

Risk-based Oversight (RBO)

Guidebook

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1.1 PURPOSE

Risk-based Oversight (RBO) for wiring work is a process where Electrical Safety Authority's (ESA) oversight of an electrical installation is based on an assessment of the safety risk. Safety risk is defined as: the likelihood an incident will occur, and if it does, the severity of the incident. Safety risk is determined by who does the work, what the work is and where the work occurs.

RBO allows ESA to shift efforts to higher risk installations and safety activities including compliance, enforcement and to address the underground economy. ESA's objective is to reduce the burden on contractor time and workflow by making it easier to comply with electrical safety regulations.

1.2 SCOPE

Risk-based Oversight affords contractors the opportunity for selective inspection of electrical wiring installations for new and renovation work at residential, commercial, industrial, institutional and agricultural sites.

Licensed Electrical Contractors (LECs) and qualified installers who demonstrate consistent compliance with the Ontario Electrical Safety Code (OESC or Code) who have a sufficient volume of notifications are eligible for selective inspections, preauthorized service reconnections and RBO specific programs.

Risk-based Oversight – Overview

2.1 RBO ENGINE

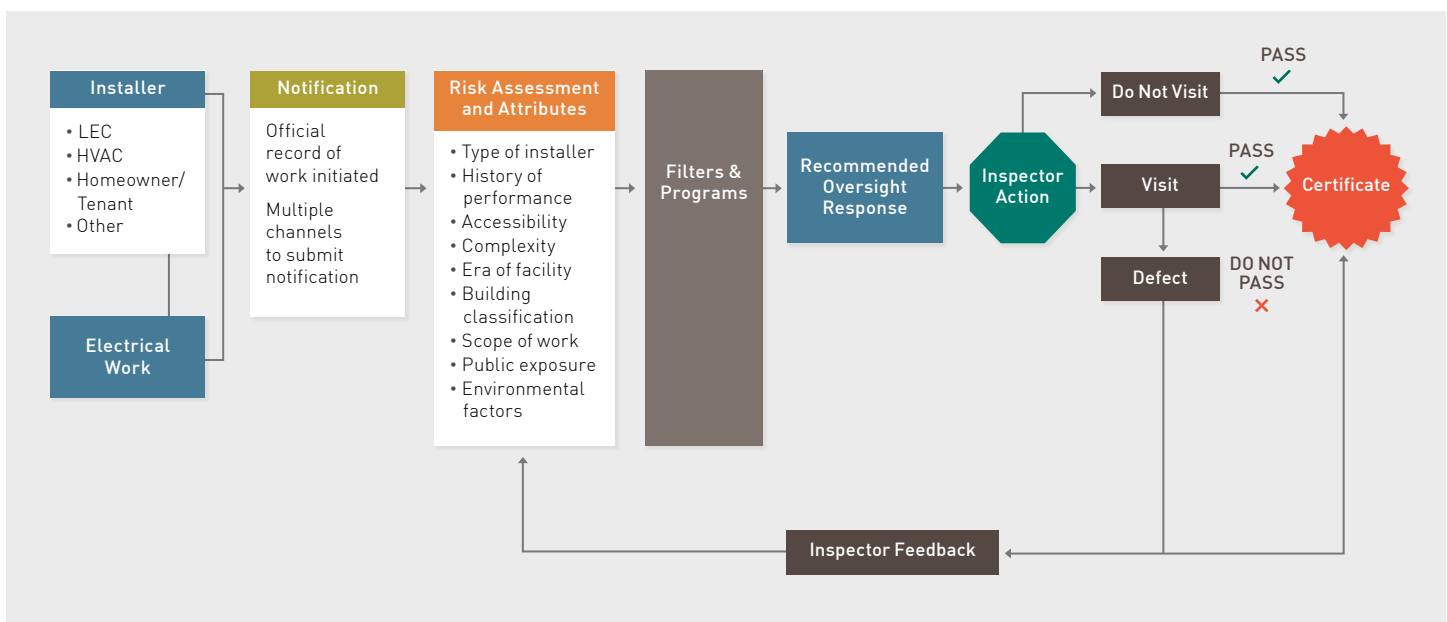
The RBO Engine (see Figure 1) is a set of guidelines and rules that perform immediate analysis of an electrical notification using nine attributes to calculate the risk of the installation.

The attributes consider who does the work, what the work is and where the work is performed.

Calculation of risk is expressed using a risk ranking of Low (L), Medium (M) and High (H). Based on the risk ranking, an Inspector receives a recommendation for an oversight response. The potential oversight responses are:

- Visit Optional or Visit (for low or medium-risk work)
- 100% response (for high-risk work)

Figure 1: The Risk-based Oversight Engine



2.2 OVERSIGHT RESPONSE

A risk ranking is assigned to every notification when it is processed.

When scheduled, notifications are sorted into like groupings for each contractor based on risk: low-risk notifications are sorted into groups of five; medium-risk notifications are sorted into groups of two; and high-risk notifications stand alone.

