

3.0 DISTRIBUTION FACILITIES OPERATION AND MAINTENANCE PROJECTS COVERED BY THE MODEL CLASS SCREENING REPORT

This section outlines the types of projects that are covered in the MCSR. Projects that are not subject to the class screening process because of their potential to cause significant adverse environmental effects after the application of environmental mitigation practices are also identified. Those projects that are not subject to the MCSR require an individual screening as per Section 18 of CEAA.

3.1 The Purpose of Operation and Maintenance Projects of Electrical Distribution Facilities in Banff National Park

Distribution facilities in Banff National Park include electrical poles, power lines, and equipment. The primary objective of operation and maintenance of these facilities is to ensure the safe, reliable delivery of power to the Bow Valley. The safe delivery of power requires eliminating the potential for electric shock or fire hazards. Electric shock hazard occurs when a tree contacts a line and may subsequently conduct a current that energizes the tree and the surrounding ground. This would create a hazardous situation for people and wildlife in the area (TAU 1994). Similarly, trees contacting a power line may create a flow of current to the ground causing the tree or surrounding vegetation to ignite.

The BNP Management Plan (1998) identifies the provision of facilities and services to visitors and residents in a safe and cost-effective manner as one of the Park's mandates. Provision for electrical services is included in this mandate.

In addition to minimizing the potential for fire and ensuring public safety, routine operation and maintenance of Aquila distribution facilities are necessary for several other reasons, including:

- To reduce fire risk;
- To maintain ecological integrity through vegetation management and control of non-native species on RoWs; and
- To maintain access to distribution lines in the case of an emergency and for routine operations through vegetation management and control.

3.2 Power Distribution Facilities Operation and Maintenance Projects Subject to CEAA

This MCSR includes projects that require an environmental assessment under CEAA. In order for CEAA to be triggered and a screening assessment to be required, the proposed projects must:

- Be defined as a project under the Act. A project is either an undertaking in relation to a physical work such as any proposed construction, modification, decommissioning, abandonment or other undertaking; or a physical activity not relating to a physical work that is listed in the *Inclusion List Regulation* to the Act;

- Not be listed in the *Exclusion List Regulation* to the Act; and
- Involve a federal authority that is required to exercise or perform at least one of the following duties relating to the project:
 - Propose the project;
 - Grant financial assistance to the project;
 - Grant an interest in land in order for the project to be carried out;
 - Exercise a regulatory duty in relation to a project, such as issuing a permit that is included in the *Law List Regulations* (paragraph 23(a) and (b)).

The projects included in this class screening are classed as “an undertaking in relation to a physical work such as construction, modification, decommissioning, abandonment or other undertakings”.

The relevant regulations are specified in the *Law List Regulations*. There are two provisions under the *Law List Regulations* that apply to operation and maintenance projects of distribution facilities, including:

1. Section 11(1) of the National Parks General Regulations is included in the Law List. Parks Canada issues permits for:

“...the removal of natural objects for construction purposes within the Park.”

Natural objects are defined as soil, sand, gravel, rock, mineral, fossil or other object of natural phenomenon, not included within the terms flora and fauna.

2. Section 12 (1) of the National Parks General Regulations is included in the Law List:

“..a permit issued by a park superintendent authorizing the removal or destruction of any flora or natural objects for park management purposes”.

Table 3.1 lists the projects that are covered by the MCSR and require environmental assessments under CEAA or under Parks Canada Policy. A detailed description of each of these projects is provided in Section 3.6.

