



**Forest
Practices
Board**

Audit of Fire Protection Practices

*British Columbia Hydro and Power Authority
Occupant Licences to Cut
L48655, L48700, L48750, L48751*

FPB/ARC/156

November 2013

Table of Contents

Audit Results	1
Background	1
Audit Approach and Scope	3
Planning and Practices Examined	3
Findings.....	4
Audit Opinion.....	6
Appendix 1: Forest Practices Board Compliance Audit Process	7

Audit Results

Background

As part of its 2013 compliance audit program, the Forest Practices Board selected British Columbia Hydro and Power Authority (BC Hydro) Occupant Licences to Cut (OLTC) L48655, L48700, L48750 and L48751 for a limited scope audit.

The four OLTCs are located in the Columbia Valley, within the Selkirk and Rocky Mountain Resource Districts. They are also within the boundaries of the transmission line Licences of Occupation (LOO),¹ which extend 125 kilometres from Golden to Invermere along the west side of the valley. The OLTCs provide for the removal of timber for the expansion of BC Hydro power transmission infrastructure. A map of the audit area is on page 2.

Under the four OLTCs, BC Hydro harvested 87 388 cubic metres of timber during the construction of the Columbia Valley Transmission (CVT) Project. The project includes a new substation near Golden and new transmission lines built to increase the supply and reliability of electrical power in the communities between Invermere and Field.



Kicking Horse substation, west of Golden, BC and the Columbia Valley transmission line extending south towards Invermere.

One forest professional, a professional engineer, and a chartered accountant made up the audit team. Field work was carried out from June 3 to 5, 2013.

Additional information about the Board's compliance audit process is provided in Appendix 1.

¹ Pursuant to the *Lands Act*, BC Hydro was granted the right of occupation for the areas of land required for the CVT Project in the form of Crown Industrial Licenses of Occupation and Interim Roadway Licenses of Occupation. The relevant licenses issued to BC Hydro include: 4405036 and 4405084 for OLTCs L48700, 4405037 and 4405038 for OLTCs L48655 and 404259 and 404261 for OLTCs L48750 and L48751.

Map of the Columbia Valley Transmission Project Area



Audit Approach and Scope

The Board conducted a limited scope compliance audit of BC Hydro's OLTCs L48655, L48700, L48750 and L48751, in which all fire protection activities carried out between January 1, 2011, and June 5, 2013, were included. These activities and associated planning were assessed for compliance with the *Wildfire Act (WA)* and related regulations.

The Board's *Compliance Audit Reference Manual*, Version 7.0, September 2012 sets out the standards and procedures used to carry out this audit.

The *Hydro and Power Authority Act (HPAA)* Section 32, does not require BC Hydro to comply with the *Forest and Range Practices Act (FRPA)*. However, it does require that the activities associated with these OLTCs comply with the WA (HPAA Section 32(7)). Therefore, BC Hydro's protection practices fall within the scope of the audit, but the harvest, road construction and maintenance and associated planning requirements do not.

Planning and Practices Examined

CVT Project Planning

BC Hydro's activities within the OLTCs are guided by the Columbia Valley Transmission Project Construction Environment Management Plan (CEMP).² The CEMP describes BC Hydro's forest management strategies within the OLTCs, including fire prevention. Beyond that, the CEMP's larger purpose is to establish protocols and measurable environmental requirements to meet BC Hydro's environmental management goals. It also lays out best management practices and mitigation measures and specifies that contractors work in accordance with regulatory approvals, engineering specifications and site-specific plans, such as Environmental Protection Plans and Forest Fire Emergency Response Plans.

Fire Protection

The auditors reviewed the content of the CEMP to assess whether it addressed the requirements of the WA.

BC Hydro awarded nine contracts for land clearing, and within the four OLTCs, contractors cleared 2 041 hectares of land and removed 87 388 cubic metres of timber to make way for construction of the transmission lines. Five of the nine contractors were assessed for fire preparedness and all hazard assessment and abatement activities associated with the land clearing were audited.

² The Columbia Valley Transmission CEMP was prepared by AECOM for BC Hydro. Its primary objective is to provide construction contractors and their field crews with specifications designed to minimize, and where possible, avoid potential adverse effects to the environment during the construction phase of the CVT Project. For more details the CVT CEMP can be found online at:

http://www.bchydro.com/content/dam/hydro/medialib/internet/documents/projects/cvt/CVT_Construction_Environment_al_Mgmt_Plan.pdf

Fire Preparedness

Because there were no active sites during the field audit, fire preparedness requirements of the WA were assessed by reviewing emergency response plans, burn plans and contract completion certificates for five of the nine contractors. Auditors also assessed whether BC Hydro was satisfied that the contractors had fulfilled their contractual obligations, including regulatory requirements, through issuance of the contract completion certificates.

Hazard Assessment and Abatement

Hazard assessment and abatement practices were assessed for the entire 125 kilometres of the transmission line project and BC Hydro conducted a detailed hazard assessment of the entire CVT project once all clearing and slash disposal activities were complete. The assessment and associated abatement activities were reviewed for compliance with the WA.

Findings

Fire Protection Activities

The audit found that fire protection activities undertaken by BC Hydro and contractors complied with the requirements of the WA and related regulations.

Fire Preparedness

BC Hydro clearly addressed fire preparedness in the CEMP. The CEMP specifically required that land clearing contractors prepare emergency response plans (ERPs) to meet the requirements of the WA and the *Wildfire Regulation*. The ERPs addressed site-specific fire prevention and suppression requirements, providing detailed descriptions of firefighting equipment, fire protection procedures and strategies for debris management.