The risk ranking determines the visit ratio for that group of notifications. The visit ratio within selective inspection is one of RBO's key benefits:

- 1 visit for every 5 **(1:5)** notifications filed by a contractor in their low-risk group (20% of an LEC's low-risk work could expect a visit)
- 1 visit for every 2 **(1:2)** notifications filed by a contractor in their medium-risk group (50% of an LEC's medium-risk work could expect a visit)
- 1 visit for every notification **(1:1)** filed by a contractor ranked high-risk (100% of an LEC's high-risk notifications could expect a visit)

The Inspector can choose to make a site visit regardless of the risk ranking (L, M or H) or site visit recommendation.

2.3 FILTERS

Complementing the L, M, H risk ranking, are a series of business rules (filters) that apply additional qualitative factors to a notification. The filters allow the RBO Engine to recommend at least one site visit in the following circumstances, regardless of the risk ranking:

1. New construction
2. High Risk
3. Notifications filed by a homeowner or non-account customer
4. New contractor accounts until RBO selective inspection eligibility criteria is met (see section 3.1)
5. Insufficient notification volume
 - Contractors must file 10 or more notifications within a 12 month rolling window to be eligible for selective inspection
6. Large and/or complex jobs, defined as:
 - Notifications >100 outlets and devices or
 - Notifications invoiced by ESA >\$500 before tax
7. Installations in classified hazardous locations
8. Temporary services and wiring installations
9. Service connections, Commercial rated >400A
Residential rated >200A
10. Fire pumps
11. Entertainment, film and TV shoots, and special events
12. Renewable energy installations
13. Large new residential >7000ft² and/or >200A
14. Buildings housing livestock
15. Self-contained energy storage systems (ex. power walls)
16. Permanent Generator – Commercial
17. Pools/Hot Tubs/Splash Pads – Commercial
18. Re-energize service and other "miscellaneous" fees
 - Re-energize service after disaster (fire, flood, lightning strike, power surge)
 - Re-energize service after 6 months (i.e. non-occupancy or non-payment)
 - Occupancy letter/Statement of Electrical Installation
19. Central Metering
 - See section 4.5 for information about the RBO Central Metering Program
20. Permanent generators
 - See section 4.6 for information about the RBO Generator Program
21. Pools and Hot tubs
 - See section 4.7 for information about the RBO Pool and Hot tub Program

2.4 DEFECT RATIO

Contractor performance (excluding heating, ventilation and air conditioning (HVAC) installers) is measured by defect ratio, which is one factor that determines risk ranking for selective inspection and other benefits.

The defect ratio is calculated by dividing the number of notifications with one or more technical and/or warning defects by the number of notifications with one or more site visits.

Formula for calculating defect ratio:

$$\frac{\text{Number of Notifications with defect(s)}}{\text{Number of Notifications visited}} = \% \text{ Defect Ratio}$$

The best strategy to maintain a low defect ratio is to perform consistent Code compliant work.

Number of defective notifications and notifications visited are from the previous 12 month rolling window.

One technical defect is equal to one defect. Five warning defects are equal to one defect. Administrative defects (such as “no access”) do not count toward the defect ratio.

Not all OESC Section 2 defects are considered Administrative; the following are Technical and contribute to the defect ratio:

- 2-022 – Sale or other disposal and use
- 2-028 – Miscellaneous
- 2-032 – Damage and interference
- 2-034 – Use of approved equipment
- Section 2-100 +

Defects flagged as “postponement” are not included in the defect ratio calculation.

Defect and visit information is calculated monthly and communicated to contractors. To challenge a defect, the contractor must immediately contact the Inspector who issued the defect.

3.1 RBO SELECTIVE INSPECTION BENEFITS

3.1.1 Selective Inspection

Scope of Work	Risk-based Oversight applies to all notifications filed for new and renovation wiring installations occurring at residential, apartment and industrial, commercial, institutional and agricultural (ICIA) sites. The contractor will receive selective inspection if RBO eligibility criteria is met.
Eligibility for Selective Inspection	10 notifications in a 12 month rolling window. See Section 3.1.2 for eligibility for new and existing accounts.
Oversight Response	<p>Selective Inspection Ratios</p> <p>1:5 Low-risk notifications 1:2 Medium-risk notifications 1:1 High-risk notifications</p> <p>Selective Inspection for New Residential</p> <p>≤7,000 square feet – Receives a minimum of 1 visit. One of either rough-in, service or final inspection request is visited; all other requests are deemed inspected with or without a visit</p> <p>>7,000 square feet and/or >200A – Receives a minimum of 2 visits. The service inspection and one other inspection request are visited; all other requests are deemed inspected with or without a visit</p>

3.1.2 Eligibility for RBO Selective Inspection

Minimum notification volume and defect ratio must be achieved to receive selective inspection. New accounts and existing accounts have different requirements to qualify for selective inspection.