Table 3.1 Projects Carried out for Routine Operation and Maintenance of Distribution Facilities in BNP that Trigger CEAA

Project	Permit Required	Type of Permit	CEAA Triggered	Assessment May be Requested under Parks Canada Procedures
<i>Maintenance and Operation of Overhead Distribution Facilities</i>				
Access and Travel along Right-of-Way	✓	Restricted Activity ^(a)		✓ ^(b)
Aerial Inspection and Patrols (landing or dropping equipment/supplies)	✓	Restricted Activity and/or Permit		
RoW Ground Patrols and Detailed Line Patrols	✓	Restricted Activity		
Pole Test, Pole Wrap or Re-Treatment	✓	Restricted Activity	✓ ^(c)	
Pole Salvage, Straightening, Realignment or Replacement	✓	Restricted Activity	✓ ^(c)	
Crossarm Replacement	✓	Restricted Activity		✓ ^(b)
Re-anchoring or New Anchor Installation	✓	Restricted Activity	✓ ^(c)	
Conductor Repair, Replacement and Salvage	✓	Restricted Activity		✓ ^(b)
Ground and Pole Top Equipment Installation, Repair, Replacement, or Salvage (i.e. transformer, OCR, insulator)	✓	Restricted Activity		✓ ^(b)
Insulator Washing	✓	Restricted Activity		✓ ^(b)
Rod Grounding	✓	Restricted Activity	✓ ^(c)	
<i>Maintenance and Operation of Underground Distribution Facilities</i>				
Equipment Inspection, Repair, or Replacement	Only if off road	Restricted Activity	✓ ^(c)	
Line Repair	✓	Restricted Activity	✓ ^(c)	
<i>Right-of-Way Maintenance and Vegetation Control</i>				
Tree and Brush Removal (manual brushing, slashing, tree trimming, selective thinning)	✓	Restricted Activity	✓ ^(d)	
Mowing	✓	Restricted Activity	✓ ^(d)	
Burning	✓	Burning		✓ ^(b)
Herbicide Application for Brush and Weed Control	✓	Restricted Activity		✓ ^(b)
<i>General Activities</i>				
Fording Streams, Wetlands and Rivers	✓	Restricted Activity		✓ ^(b)
General Waste Management				
Hazardous Materials Handling	Only if off road	Restricted Activity		✓ ^(b)
Material Storage, Staging and Handling	✓	Restricted Activity		✓ ^(b)
Vehicle and Equipment Operation and Maintenance				

^(a) Restricted Activity Permits are not in the Law List Regulation and do not trigger CEAA.

^(b) EA may be requested as per Parks Canada's "Procedures of the Department of Canadian Heritage for Complying with the Canadian Environmental Assessment Act".

^(c) CEAA triggered if excavation is required.

^(d) CEAA triggered if vegetation removal is required.

3.3 Distribution Facilities Operation and Maintenance Projects Excluded from the MCSR

Some undertakings in relation to a physical work may not require an environmental assessment under the CEAA because they are included in the *Exclusion List Regulations*. These projects are therefore not included in the MCSR. The Act defines Excluded Projects under Section 7(1) whereby an environmental assessment of a project is not required when:

- The project is described in the *Exclusion List Regulation* to the Act;
- The project is to be carried out in response to a national emergency for which special temporary measures are being taken under the “Emergencies Act”;
- The project is to be carried out in response to an emergency and carrying out the project forthwith is in the interest of preventing damage to property or the environment or is in the interest of public health or safety.

There are no projects carried out during operation and maintenance activities for distribution facilities in BNP on the Exclusion List.

3.4 Distribution Facilities Operation and Maintenance Projects Not Suited to the MCSR

Several activities conducted by Aquila on the distribution lines do not meet the class screening requirements of being routine, repetitive activities with known, easily mitigable environmental effects. These projects could have the potential to cause unacceptable environmental impacts, and therefore, an individual screening will be required. The projects that are excluded from this MCSR for that purpose are:

- Clearing of new land within BNP for construction of a new RoW;
- Construction of taps of more than 250 m in length that do not require clearing and/or are not in an established RoW;
- Non-selective vegetation clearing or non-selective chemical spraying closer than 30 m to a waterbody;
- Modifications that increase capacity by more than 1000 kVas; and
- Instream activities, except fording activities, triggering Section 35 (2) of the *Fisheries Act*.