To provide further assurance that the fire preparedness requirements of the WA were being met, BC Hydro:

- required clearing contractors to conduct regular self monitoring inspections and also conducted periodic inspections itself; and
- issued a contract completion certificate and released the contract performance deposits only after contractors had met all contract conditions, including regulatory requirements.

The CEMP addressed the requirements of the WA. All five contractors whose activities were assessed by the Board adhered to the requirements of the CEMP and were issued contract completion certificates.

Hazard Assessment and Abatement

To help ensure that hazard assessment and abatement obligations met the requirements of the WA, BC Hydro:

- prepared detailed site plans for clearing, grubbing and slash disposal, using combinations of:
 - machine, hand, cable or helicopter harvesting;
 - machine or hand piling; and
 - burning or chipping/hauling debris piles.

The permutations of these treatments depends on site sensitivity and resource interests such as cultural, riparian, wildlife and soils.

- surveyed the entire CVT project after construction to assess whether land clearing practices conformed to the CEMP.
- conducted a hazard assessment of the entire CVT project once all clearing and disposal activities were complete, to confirm whether or not fuel hazards were at acceptable levels.
- maintained an active vegetation management program, regularly assessing standing timber adjacent to power lines and vegetation under transmission lines, and tended to those items with the potential to exceed fire hazard thresholds.
- identified hazard trees adjacent to the hydro right-of-way and removed or stubbed them during clearing to prevent them from falling and damaging transmission lines, which could potentially cause a fire.
- chipped and transported debris to nearby mills for use as hog fuel, reducing the amount of slash burning required onsite.



An example of a site where trees were hand felled and cable yarded, and slash was hand piled in order to reduce fire hazard and potential erosion along a stream channel.



The Columbia Valley transmission line extending south towards Invermere: the low amount of residual slash depicted is typical of the slash levels retained along the entire length of the CVT project.

All hazard assessment and abatement obligations were completed by BC Hydro prior to the field audit, with a full fire hazard assessment done upon the completion of land clearing. Assessments were completed in a timely manner and the Board found that residual slash levels were low. BC Hydro met the hazard assessment and abatement requirements of the WA.

Audit Opinion

In my opinion, fire protection activities carried out by BC Hydro on Occupant Licences to Cut L48655, L48700, L48750 and L48751 between January 1, 2011, and June 5, 2013, complied in all significant respects with the requirements of the *Wildfire Act* and related regulations, as of June 2013.

In reference to compliance, the term “in all significant respects” recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

The *Audit Approach and Scope* and the *Planning and Practices Examined* sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with the *Wildfire Act*.

A handwritten signature in black ink that reads "C R Mosher". The signature is written in a cursive, flowing style.

Christopher R. Mosher CA, EP(CEA)
Director, Audits

Victoria, British Columbia
October 16, 2013

Appendix 1:

Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders under the *Forest and Range Practices Act* (FRPA), section 122, and the *Wildfire Act* (WA). Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and / or WA requirements.

Selection of auditees

The Board conducts about 8 or 9 compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS). This section describes the process for selecting agreement holders to audit.

To begin with, auditors randomly select an area of the Province, such as a district. Then the auditors review the forest resources, geographic features, operating conditions and other factors in the area selected. These are considered in conjunction with Board strategic priorities (updated annually), and the type of audit is determined. At this stage, we choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2010, the Board randomly selected the Mackenzie district as a location for an audit. After assessing the activities within that area, we discovered that a large licensee had recently closed operations due to financial problems. As the Board has expressed concern in the past about financially strapped companies failing to meet outstanding obligations, such as reforestation and road maintenance, and we knew that some of the licence area is very remote, the new licence holder was selected for audit.

For BCTS audits, a district within one of the 12 business areas within the province is selected randomly for audit.

Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with Canadian generally accepted auditing standards. The standards for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board randomly selects an area or district and determines the scope of audit to be conducted and the licensee(s) to be audited, all activities carried out during the period subject to audit are identified (such as harvesting or replanting, and road construction or deactivation activities). Items that make up each forest activity are referred to as a population. For example, all

sites harvested from the timber harvesting population and all road sections constructed from the road construction population.

A separate sample is then selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to areas where the risk of non-compliance is greater.

Audit fieldwork includes assessments of features using helicopters and ground procedures, such as measuring specific features like riparian reserve zone width. The audit teams generally spend one week in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of FRPA and WA, is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legislated requirements. For those practices considered to not be in compliance, the audit team then evaluates the significance of the non-compliance, based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

Auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet FRPA and WA requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that one or more non-compliance event(s) is not significant and not generally worthy of reporting. However, in certain circumstances, events that are considered not significant non-compliance may be reported as an area requiring improvement.

Significant non-compliance – where the auditor determines a non-compliance event(s) or condition(s) is or has the potential to be significant, and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of one or many non-compliance events.

If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests, Lands and Natural Resource Operations.

Reporting

Based on the above evaluation, the auditor then prepares a draft audit report. The party being audited is given a draft of the report for review and comment before it is submitted to the Board. Once the auditor submits the draft report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report. The representations allow parties that may potentially be adversely affected to present their views to the Board.

The Board then reviews the draft report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report. Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.



**Forest
Practices
Board**

PO Box 9905 Stn Prov Govt

Victoria, BC V8X 9R1 Canada

Tel. 250.213.4700 | Fax 250.213.4725 | Toll Free 1.800.994.5899

For more information on the Board, please visit our website at: www.fpb.gov.bc.ca