Eligibility for Selective Inspection – New and Existing Accounts

	New Account	RBO (Existing Account)
Notification Types with Involved Fees	All Wiring Notifications	All Wiring Notifications
Notification Volume	10 wiring notifications of any kind	10 wiring notifications of any kind
Volume Calculation Period	12 month rolling	12 month rolling
Defect Ratio	≤4%	N/A
Audit Ratio	100% response	Based on risk L = 1:5 M = 1:2 H = 1:1

3.1.3 New Accounts

- 10 wiring Notifications of any kind filed in a 12 month rolling window
- Overall defect ratio of $\leq 4\%$
- The new account will stay at 100% oversight response until the notification and defect ratio threshold is achieved

3.1.4 Existing Accounts

- 10 wiring notifications filed in a 12 month rolling window
 - Notifications count towards RBO selective inspection as they are processed (including active and closed notifications)

- The contractor moves to 100% oversight response when the notification volume drops below the threshold in the 12 month rolling window
- Defect ratio is not required to maintain ongoing selective inspection as it is only one of the nine attributes that determines oversight response

3.2 PREAUTHORIZED SERVICE RECONNECTIONS

In addition to the benefit of selective inspection, contractors may be eligible for preauthorized reconnection for service upgrades and repairs on Residential and ICIA sites.

3.2.1 Preauthorized Service Reconnection Parameters

	Scope of Work	Preauthorized Reconnections
Residential Service Upgrades/Alterations	Single family dwelling: $\leq 200A$ 120/240 1PH Existing multi-ganged meter-base repair/upgrade $\leq 200A$ 120/240 1PH Note 1: Residential service $>200A$ is not eligible Note 2: Conversion from a single gang meter base to a multi-ganged meter base (or vice-versa) is considered to be a new service and not eligible	Yes
Apartment Service Upgrades/Alterations	Not eligible for preauthorized reconnections	No
ICIA Service Upgrades/Alterations	$\leq 400A$, 120/240V 1PH or 120/208V 3PH Note 1: Does not include conversion from 1PH to 3PH or vice-versa Note 2: Does not include Delta Wye Conversion	Yes
Eligibility for Preauthorized Reconnection	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s License and the appropriate Certificates of Qualification for the work performed • $\leq 10\%$ Defect Ratio Residential Preauthorized Reconnections <ul style="list-style-type: none"> • 5 residential service changes, repairs or upgrades notifications and scheduled within the past 12 months • Limited to changes, repairs, upgrades • “New” services are not considered in notification volume count for preauthorized eligibility ICIA Preauthorized Reconnections <ul style="list-style-type: none"> • 5 ICIA service changes, repairs or upgrades notifications and scheduled within the past 12 months • Limited to changes, repairs, upgrades • “New” services are not considered in notification volume count for preauthorized eligibility 	
Oversight Response	Selective Inspection Ratios 1:5 Eligible for preauthorized reconnection 1:1 Not eligible for preauthorized reconnection	

4.1 RBO PROGRAMS

RBO programs apply to electrical installations that are specific and/or limited in scope. Eligibility is dependent on a contractor’s notification volume and defect ratio. RBO programs allow ESA to apply a pre-defined visit ratio for eligible electrical work, overriding the oversight response recommended by the risk ranking.

	Programs (filters) subject to selective inspection							Small Jobs		HVAC
Notif Type Involved Fees	HV Substation Mtce	LV Service Mtce	Pole Line Mtce	Central Metering	Permanent Generators-Res	Pools & Hot Tubs-Res (bonding and/or equip.)	Retrofitted Luminaires	Res	ICA	Res
Notif Volume (Wiring)	10 specific to the program	10 specific to the program	10 specific to the program	10 specific to the program	10 specific to the program	10 specific to the program	10 specific to the program	10 of any kind	10 of any kind	10 HVAC-specific
Vol Calc Period	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling	12 mths rolling
Defect Ratio (All Wiring Notifs)	≤4%	≤4%	≤4%	≤4%	≤4%	≤4%	≤4%	≤10%	≤10%	QAS 1:10 2:10
Audit Ratio	1:5 – D/R or 1:1 – D/H	1:5 – D/R or 1:1 – D/H	1:5 – D/R or 1:1 – D/H	1:5 – D/R or 1:1 – D/H	1:5 & D/R if appl., or 1:1 & D/H if appl.	1:5 or 1:1	1:10, 1:5, 1:1 Incl. 1:5	1:10 or based on risk	1:10 or based on risk	1:10 or based on risk

4.2 HIGH VOLTAGE (HV) SUBSTATION MAINTENANCE

Scope of Work

The HV Substation Maintenance program applies to pre-planned preventative maintenance on substations >750V up to and including 115kV/230kV, and defined as “Minor” or “Like-for-like replacements”.