Similarly, project activities that do not comply with the mitigations identified in this document (for example, conducting activities outside of recommended timing windows) will not be covered by the MCSR and must be assessed by an individual screening.

For those projects contained on the *Comprehensive Study List Regulations* of the CEAA, a comprehensive study, not a screening, would be required. There are no projects listed on the *Comprehensive Study List Regulations* that would apply to the routine operation and maintenance of distribution facilities in BNP.

3.4.1 Projects Included in this Document Based on Parks Policy

In addition to the projects that trigger CEAA, other projects undertaken by Aquila require an environmental assessment under Parks Canada procedures for complying with CEAA. For completeness, all relevant routine activities associated with the operation and maintenance of transmission facilities have been included in this MCSR. This includes:

- Projects that trigger CEAA.
- Projects that require environmental assessments under Parks Canada procedures.
- Projects that may require permits to be issued by Parks Canada that are not in the Law List Regulation *e.g.*, Restricted Activity Permits. As outlined in Section 1.2, the MCSR can encompass federal permits and other approvals required for transmission facility operation and maintenance projects.
- Any other activities associated with the above projects that have the potential to result in environmental effects.

Inclusion of all of these projects in the MCSR allows for a thorough review of impacts associated with all activities undertaken during routine operation and maintenance. It also assures consistency of environmental mitigation practices and demonstrates due diligence on the part of Aquila.

3.5 Description of Project Class

Deregulation of the generation electric industry in Alberta has affected the ownership and responsibility for safe and reliable operation and maintenance of electrical energy facilities in BNP. While TransAlta Utilities continues to operate and maintain the Cascade power generating facility, AltaLink is now responsible for the transmission facilities (lines 54 and 551) that carry electrical power into BNP, to the Town of Banff and the Village of Lake Louise. Primary distribution facilities deliver electrical power to residences, businesses and Parks facilities in BNP.

The MCSR covers all primary distribution facilities within BNP that are owned and operated by Aquila except for those that are covered under the *Revised Model Class Screening Report for Routine Projects within the Town of Banff and Proximate Outlying Areas* (2003). Primary distribution facilities are those that support the electrical distribution of 25 kV and less. Primary distribution facilities owned and operated by Aquila include (see Figure 3.1):

- Distribution poles, pole top equipment and lines that carry energy:

- From the Town of Banff to Two Jack Lake Campground and Lake Minnewanka Day Use Area (Appendix F, Map 1a)
- From the Cascade Control Dam to Cascade Substation SS29s (Appendix F, map 1b)
- From the Sunshine Substation to Sunshine Village Facilities (Appendix F, maps 2a to 2c)
- Johnston Canyon (Appendix F, map 3)
- Castle Junction (Appendix F, map 4)
- Eldon West (Appendix F, map 5)
- Throughout the Village of Lake Louise (Appendix F, map 6)
- From the Lake Louise Substation to Lake Louise ski hill facilities (Appendix F, map 7)
- From the Village of Lake Louise to Chateau Lake Louise (Appendix F, map 8)

Electrical facilities subsequent to the meter are the responsibility of the respective property managers.



Legend

- 1a Lake Minnewanka
- 1b Lake Minnewanka
- 2a Sunshine Ski Area
- 2b Sunshine Ski Area
- 2c Sunshine Ski Area
- 3 Johnston Canyon
- 4 Castle Junction
- 5 Eldon West
- 6 Village of Lake Louise
- 7 Chateau Lake Louise
- 8 Lake Louise Ski Area



Scale 1:250,000

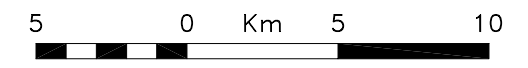


FIGURE 3.1
 LOCATION OF AQUILA
 DISTRIBUTION LINE MAP SHEETS
 BANFF NATIONAL PARK



Aquila



TOPO KEY MAP

3.6 Projects Included in the MCSR

Only routine projects associated with the operation and maintenance of primary distribution facilities that are owned and operated by Aquila are addressed in the MCSR. Some of these projects trigger an environmental assessment under CEAA; others require an environmental assessment under Parks Canada policy. As a proactive means of addressing all potential environmental implications associated with projects undertaken by Aquila in BNP, the following routine operational and maintenance projects are included in the MCSR:

