outside people (i.e., contamination, water, etc.)
- identify required types of equipment, manpower, training (own and outside/neighbours) and communications networks - where, how to obtain, by whom

All resources (equipment, manpower, outside help, etc.) must then be provided and pre-arranged for these strategies, and verification of all resources and communications identified in the plan (i.e., contacts, equipment, manpower).

D. RESOURCES

Include an inventory of all specific pre-arranged and verified available resources required for the total site plan, which should include specific contacts for:

- all specific containment/clean up equipment (on and off site)
- availability/speed of equipment to site
- manpower
- contractors
- specific expertise
- communications
- all pre-arranged contracts to provide above
- all safety equipment

All on-site equipment will be maintained in "working order" and **must** be checked as appropriate. Defective or missing equipment (versus initial purchase) will be replaced **immediately**.

Schedules for and records of all preventative maintenance (relevant equipment), inspections and replacements will be maintained and recorded in the plan.

A preventative maintenance schedule for all equipment will be developed, published, and adhered to.

E. DISPOSAL

The overall plan will include information on disposal options, i.e.:

- location of disposal site(s) approved
- method of transport
- means of storage prior to disposal
- approvals required

F. REPORTING

Depending on the severity of releases or degree of concern, government agencies may require post reporting (in addition to initial notification requirements, Section I). Therefore, the following minimum information must be completed, post response, by the designated representative:

- nature of the release
- date and time of the release
- weather conditions at the time of the release and during the response phase
- cause of the release
- product or products involved
- quantities involved
- areas and/or properties impacted
- identification of all parties and individuals involved in the response, or exposed to the product on its vapours, including by-products of combustion
- any health treatments or tests conducted on individuals
- containment and methods used
- clean up techniques employed
- volume recovery
- site remediation completed and planned
- short and long term impacts
- status of the response
- a log of actions taken, including associated times
- measures to be implemented to prevent any re-occurrence

MINIMUM ACTIVITIES SUPPORTING PLAN

A. TRAINING

1. Training requirements will be reviewed by the site designated representative on an ongoing basis. All employees will receive the following minimum training:

   - employees' duties and responsibilities in the plan
   - complete knowledge of the plan, including role(s) taken in each "high risk" area response
   - use of personnel protective equipment
   - evacuation procedures
   - fire and explosion procedures
   - spill response procedures
   - communications and alert/alarm procedures
   - use of containment and clean up equipment
   - safe shutdown procedures
   - hazards of spilled products

2. The designated representative at the location will:

   (a) **immediately provide** for training of all response employees

   (b) **ensure** future employees assigned to a site response role receives training before taking a role in any site response

   (c) **provide** each response employee, as appropriate, an annual review of the training

   (d) **maintain** a record of each site response person covering:

   - description of training or course given
   - date of last training

B. **EXERCISES/TESTING AND INVESTIGATIVE FOLLOW-UP**

- The site/ship will conduct a simulation exercise which tests the plan, or "high risk" areas within the plan at least once a year.
- Immediately following the exercise, a written evaluation of the plan will be made, investigating any perceived shortfalls.
- Said shortfalls will be corrected, with modifications made to the plan accordingly, no later than 30 days from the exercise date.
- A written report will identify corrections made to the plan, the date the correction(s) were made and will be filled in the plan (updates).

REFERENCED DOCUMENTS

- "BCPA Oil Spill Control Manual" (Bolton/Green) 1985
- "B.C. Waste Management Act", "Special Waste Regulation", effective April 1, 1988, updated to April 20, 1989

  Section 10 - "Spill Protection and Reporting"

  Section 11 - "Contingency Plan"

  Section 12 - "Emergency Systems Testing"

  Section 13 - "Personnel Training"
- "Contingency Planning Guidelines: A Spill Training Module", Petroleum Association for the Conservation of the Canadian Government, 1975
- "Emergency Response Plans", "Transportation of Dangerous Goods Regulations", Transport Canada, 1987
- Draft Guidelines, "Contingency Plan Criteria for Releases of Dangerous Goods", Nova Scotia - Department of the Environment, May 30, 1989
- "A Guide to Assist in the Preparation of an Emergency Response Assistance Plan", Compliance and Operations Branch, Transport Canada, April 1, 1988
- "The Exxon Valdez Oil Spill": "A Report to the President of the United States of America", Oil Spill Intelligence Report, May, 1989

SECTION 5

TRAINING

Responsibility for Training

As citizens, we all have a responsibility to protect the environment in which we work and live. As individuals involved in the handling and dispensing of petroleum products, we have an additional responsibility to understand and practice proper procedures to satisfy the concerns of the public and all levels of government.

The manager of a facility dispensing petroleum to marine vessels on the coastal waters of British Columbia:

- must be fully aware of the standards outlined in this manual
- train his employees and ensure that each one of them is competent according to these standards

All personnel involved in any stage of handling fuel at a marine facility are required to execute the procedures set forth in this manual. New employees must be thoroughly trained and competent before they become involved in operating a facility.