Minor work:

1. Alignment of breakers and switches
2. Inspection of breakers and switches
3. Tap changes
4. Testing of electrical equipment (transformers, breakers, switches)
5. Cleaning of electrical equipment and line insulators
6. Removal of vegetation

Like-for-like replacements (equivalent rating/characteristics):

1. Cable terminations
2. Cooling fan motors
3. Fuse cut outs
4. Fuse links
5. Fuses
6. Insulators
7. IPS tubing
8. Lightning arresters
9. Oil change
10. Stress cones
11. Transformer bushings
12. Transformer re-gasketting
13. Wooden poles
14. Minor repairs to station electrode (e.g.) repair broken conductor or connector
15. Minor repairs to fence and associated fence bonding (ex.) reattaching barbed wire or bond conductors

If a contractor is doing minor work or like-for-like replacements as above, but not a full preventative maintenance, the notification must be filed **and** the Substation Maintenance Condition Report (SBMCR) completed in its entirety – all items on the SBMCR must be assessed and reported.

Gang-operated pole/structure-mounted HV switches and other replacement installations not covered under the list of minor work or like-for-like replacements (not including major work) will be eligible for preauthorized reconnections and emergency connections. The work must be filed on a separate notification and full inspections will occur on this work the next time the Inspector is in the area.

Poles that are part of the substation service conductors but located outside the substation are included as part of the substation maintenance for tree trimming, cleaning and replacement of insulators. Any additional work on the pole line requires a separate notification.

A preauthorized reconnection issued for the original substation maintenance is **void if major work is required**. If major repairs are required in order to re-energize the substation, the contractor must contact an ESA Inspector for approval to reconnect.

Table continues on the next page.

4.2 HIGH VOLTAGE (HV) SUBSTATION MAINTENANCE (CONT'D)

<p>Scope of Work (cont'd)</p>	<p>A separate notification must be filed for major work.</p> <p>Major work – for example, but not limited to:</p> <ol style="list-style-type: none"> 1. Replacement of low voltage cables 2. Installation of cooling fans complete with wiring 3. Relocation of fuse cut outs 4. Relocation of IPS tubing 5. Replacement of grid or ground electrode 6. Replacement of high voltage cables 7. Replacement of insulators (not like-for-like) 8. Replacement of structures supporting HV equipment 9. Replacement of switchgear, switches, breakers, capacitor banks 10. Replacement of transformers 11. Replacement of portions of fence and/or fence bonding/grounding <p>Failure to provide sufficient notice (←48 hours) may result in a mandatory site visit with applicable scheduled or unscheduled overtime fees.</p> <p>After Hours Emergency Work – requiring a Connection Authorization</p> <p>Under RBO, contractors eligible for the HV Substation Maintenance program who require a connection authorization in an after-hours, emergency situation will contact the ESA After Hours service by calling 1-877-ESA-SAFE (372-7233). The contractor will describe the work to the On-Call Inspector. The contractor must provide the ESA Account # and Utility meter # to the On-Call Inspector. The On-Call Inspector will determine if an inspection is required prior to reconnection. If a visit is not required, the Inspector will arrange a connection.</p>
<p>Exclusions</p>	<ul style="list-style-type: none"> • Major work • Work not identified on the lists for minor work or like-for-like replacements • Low voltage service maintenance
<p>Eligibility Requirements for HV</p> <p>Substation Program</p>	<p>A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed.</p> <ul style="list-style-type: none"> • Electrician’s Certificate 309A or D, or 434A or B, or CET, or Professional Electrical Engineer • CET must be recognized by Ontario Association of Certified Engineering Technicians and Technologists (OACETT) • Professional Electrical Engineer must be recognized by the Professional Engineers of Ontario (PEO) • ≤4% Defect Ratio • 10 HV Substation Maintenance notifications filed and scheduled within the last 12 months
<p>Preauthorized Reconnections</p>	<p>A preauthorized reconnection is allowed for work defined as minor or like-for-like replacements at HV substations up to and including 115kV/230kV.</p>

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4.2 HIGH VOLTAGE (HV) SUBSTATION MAINTENANCE (CONT'D)

Oversight Response	1:5 Visit Ratio
Substation Maintenance Condition Report	<p>Contractors doing Substation Maintenance Work must complete the HV Substation Maintenance Condition Report and email it to substation.reports@electricalsafety.on.ca within 14 calendar days of the maintenance. Any concerns beyond the OESC rules specifically outlined in the Report should be noted in the Comments section.</p> <p>A template for the High Voltage Substation Maintenance Condition Report is available on the ESA website.</p> <p>When filing the notification, ensure the Site Name is the facility name rather than the name of an LEC who has subcontracted the maintenance work.</p> <p>When submitting the Report ensure the subject line of the email includes ESA notification #, site name and site address.</p> <p>If a Connection Authorization is not required for “minor” work, a notification does not need to be filed.</p>