- Access and travel along the RoW
- Operation and maintenance of overhead primary distribution lines
 - Aerial inspection patrols
 - RoW Ground patrols
 - Detailed line patrols
 - Pole tests, pole wrap or re-treatment
 - Pole straightening, realignment, replacement or salvage
 - Re-anchoring or new anchor installation
 - Crossarm repair, replacement and salvage
 - Conductor repair, replacement and salvage
 - Ground and Pole top equipment installation, repair, replacement or salvage
 - Insulator washing
 - Rod grounding
 - Vegetation control on the RoW for primary distribution lines
 - Tree removal/selective thinning
 - Manual brushing (slashing)/Tree Trimming
 - Mowing
 - Burning
 - Herbicide application for brush and weed control
- Operation and maintenance of underground distribution lines
 - Equipment inspections, repair or replacement
 - Line repair
- General Activities
 - General Waste Management
 - Maintenance in/around surface waters

- Vehicle and equipment operation and maintenance
- Material storage, staging and handling
- Hazardous material handling
- Fording of streams, wetlands and rivers

Environmental screening requirements for each project in this MCSR have been outlined in Section 3.2 and Table 3.1. A detailed description for each of these projects and their associated activities is provided in Table 3.2.

3.6.1 Equipment Operation on the RoW

Access onto the RoW and the use of motorized vehicles and specialized equipment is associated with all projects undertaken by Aquila. The type of vehicle and equipment operated on each section of the RoW is dependant on the sensitivity of terrain, project requirements and operational limitations in terms of safety, weight capacity, wind, and cost. In most cases, equipment use is as follows:

- ATVs (quads, argos, snowmobiles) are typically used during ground patrols on the RoWs to carry the small tools and equipment involved in minor repairs (lines and poles) and to address vegetation concerns.
- For sites accessible by road, a typical ½ or ¾ ton service truck, or a tandem digger (Telec truck) is used.
- In the sensitive areas (seasonally wet, soft or steep terrain or snow conditions), wide tracked or soft tired equipment (i.e. Foremost or tracked digger, argo, quad,) is used (see Appendix C for a complete equipment list and description).
- Where wetlands or excessively steep terrain prohibit ground access, a helicopter is used to transport tools, equipment, men, and the poles to the site. Helicopters are also used when quick response is required such as responding to an emergency situation.

Equipment associated with each project undertaken on the RoW is summarized below in Table 3.3 and described in detail in Appendix C. All motorized vehicles and equipment involved in Aquila projects will be marked with company identification.

Table 3.2 Description of Projects and Associated Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park