It is intended that the Task Force will develop training standards for Coastal Marina Operators.

Elements of Training

Training involves not only the initial instruction of new employees but also the up-grading of employees in new procedures pertaining to changes in the facility, and in emergency procedures and contingency plans that are seldom used in normal day to day operations. Employees should be familiar with all aspects of this manual including:

Legislation

Each employee must be familiar with the requirements of the law pertaining to tank gauging, stock reconciliations, record keeping, dispensing of fuel, emergency procedures and notification of authorities in the event of a spill.

Facility Standards

Fuel Facility operators should be familiar with the facility guidelines.

Operating and Maintenance Standards

- All employees must be thoroughly familiar with the operating guidelines for the receipt, storage, transfer, and dispensing of fuels.

- Logs of inventory, records, employee training, facility inspections, and accident reports, must be maintained.

Contingency Plans

- Each employee must be thoroughly familiar with the emergency shutdown procedures and knowhow to react in various emergency situations.

- He/she should know that a contingency plan exists and must be familiar with its contents and know where the document is left for quick reference.

- Emergency response phone numbers must be posted by the phone.

- Each employee must be trained in the notification procedures in the event of an emergency or spill.

- All employees must receive practical "hands on" training in the use of a fire extinguisher.

  It is recommended that the manager seek the assistance of the local fire department in this regard.

- Each facility manager must attend an industry-sponsored oil spill training exercise at least once per year.

  Full time employees should attend at least once every two years.

SECTION 6

LEGISLATION IN RESPECT OF MARINA SERVICE STATIONS

The waters of the Canadian coast are subject to Federal, Provincial and Municipal Acts, Regulations or By-Laws.

1. FEDERAL LEGISLATION

The Floating Marina may be classified as either:

(a) **A vessel** - capable of making a voyage although anchored or made fast to a shore, as defined by Canada Shipping Act (CSA) or

(b) **A work** - structure other than a vessel, as defined by Navigable Waters Protection Act (NWPA)

(a) CSA, R.S., 1985 C. S-9 as amendments to 1989, C. 17.

This Act is divided into various parts with Part V giving the Canadian Coast Guard Steamship Inspection Board authority to inspect vessels.

Regulations can then be made pursuant to Section 305(3) of the Act, to be more specific and cover all aspects of construction and operation.

(i) **CSA 2** - **Air Pollution Regulations** - covering the emissions from machinery and fires.

(ii) **CSA 3** - **Board of Steamship Inspection Scale of Fees** - covering the fees charged for vessel inspections

(iii) **CSA 4** - **Collision Regulations** - covering the type, location and number of visual and audible signalling equipment.

(iv) **CSA 15** - **Crew Accommodation Regulations** - covering the construction of any building used by crew (employees).

(v) **CSA 20** - **Fire Detection and Extinguishing Equipment Regulations** - covering the type, location, testing and number of such equipment.

(vi) **CSA 22** - **Garbage Pollution Prevention Regulations** - covering the discharge of waste into the water.

(vii) **CSA 28** - **Hull Construction Regulations** - covering the suitability of a vessel to perform its required duty.

(viii) **CSA 29** - **Hull Inspection Regulations** - covering the extent and period between inspections.

(ix) **CSA 32** - **Lifesaving Equipment Regulations** - covering the type, location, testing and number of such equipment.

(x) **CSA 33** - **Marine Machinery Regulations** - covering the suitability of machinery to perform its required function.

(xi) **CSA 49** - **Oil Pollution Prevention Regulations** - covering the discharge of oil into the water.

(xii) **CSA 53** - **Private Buoy Regulations** - covering the use of private aids to navigation.

(xiii) **CSA 57** - **Safe Working Practices Regulations** - covering occupational health and safety.

(xiv) **CSA 67** - **Shipping Casualties Reporting Regulations** - covering any serious accident involving crew and/or vessels.

Of these various regulations, some have only a tenuous association with CSA 20, 22, 28 and 32 are more relevant. However, it is CSA 49 - Oil Pollution Prevention Regulations - which will be most stringently administered.

Due to the volume and complexity of these regulations, no purpose would be served by a general distribution. CSA 49 being the exception due to the desirability to ensure all efforts are made to safeguard the environment.

Notwithstanding the above regulations constituting a section of CSA, provision has been made for exempting to any part of the Act pursuant 305(2.1). This requires exemptions to be considered on an individual facility basis.

CSA Part XV Pollution Prevention and Control specifically addresses the security of the environment.

(b) **NAVIGABLE WATERS PROTECTION ACT** (NWPA) R.S., C. 193 S.1

Should a structure be so attached to the shore or anchored permanently in a safe haven with ready access by means of gangways or equivalent, then the structure may be considered a work, providing the distance from the shore is not considered excessive. This work must then comply with the NWPA and is enforced by the Navigable Waters Protection Branch of the Coast Guard's Aids & Waterways Branch.

The NWPA defines a work and lays down procedures for construction or alteration plan approval.