4.3 LOW VOLTAGE (LV) SERVICE MAINTENANCE

Scope of Work	<ul style="list-style-type: none"> • Insulation resistance testing of service conductors • Torquing (tightening) connections in main switch • Repair switch mechanism • Repair parts related to main switch <p>If additional repairs are required to re-energize the service, the contractor is obligated to contact an ESA Inspector for approval to reconnect.</p> <p>If the maintenance is being done downstream, it is filed as a regular Commercial-Industrial notification and not as LV service maintenance.</p>
Eligibility Requirements for LV Substation Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed • ≤4% Defect Ratio • 10 LV Service Maintenance notifications filed and scheduled within the last 12 months
Preauthorized Reconnections	<ul style="list-style-type: none"> • ≤4,000A 600V for specific maintenance and alteration work listed in the scope • Does not include conversion from 1PH to 3PH or vice versa • Does not include Delta Wye Conversions
Oversight Response	1:5 Visit Ratio

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4.3 LOW VOLTAGE (LV) SERVICE MAINTENANCE (CONT'D)

LV Service Maintenance Condition Report

Contractors doing LV Service Maintenance Work must complete the **LV Service Maintenance Condition Report** and email it to substation.reports@electricalsafety.on.ca within 14 calendar days of the maintenance. Any concerns beyond the Code rules specifically outlined in the report should be noted in the Comments section.

A template for the Low Voltage Service Maintenance Condition Report is available on the ESA website.

When filing the notification, ensure the Site Name is the facility name rather than the name of an LEC who has subcontracted the maintenance work.

When submitting the report ensure the subject line of the email includes ESA notification #, site name and site address.

Failure to provide sufficient notice (<48 hours) may result in a mandatory site visit with applicable scheduled or unscheduled overtime fees.

4.4 POLE LINE MAINTENANCE

Scope of Work

Pre-arranged pole line maintenance work, on temporary and/or permanent pole lines <50kV

Allowable maintenance work is as follows:

Like-for-like replacements

1. Cable terminators
2. Fuse cut outs
3. Guy and anchor replacement
4. Insulator replacement
5. Lightning arresters
6. Pole replacement (incl. transformer pole with utility-owned 1PH transformer)
7. Pole top extension
8. Repair to grounding and bonding conductors
9. Replacement of cross arm
10. Secondary and HV cable repair
11. 1PH, ground-operated HV switch
12. Central metering service (CMS)

Gang-operated switches and other replacement installations not covered under the maintenance list of like-for-like above (and not including new installations or exclusions) are eligible for preauthorized reconnections and emergency reconnections. The work must be filed on a separate notification and full inspections will occur on this work the next time the Inspector is in the area.

After Hours Emergency Work – requiring a Connection Authorization

Under RBO, contractors eligible for the Pole Line Maintenance program who require a connection authorization in an after-hours, emergency situation will contact the ESA After Hours service by calling 1-877-ESA-SAFE (372-7233). The contractor will describe the work to the On-Call Inspector. The contractor must provide the ESA Account # and Utility meter # to the On-Call Inspector. The On-Call Inspector will determine if an inspection is required prior to reconnection. If a visit is not required, the Inspector will arrange for a connection. The notification must be filed with the Customer Service Centre the next business day.

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4.4 POLE LINE MAINTENANCE (CONT'D)

Exclusions	<ul style="list-style-type: none"> • All new work • Relocating poles • 3PH ground operated switch
Eligibility Requirements for Pole Line Maintenance Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor's Licence and the appropriate Certificates of Qualification for the work performed. • Electrician's Certificate 309A or D, or 434A or B • ≤4% Defect Ratio • 10 Pole Line Maintenance notifications filed and scheduled within the last 12 months
Preauthorized Reconnections	<p>Preauthorized reconnections are allowed for Pole Line Maintenance work <50kV, on both temporary and permanent pole lines.</p> <p>If the scheduled outage date is changed, the contractor must notify ESA no later than the morning of the scheduled outage.</p> <p>Pole line maintenance work must be scheduled during normal business hours.</p> <p>A preauthorized reconnection will not be sent for same-day emergencies, after-hours, on weekends, and/or holidays until the Inspector has been consulted.</p>
Oversight Response	1:5 Visit Ratio

4.5 CENTRAL METERING – RESIDENTIAL AND AGRICULTURAL

Scope of Work	<p>A preauthorized reconnection will be issued for a new central metering service.</p> <p>The work may include any/all of:</p> <ul style="list-style-type: none"> • Pole • Conductor repairs (Overhead or Underground) • Guy wire repair or replacement • Meter-base • Service box • Meter Relocation
Exclusions	<ul style="list-style-type: none"> • Central Metered Service where an existing single service does not exist • New Central Metering Service • Upgrade of Central Metered Service

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4.5 CENTRAL METERING – RESIDENTIAL AND AGRICULTURAL (CONT'D)

Eligibility Requirements for Central Metering Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed. • ≤4% Defect Ratio • 10 Central Meter notifications filed and scheduled within the last 12 months
Preauthorized Reconnections	Residential ≤200A, 120/240V 1PH ICIA ≤400A, 120/240V 1PH or 120/208V 3PH
Oversight Response	1:5 Visit Ratio