Project	Description of Associated Activities
MAINTENANCE AND OPERATION	
<i>Overhead Primary Distribution Line Maintenance</i>	
Access and Travel along RoW	<ul style="list-style-type: none"> • Access onto the RoW and the use of motorized vehicles and specialized equipment is associated with all projects undertaken by Aquila. The type of vehicle and equipment operated on each section of the RoW is dependant on the sensitivity of terrain, project requirements and operational limitations in terms of safety, weight capacity, wind, and cost. Table 3.3 describes equipment requirements for each of the projects described below.
Aerial Inspection and Patrols <i>Every 3 – 7 years</i>	<ul style="list-style-type: none"> • Helicopter aerial patrols provide an expedient and effective method to inspect the power line for physical and mechanical problems related to equipment and conductors • Aerial Patrols are flown where necessary, and are scheduled to occur during ground patrols. Approximate frequency: every 3 – 7 years. • Staging areas are required; the helicopter re-fuels once every hour (approximately). Typically the Sunshine and Lake Louise substation areas are used as staging areas.
Ground Patrols for RoW <i>Every 3 years</i> Detailed Line Patrols <i>Every seven years</i>	<ul style="list-style-type: none"> • RoW ground patrols are undertaken every three years to determine maintenance requirements for the year. Rights-of-way are patrolled to assess conditions for access and to determine vegetation maintenance requirements. Patrols identify/record areas of concern where vegetation conditions threaten the integrity of the line; the number and location of trees to be trimmed/cleared and weeds. • Line patrols identify required line and equipment repair/replacement requirements and are conducted annually. • RoW vegetation patrols are done in conjunction with the line patrols when possible. • Detailed line ground patrols are conducted every 7 years. During detailed ground patrols, poles are climbed to provide a detailed inspection of structures and equipment.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Project	Description of Associated Activities
<i>Overhead Primary Distribution Line Maintenance - Continued</i>	
<p>Pole Test, Pole Wrap or Re-Treatment</p> <p><i>Conducted after 15 years service, and then every 7 years</i></p>	<ul style="list-style-type: none"> • Poles are tested to determine their condition. Poles are assessed internally and externally – both above and 1 foot below ground by drilling holes. After testing, the holes are plugged with a wooden dowel. • The internal condition of the pole is assessed for sound wood depth, rot and/or cavities by drilling a number of holes into the pole. • The external condition of the pole is visually inspected to determine the presence of surface rot, woodpecker or ant damage, and lightning damage • Over a period of time the growth of rot organisms or insects is inevitable. Wood preservative is applied internally and/or externally. External treatments are in the form of pole wraps, which are installed around the pole 2 feet below ground and 3 inches above. Internal fungus and insect treatments exist in the form of chemical fumes or solid chemical rods inserted into drilled holes in the pole. Woodpecker and insect cavities are injected with a resin filling and hardening agent. All chemicals are approved by Parks Canada.
<p>Pole Salvage, Straightening, Realignment or Replacement</p> <p><i>When required</i></p>	<ul style="list-style-type: none"> • Extensive insect, fungus or wildlife damage or other physical damage (i.e. vehicle hits pole, avalanche, rock slide) threatens the integrity of pole structure and poles must be straightened, realigned or in some cases replaced. Changes in regulations may also necessitate pole replacements (i.e. increased height requirements). • Pole straightening may require replacement or adjustments of guy wires and/or anchors (<i>see activity description below</i>). If this is not effective, poles may be moved from their current location to new adjacent holes within the same RoW. • Poles are typically pulled out intact along with guy wires and anchors. However, if much land disturbance is necessary, poles and anchor rods are cut off below ground and covered with soil. • New poles are installed by augering a new hole approximately 6 feet deep. If this is not possible, blasting may be required (Blasting is not covered under this MCSR). Poles are then inserted and holes are backfilled.
<p>Rod Grounding</p>	<ul style="list-style-type: none"> • The most commonly used method of rod grounding is the installation of deep driven steel ground rods as electrodes. The 3/4 inch steel rods are in 6-foot sections. The rods are pounded into the ground with a pneumatic or hydraulic hammer. Depth is dependant on soil characteristics. Rod grounding is required to ensure system integrity and compliance with the Safety Codes Act.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Project	Description of Associated Activities
<i>Overhead Line Maintenance - Continued</i>	
Re-anchoring or New Anchor Installation	<ul style="list-style-type: none"> • Anchors are buried structures that attach to guy wires for the purpose of stabilizing power poles. Anchors are either excavated or augered into the ground approximately 6 feet deep. • There are three types of anchors: <ul style="list-style-type: none"> - Rock Anchor: A Nodwell equipped with an air compressor and drill creates a hole. Large steel pins are inserted approximately 6 feet deep. Concrete is poured into the hole to stabilize the pin. - Helix Anchor: A Telec or Nodwell augers the spiral rods into the ground approximately 6 feet deep. - Plate Anchor: A backhoe/bobcat digs a hole approximately 10 feet deep for the 2-foot square anchor. Once levelled, the metal plate is then placed in the hold and the excavation is backfilled.
Crossarm Replacement <i>Dependant on ground patrol report</i>	<ul style="list-style-type: none"> • Crossarms are made of treated wood and may be replaced more frequently than poles as a result of weather degradation, mechanical damage or to accommodate increased hardware. On single pole structures, arms vary in length from 7 feet up to 13 feet. Two pole structures (H frames) require crossarms that range from 24 feet to 38 feet in length. • Crossarms, with affixed equipment, are lifted and temporarily held in place with the vehicle booms. Linemen climb the poles and secure the crossarms.
Conductor Repair, Replacement and Salvage <i>Dependant on ground patrol report</i>	<ul style="list-style-type: none"> • The use of Telecs or Foremosts with rated, insulated boom and buckets, allows conductor and equipment repair to be done “live”. Where these cannot be used, conductors and equipment are repaired with the line out of service