NWPA 3 - Navigable Waters Works Regulations - covers the disposition of debris during construction.

The CSA and NWPA are concerned mainly with the marina construction and operations.

(c) **FISHERIES ACT** (R.S., C. 1985 C-14 Amended 1988, C. 49)

Regulations pursuant to this Act are enforced by the Federal Departments of Environment and Fisheries and Oceans. Particular attention should be drawn to the fish habitat and the pollution prevention provisions found in Sections 34 to 42.

2. PROVINCIAL LEGISLATION

(a) **INDUSTRIAL HEALTH & SAFETY REGULATIONS** (B.C. Reg. 58/77)

In these regulations, the *Worker's Compensation Board* of B.C. stipulate the working conditions of all B.C. worksites. However, Section 10-18 refers specifically to Marina Gas Stations:

- References are made to NWPA and E.E.I.A. (see below).
- Requirements are made in respect to Fire Protection, Life Saving Equipment and Construction.

(b) **WASTE MANAGEMENT ACT** (B.C. Reg. 263/90)

This Act is enforced by the B.C. Ministry of the Environment. Under this Act:

(1) Spill Reporting Regulation establishes the correct procedure to follow in the event of a spill or release of substances into the environment, and

(2) Special Waste Regulation deals with hazardous wastes including waste oil, waste oil filters, oil contaminated waters, etc.

The Act also deals with spill prevention and contingency planning.

(c) **LAND ACT** (B.C. Reg. 315/76)

This Act is administered by the B.C. Ministry of Land and Parks. The Act covers the use of crown land including land covered by water.

(d) **B.C. FIRE CODE** (B.C. Reg. 15/87)

The B.C. Fire Code is part of the Fire Services Act. This covers all fire risk, prevention, detection and extinguishing. All requirements are mandatory.

As risk is inherent in the operation, by building facilities to strict technical codes (see NFC below) this risk may be greatly reduced. As with WCB Regulations, references are made to several other regulations and codes.

(e) **ELECTRICAL ENERGY INSPECTION ACT** (B.C. Reg. 92/79)

This Act dictates the electrical installation standards to which buildings have to be constructed and is usually quoted by other Provincial Regulations for their electrical standard.

3. MUNICIPAL LEGISLATION

Each municipality will have their own requirements for the location, construction and operation of facilities in waters under jurisdiction. They may simply refer to other regulations or may have more specific details, as with the Vancouver Port Corporation's.

Safety Standards for Floating Marine Fuel Stations generally reflect current Acts and Regulations but will have additional requirements as a rescue of their specific location taking into account conditions of traffic weather, accessibility, etc.

4. NON-REGULATORY CODES OF PRACTICE

There are standards having provisions which are not mandatory. However, these may well form the basis of future legislation.

(a) **TERMPOL CODE** (TP 743)

The full title "Code of Recommended Standards for the Prevention of Pollution for Marine Transportation and Related Assessment Procedures" is referred to as the "TERMPOL Code".

This contains guidelines for the construction and operations including contingency planning.

It is generally for deep sea vessels and terminals but many sections can be related to Marine Service Stations.

(b) **NATIONAL FIRE CODE OF CANADA** (NFC)

This is published by the National Research Centre. It comprises a model set of technical requirements designed to provide an acceptable level of fire protection and prevention.

(c) **INTERNATIONAL MARITIME ORGANIZATION** (IMO)

This organization is a body of the United Nations concerned with all aspects of marine transportation. It holds conventions with regards to various issues such as Marine Pollution (MARPOL) and Ocean Dumping (OILPOL).

Canada is a signatory of IMO Council whose recommendations are submitted to Parliament to be implemented or rejected as by due process.

It is from these recommendations that future legislation in the marine industry is made to conform to an International Standard.

(d) **ENVIRONMENTAL CODE OF PRACTICE (ECP) FOR UNDERGROUND AND ABOVEGROUND STORAGE TANKS**

These codes are published by the Canadian Council of Ministers of Environment (CCME) and provides minimum technical requirements to protect the environment by preventing product releases from underground and aboveground storage tanks and piping. The ECP for aboveground storage tanks is currently in its draft form and is expected to be finalized in the near future.

(e) **INTERNATIONAL SAFETY CODE FOR OIL TANKERS & TERMINALS**

This is produced jointly by the International Chamber of Shipping, the Oil Companies International Marine Forum and the International Association of Ports & Harbours.

It gives recommendations regarding construction, operations, training, and safety of terminals and vessels, and for the all important interface of terminal and vessel.

In case of conflict between the various acts and regulations, the more stringent clause must apply.

In drawing up standards of codes of practices, take note of current legislation. References to the various Acts and Regulations would be of help in any Manual of Operations. However, only the actual document of the Act or Regulation can be relied upon and it is upon these that a course of action should be based.

Environment Canada

Canadian Coast Guard / Garde côtière canadienne

Canadian Petroleum Products Institute / Institute canadien des produits petroliers

BC Environment

ENVIRONMENTAL EMERGENCY SERVICES BRANCH

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