4.6 PERMANENT GENERATORS – RESIDENTIAL

Scope of Work	Permanently connected generators with or without a transfer switch.
Exclusions	<ul style="list-style-type: none"> • Temporary Generators • Transfer switch only • Generators not connected to an installation supplied by the Supply Authority with a certified transfer device; Generators that operate in parallel with the Supply Authority or utilize a closed transition transfer scheme; Interactive inverter; or power conditioning units connected to the Supply Authority system in accordance with Sections 64 and 84.
Eligibility Requirements for Permanent Generators Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed • ≤4% Defect Ratio • 10 generator notifications filed and scheduled within the last 12 months
Preauthorized Reconnections	Residential: ≤200A 120/240V
Oversight Response	1:5 Visit Ratio

4.7 POOLS, HOT TUBS AND SPLASH PADS – RESIDENTIAL

Scope of Work	Residential Pools, Hot Tubs and Splash Pads includes electrical installations normally done within a “single family dwelling” as defined in the current Wiring Fee Guide.
Eligibility Requirements for Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed • ≤4% Defect Ratio • 10 pool, hot tub, splash pad, pool bonding and/or pool equipment notifications filed and scheduled within the last 12 months
Preauthorized Reconnections	1:5 Visit Ratio

4.8 RETROFITTED LUMINAIRES

Scope of Work	The Acceptance of Retrofitted Luminaires processes are outlined in detail in a Guide posted on the ESA website. Like-for-like ballast or like-for-like driver changes can be filed under a Small Job as “replacement devices”.
Eligibility Requirements for Retrofitted Luminaires Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed • ≤4% Defect Ratio • 10 Retrofitted Luminaire notifications filed and scheduled within the last 12 months
Oversight Response	<p>1-200 T12-T8 ballast replacements = 1:10 Visit Ratio</p> <p>1-50 Retrofitted Luminaires = 1:10 Visit Ratio</p> <p>51-200 Retrofitted Luminaires = 1:5 Visit Ratio</p> <p>201+ Retrofitted Luminaires = 1:1 Visit Ratio</p>

4.9 SMALL JOBS – RESIDENTIAL, APARTMENT OR ICIA

Scope of Work	<ul style="list-style-type: none"> • A Residential or Apartment unit “Small Job” is defined as 1-10 outlets only. • An ICIA or Apartment common areas “Small Job” is defined as 1-20 outlets only. <p>Residential outlets include devices such as:</p> <ul style="list-style-type: none"> • Receptacles • Plugmold • Power outlets • Surge suppressors • Thermostats • Baseboard heaters • Dishwashers (lic) • Range hoods (lic) • Breaker(s) only • Switches • Fixtures • Yard lights • Track lighting • Ceiling fans • Exhaust fans • Security alarms devices • Power monitors <ol style="list-style-type: none"> 1. No work on service entrance equipment can be filed under Small Jobs 2. Small Jobs are filed as per OESC 2-004, when the work is ready for a Final Inspection 3. A job requiring a Rough-In Inspection and Final Inspection does not qualify as a Small Job <p>ICIA outlets include devices such as:</p> <ul style="list-style-type: none"> • Receptacles • Plugmold • Magnetic locks • Fixtures, including: <ul style="list-style-type: none"> • High bay • Track lighting • Sentinel lights • Bollards • Streetlights • Parking lot lights • Fans • Solenoids • Modular furniture connections and/or whip/power/jiffy poles • Low voltage controls • Control transformers <1KVA • Alternators ≤5kW • Generators ≤5kW • Fractional motors <1HP • Fire alarm pull stations • Annunciator panel • Detectors • Alarm bells • Self-contained signs • Pylon signs • Heat trace cable ≤5kW • Heating & cooking apparatus ≤5kW
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4.9 SMALL JOBS – RESIDENTIAL, APARTMENT OR ICIA (CONT'D)

Eligibility Requirements for Small Jobs Program	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification for the work performed. • ≤10% Defect Ratio • 10 notifications of any kind filed and scheduled within the past 12 months
Oversight Response	1:10 Visit Ratio
Additional Information Required	<ul style="list-style-type: none"> • To assist ESA with access to Residential sites, it is imperative that the contractor include the homeowner name and daytime phone #, as well as the LEC site contact name and contact number on the notification at the time of filing. • Contractors should advise their customers that ESA may contact them to arrange for an inspection.