Ground and Pole Top Equipment Installation, Repair, Replacement or Salvage <i>Dependant on ground patrol report</i>	<ul style="list-style-type: none"> • Equipment comes in a variety of shapes, sizes, materials, and weights. All equipment is maintained directly from the pole, from platforms mounted to the pole, or from aerial devices. Methods are solely dependent on the voltage of the line, the type of pole structure and the type of terrain.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Project	Description of Associated Activities
<i>Overhead Primary Distribution Line Maintenance - Continued</i>	
Insulator Washing <i>Dependant on ground patrol report</i>	<ul style="list-style-type: none"> • Insulators are washed by high pressure spraying with a non-toxic abrasive such as cornhusks and deionized water.
<i>Underground Distribution Line Maintenance</i>	
Equipment Inspection, Repair or Replacement <i>Annually</i>	<ul style="list-style-type: none"> • Padmount transformers, switching cubicles, terminations, and other facilities are inspected once per year. Locks are checked, and cubicles are painted if they have deteriorated. Cubicles are washed by spraying with a non-toxic abrasive such as cornhusks and deionized water. • When necessary, cubicle transformers are re-levelled with the use of a backhoe and Telec truck.
Line Repair <i>As required</i>	<ul style="list-style-type: none"> • Underground lines are excavated for repair. Splice pits are subsurface chambers that allow access to underground splice joints (similar to a manhole for sewer systems). They are typically lined with concrete and have a “trap door” type entrance. Instillation of these pits eliminates re-excavation if a splice joint fails. • The cable is repaired in the excavation/splice chamber. The trench is filled in, and the site restored as close as possible to its original condition. If the line runs beneath a road i.e. Sunshine – the area is repaved. If off-road, the site is re-vegetated. • This is typically done with a backhoe for the majority of the trench, with hand digging the last portion for conductor exposure.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Project	Description of Associated Activities
<i>Vegetation Control for the Primary Distribution Lines (approximately every 3 to 4 years)</i>	
Tree Removal on the RoW	<ul style="list-style-type: none"> • Incompatible vegetation species are those that are in or have potential to be in direct conflict with power lines or equipment. This generally includes trees that will mature to a height of over 4 m. For safety purposes, trees that have potential to contact live power lines are considered incompatible species and are removed from the existing RoW. When selecting trees for removal the following factors are taken into account: <ul style="list-style-type: none"> - Growth habit - Vegetation species type and diversity - Existing tree locations and densities - Future tree removal requirement - Identification of incompatible vegetation (vegetation with heights at maturity incompatible to the conductor line height) - Danger trees (dead, split, lightning damage, tree height, etc.) • Methods of incompatible tree and brush removal include selective thinning, manual brushing, trimming and mowing (described below).
Selective Thinning on the RoW	<ul style="list-style-type: none"> • Trees are often left as a barrier on RoWs to act as a visual screen or to reduce public access. Using a staggered removal technique, trees that are in direct conflict with the line or those that will grow into the line within the next 3-5 years are removed with a chainsaw. The objective is to obtain an even distribution of trees across the RoW with a maximum variation in height. If the density of trees screening the RoW is light, trees may be trimmed rather than removed.
Manual Brushing (Slashing) on the RoW	<ul style="list-style-type: none"> • Manual brushing, called slashing, is used to remove trees and shrubs in areas that are inaccessible to equipment. It is done with chainsaws and brush saws. Slashing for “pre-mow” involves marking obstacles, removing vegetation around obstacles (i.e. guy wires) and hazards and marking items of significance i.e. rare vegetation, nesting trees, wet areas. Cut brush is piled on the RoW to be mowed with a brush mower. • Slash debris can be chipped and blown back onto the RoW or into the forest where aesthetics are not a primary concern. Chips can also be blown into the truck box and hauled to a suitable dump location or used for landscaping. • Vegetation may also be cut and dropped into the forest and laid flat (limbed and bucked) when mowing is not appropriate.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Project	Description of Associated Activities
<i>Vegetation Control for the Primary Distribution Lines - Continued</i>	
Tree Trimming on the RoW	<ul style="list-style-type: none"> • Tree trimming is conducted when there is no option for tree removal including screened areas and specific requests (such as wildlife trees or vegetation species with special conservation status). • In areas inaccessible to equipment, trees are climbed and hand trimmed. Occasionally, trim lifts are used to piece down trees that cannot otherwise be safely removed. • Tree trimmers for utility work are specialized and must hold valid Utility Tree Trimmer certification. The trim lifts are specially equipped to work within close proximity to energized lines. As the trucks are large and heavy, they are used only along roads or trails in good condition with hardened surfaces. • Brush chippers are pulled by trim lifts.
Mowing on the RoW	<ul style="list-style-type: none"> • Mowing is used where large volumes of incompatible vegetation must be removed and ground conditions allow for the use of heavy equipment. A brush mower will mow all the areas that have incompatible vegetation. Vegetation is mowed to ground level and mulch is scattered along the RoW and left to decompose. Re-growth will be allowed until critical tree to line clearances are reached or access for line repair becomes restricted. • Brush mowers are used and are accompanied by a service truck (equipped with a “Tidy Tank”) for refuelling and repairs.
Burning on the RoW	<ul style="list-style-type: none"> • Burning of brush is an alternative, though not desirable method of brush disposal and is considered a last resort. It is done only if the amount of brush is great, and would prove a fire hazard if left to decompose naturally. • Disposable brush is gathered into small piles in cleared areas on the RoW. These piles are then lit and continuously supervised until the fire is completely out.