4.10 RESIDENTIAL HVAC

Scope of Work	<p>Residential HVAC Installations include the following:</p> <ul style="list-style-type: none"> • Air conditioners • Water heaters • Furnaces • Heat recovery ventilators • Heat pumps • Air Handlers • Boilers • Gas fireplaces • Branch wiring only for HVAC equipment (LEC) • Branch wiring only for AC or Heat pump (non LEC) <p>A contractor must file notifications as per OESC rule 2-004. Residential HVAC notifications are filed when the installation is ready for Final Inspection.</p> <p>Non-LEC Process for AC Installations at a New Res: When an HVAC Contractor installs branch wiring at the rough-in stage and subsequently the AC unit is installed (note: it may not necessarily be the same HVAC Contractor), two HVAC small job notifications are to be filed.</p> <ul style="list-style-type: none"> • Run wire for future AC; Ready for Final • Installation of AC unit; Ready for Final
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4.10 RESIDENTIAL HVAC (CONT'D)

<p>Quality Assurance System (QAS)</p>	<p>Under RBO, HVAC contractor performance is managed by the Quality Assurance System (QAS).</p> <p>QAS works as follows:</p> <p>Phase I – visit 1 notification from a bucket of 10 (1:10)</p> <ul style="list-style-type: none"> • Access arrangements are made with the homeowner by ESA’s Customer Service Centre (CSC) for the notification • If one or more technical defects are issued on the scheduled notification: <ul style="list-style-type: none"> • A Notice of Deficiency is issued to the contractor; and • A second notification from the bucket is selected and scheduled Ready for Inspection • The CSC makes access arrangements with the homeowner for the second notification. • If the second notification has technical defects: <ul style="list-style-type: none"> • A Notice of Deficiency is issued to the contractor; and <p>Two additional notifications from the bucket are selected and scheduled Ready for Inspection</p> <p>Phase II – visit 2 notifications from a bucket of 10 (2:10)</p> <ul style="list-style-type: none"> • If technical defects are issued on the third and/or fourth notifications, all remaining notifications in the bucket are scheduled as Ready for Inspection and the contractor is moved to a higher visit ratio (Phase II) on future buckets <p>A contractor may also move to Phase II if:</p> <ul style="list-style-type: none"> • Technical defects are issued on a single notification in each of two buckets within a five-bucket cycle (for example, a technical defect is issued on a notification in “bucket 1” and a technical defect is issued on a notification in “bucket 5”). <p>The contractor remains at Phase II until five consecutive buckets (2:10 visits per bucket) with no technical defects is achieved.</p> <p>Fees do not increase when a contractor moves to Phase II.</p>
<p>Eligibility Requirements for HVAC Program</p>	<ul style="list-style-type: none"> • A valid ECRA/ESA Electrical Contractor’s Licence and the appropriate Certificates of Qualification as required under the Ontario College of Trades and Apprenticeship Act or as required under the Technical Standards and Safety Act for the work performed. • Electrician’s Certificate – 309A, C, D or E • Refrigeration and Air Conditioning Mechanic – 313A or D • Oil Burner Technician – OBT1, 2 • Gas Fitter Technician – G1, 2 • Plumber – 306A • 10 HVAC-specific notifications filed in the past 12 months
<p>Oversight Response</p>	<p>1:10 Visit Ratio</p>
<p>Additional Information Required</p>	<ul style="list-style-type: none"> • To assist ESA in gaining access to Residential sites, it is imperative that the contractor include the home owner name and daytime phone #, as well as the LEC site contact name and contact number on the notification at the time of filing. • Contractors should advise their customers that ESA may contact them to arrange for an inspection.

5.1 CUSTOMER COMMUNICATION

ESA will communicate visit intensions with the contractor via text and/or email based on the timing of the scheduled requests.

5.1.1 Scheduling with three or more business days notice

Contractors that provide ESA with an inspection request with three or more business days notice may, in the case of low and medium-risk notifications, receive a text and/or email letting them know that the notification has been passed without a visit. This notice may be sent up to two business days before the scheduled inspection date.

5.1.2 Scheduling with less than three business days notice

Contractors that provide ESA with an inspection request with less than three business days notice may, in the case of low and medium-risk notifications, receive a text and/or email letting them know that the notification has been passed without a visit. This notice may be sent the day of or up to 24 hours before the scheduled inspection date.

5.1.3 ESA advanced notice not received

If the contractor does not receive notice from ESA that the notification has been passed without a visit, they are to assume ESA will attend the site, as scheduled, and ensure there is access to the site until 4:30 pm.

5.2 SCHEDULING GUIDELINES UNDER RBO

Low-risk – Notifications ranked low-risk can be scheduled based on the contractor's preference, and are not restricted to the Inspector's scheduling calendar.

Medium-risk – Notifications ranked medium-risk can be scheduled based on the contractor's preference, and are not restricted to the Inspector's scheduling calendar.

High-risk – Notifications ranked high-risk will be scheduled on a day the Inspector is in that particular area based the Inspector's scheduling calendar.

100% Inspection – This category of notifications requires a site visit for a number of different reasons, such as:

- New Contractor with fewer than 10 notifications in the past 12 months and/or defect ratio >4%
- Contractor with fewer than 10 notifications in the past 12 months
- RBO selective inspection or program benefits have been removed for repeated OESC non-compliance
- The contractor has been issued a Life and/or Property defect

- The contractor has been Working Without a Notification (WWON)
- The contractor has specifically requested a site visit; or
- ESA determines all the contractor's work must be visited.

Regardless of the risk assigned, a notification flagged "100% Inspection response" will be scheduled on a day the Inspector is in that particular area based on the Inspector's scheduling calendar.

New Residential Notification – All requests for inspection (service, rough-in and final) are scheduled for the next business day or the day the contractor requests.

New residential notifications scheduled for final that have not received a visit at the rough-in or service stage of the project will be scheduled on a day the Inspector is in that particular area based on the scheduling calendar.

New residential notifications >7000ft² and/or >200A will receive a recommendation of 100% inspection for at least two visits with one being the service visit and scheduled on the day the Inspector is in the area based on the scheduling calendar.

A notification is scheduled when it is ready for inspection. The site must be accessible until 4:30 p.m. on the scheduled inspection date unless the contractor is notified otherwise by ESA.

5.3 INSPECTOR ACTIONS

For scheduled notifications, the Inspector can take one of three actions:

1. Visit the site the day the inspection is scheduled
2. Schedule the notification forward to a different day
3. Pass the inspection without a visit

If the Inspector schedules forward the notification or passes it without a visit, an automated text/email is sent to the work contact(s) assigned to the notification. The goal is to provide this notice to the contractor as soon as the visit status is known by the Inspector.

If the notification is scheduled forward by the Inspector, an update will be provided to the contractor with the proposed date. If the contractor is unable to arrange access, they need to contact the Customer Service Centre at 1-877-ESA-SAFE (372-7233) to request an alternate date.

LECs are able to request a site visit, regardless of the risk rating and recommendation.

6.1 PERFORMANCE MANAGEMENT

RBO benefits will be suspended for;

- Defect ratio greater than maximum allowed for the program (4% or 10%) for three consecutive months or notification volumes are below the minimum threshold for the past 12 months
 - Need 3 consecutive months of good performance to get privilege back
- Leaving a life and/or property hazard at the site
- Unauthorized connection
- 3x failure to file a notification in a three year period

The contractor has a shared responsibility for safety. If a contractor discovers existing hazards while on a work site, the contractor must advise ESA immediately.

6.2 CHALLENGE PROCESS

To ensure a fair and just system, a contractor may challenge the decision if selective inspection or program benefits are removed or denied. A written challenge must be submitted to the Wiring Office by fax 1-800-249-7667 or emailed to ESA.wiring@electricalsafety.on.ca within 15 business days from the date the benefits are removed. A decision is then rendered and communicated to the contractor within three weeks.

Glossary

12 Month Rolling Window: A one year time period where the start and end dates successively increase by one month, e.g. Dec/17 to Nov/18, Jan/18 to Dec/18, Feb/18 to Jan/19, etc.

Benefits and Programs: The terms “Benefits” and “Programs” are used to describe specific installations that receive unique treatment under RBO. There are 11 benefits or programs under RBO:

- Selective Inspection
- Preauthorized Reconnection
- High Voltage Substation Maintenance
- Low Voltage Service Maintenance
- Pole Line Maintenance
- Central Metering
- Generators (Permanent)
- Retrofitted Luminaires
- Pools, Hot Tubs and Splashpads (Residential)
- Small Jobs (Residential and ICIA)
- Residential HVAC

Defect: An electrical installation or condition that does not comply with the Ontario Electrical Safety Code (OESC).

Defect – Administrative: Administrative defects do not contribute to the defect ratio calculation; not all defects in Section 2 of the OESC are deemed Administrative.

Defect – History: Historical defect information is maintained on all RBO contractors. The defect ratio is based on the previous 12 months.

Defect – Life and/or Property (L&OP): High likelihood of shock or fire.

Defect – Postponement: Does not create undue hazard to persons or property, minor degree of deviation from OESC.

Defect – Warning: Low likelihood of shock, fire and/or low likelihood of exposure – or previous Postponement has not altered behaviour.

Hazard: A known condition identified by a person with knowledge that may result in an injury to a person or damage to property.

Notification: An application/permit filed with ESA by a party to create an inspection record for a wiring installation (new, renovation or maintenance) conducted by that party at a specific location (residential, apartment, industrial, commercial, institutional, or agricultural).

Service: The installation from the service box (main circuit breaker or main switch) or its equivalent up to and including the point at which the supply authority makes connection.

ESA offers an online service where account customers can:

- Submit notifications
- Check the status of and schedule existing notifications
- View defects and defect ratio calculation
- View customer specific RBO notification activity
- View customer specific RBO benefits and program eligibilities
- Reprint account and notification correspondence
- View account balance and pay invoices

Refer to ESA's website at www.esasafe.com for more information, or contact the Customer Service Centre at 1-877-ESA-SAFE (372-7233) and ask to create a profile to access and use the online system.



**Electrical
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Authority**


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