Table 3.2 Description of Activities Carried out for Routine Operation and Maintenance of Distribution Facilities in Banff National Park - *Continued*

Activity	Description of Activities
<i>Vegetation Control for the Primary Distribution Lines - Continued</i>	
Herbicide Brush and Weed Control on the RoW	<ul style="list-style-type: none"> • Herbicide use is very carefully considered within the Park. It is selectively used to manage weed and brush populations that cannot effectively be managed by mechanical or hand labour means. Weeds are also sprayed as needed to prevent the spread of restricted and noxious weeds listed on the Parks Canada Priority Control List (Appendix D). All chemicals are approved by Parks Canada according to the Pest Control Products Act. • Applications for brush control are only done on an as needed basis. • Application is done selectively, with one ton trucks equipped with hand sprayers or by personnel with backpack sprayers.
GENERAL ACTIVITIES	
Fording Streams, Wetlands and Rivers	<ul style="list-style-type: none"> • Whenever possible, stream crossings are avoided. If a stream crossing is unavoidable, they are forded. Temporary bridges are not used.
General Waste Management	<ul style="list-style-type: none"> • Personal and/or trade waste is collected during all activities and that occur within the Park and is disposed of at approved locations (for example food wrappers, flagging tape, cable etc.).
Hazardous Materials Handling	<ul style="list-style-type: none"> • Hazardous materials are not stored or disposed of within the Park. All hazardous materials are transported out of the Park by certified material handlers in accordance with Federal and Provincial <i>Transportation of Dangerous Goods Act</i> and Regulations. A list of chemicals used by Aquila in BNP is provided in Appendix D.
Material Storage, Staging and Handling	<ul style="list-style-type: none"> • Depending on the scope of the maintenance project, it may be necessary to have staging areas within the Park. Potential staging areas are selected through consultation with Parks Canada staff.
Vehicle and Equipment Operation and Maintenance	<ul style="list-style-type: none"> • No equipment maintenance or repair is scheduled to occur on the RoW. Equipment maintenance would only be undertaken on the RoW in cases of emergency (i.e. equipment failure) or when the activities are minor operations (topping up of oil, re-greasing).

Table 3.3 Typical Equipment Requirements

TYPE OF ACCESS	EQUIPMENT						
	Truck (1/2, 3/4 or 1 ton)	Tandem Truck	Backhoe/Spider	Pole/stick Trailer		3 Ton Truck and Chipper	Tree Trimmer
Road Access							
Access: slope <15% and/or dry/frozen conditions	ATV	Foremost/ Tandem Truck	Backhoe/Spider	Helicopter	Tracked or tired mower		
Access: slope 15-45% and/or wet terrain	ATV/Argo	Foremost or Nodwell		Helicopter			
Access: slope >45%	Foot			Helicopter			
DISTRIBUTION LINE MAINTENANCE ACTIVITY:							
Access and Travel along RoW	✓	✓	✓	✓		✓	
RoW Ground Patrols and Detailed Line Patrols	✓						
Pole Test, Pole Wrap or Re- Treatment	✓						
Pole, Straightening, Realignment, Replacement or Salvage		✓		✓			
Re-anchoring or New Anchor Installation		✓					
Crossarm Repair, Replacement and Salvage	✓	✓		✓			
Conductor Repair, Replacement and Salvage		✓					
Ground and Pole Top Equipment Repair, Replacement or Salvage (i.e. Transformer, OCR, Insulator)		✓					
Insulator Washing		✓		✓			
Rod Grounding	✓	✓	✓				
Equipment Inspection/ Repair/ Replacement		✓	✓				
Line Repair			✓				

Table 3.3 Typical Equipment Requirements – *Continued*

TYPE OF ACCESS	EQUIPMENT						
	Truck (1/2, 3/4 or 1 ton)	Tandem Truck	Backhoe/Spider	Pole/stick Trailer		3 Ton Truck and Chipper	Tree Trimmer
Road Access							
Access: slope <15% and/or dry/frozen conditions	ATV	Foremost/ Tandem Truck	Backhoe/Spider	Helicopter	Tracked or tired mower		
Access: slope 15-45% and/or wet terrain	ATV/Argo	Foremost or Nodwell		Helicopter			
Access: slope >45%	Foot			Helicopter			
DISTRIBUTION LINE MAINTENANCE ACTIVITY:							
Mowing on the RoW ^(a)	✓				✓		
Tree and Brush removal (manual brushing, slashing, tree trimming, selective thinning) on the RoW	✓					✓	✓
Herbicide Brush and Weed Control on the RoW	✓						

^(a) A truck is required to accompany Flex Tractor on more complex terrain.

3.6.2 *Typical Seasonal Scheduling and Duration of Projects*

Very few projects listed in Table 3.2 occur on an annual basis. With the exception of emergency activities (discussed in Section 4.7), Aquila facility and RoW maintenance scheduling is driven by project need and equipment availability.

Project need is determined during ground patrols and/or aerial patrols or through custom request. The duration of each project (i.e. the time Aquila staff must be on the RoW to complete activities related to the task at hand) is dependant on the scale and scope of each project.

Existing scheduling for Aquila projects is essentially an ad hoc process. Upon declaration of this MCSR, Aquila will be committing to the development of annual Operations and Maintenance Plans. The rational for future scheduling is discussed in detail in Section 4.5.1.

Overall project duration will typically run from one day to three weeks, depending on the project.