



REPORT FOR ACTION

Aligning Toronto Community Housing Corporation's Electrical Preventive Maintenance Program with CSA Z463, Maintenance of Electrical Systems

Date: November 23, 2020

To: Planning & Housing Committee

From: President and Chief Executive Officer, Toronto Community Housing Corporation

Wards: All

SUMMARY

At its meeting on October 2, 2019, City Council requested that the Toronto Community Housing Corporation ("TCHC") Board of Directors direct the President and Chief Executive Officer, TCHC to adopt, Canadian Standards Association Z463-18 ("CSA Z463"), Maintenance of Electrical Systems, or equivalent, as the electrical maintenance standard for TCHC buildings, including both direct managed and contract managed buildings, and report back to the appropriate committee.

This report responds to Council's request. TCHC staff underwent a review and analysis of CSA Z463, and compared the maintenance strategies outlined in the standard against TCHC's electrical maintenance requirements and standards. The Electrical Safety Authority ("ESA") and the Chair of the CSA Z463 Standard were consulted throughout the assessment.

TCHC's Electrical Preventive Maintenance Program meets the intent of CSA Z463 and adheres to a combination of strategy types identified in the standard. It is important to note that TCHC's electrical maintenance requirements and standards are the same for both contract managed and direct managed buildings. Contract property managers are responsible for implementing maintenance specifications, as provided by TCHC.

RECOMMENDATIONS

The President and Chief Executive Officer, Toronto Community Housing Corporation, recommends that:

1. The Planning and Housing Committee receive this report for information.

FINANCIAL IMPACT

There are no financial implications resulting from this report.

DECISION HISTORY

On February 26, 2019, City Council adopted [MM3.4 Review the Safety of Electrical Systems at Toronto Community Housing Corporation Properties](#), with recommendations for TCHC to review the state of repairs and maintenance needed of the major electrical services in its multi-residential, high-rise portfolio.

On October 2, 2019, City Council adopted the motion to amend [PH8.1 Review of Electrical Systems at Toronto Community Housing: Updated on Maintenance and Upgrade Processes for Electrical Services](#), which requested that the TCHC Board of Directors direct the President and Chief Executive Officer, TCHC to adopt, CSA Z463, Maintenance of Electrical Systems, or equivalent, as the electrical maintenance standard for TCHC buildings, for both buildings internally managed and buildings contracted out to third-party companies and report back to the appropriate committee.

On September 25, 2020, TCHC's Board of Directors approved the report Item [2J - Updates to TCHC's Electrical Preventive Maintenance Program](#), which recommended that TCHC report to City Council on alignment of the Electrical Preventive Maintenance Program with CSA Z463, and additional electrical maintenance requirements and standards that will be added to the program starting in 2021.

COMMENTS

CSA Z463 Maintenance of Electrical Systems

CSA Z463 is the Canadian national standard for the maintenance of electrical systems. It is not a regulation, however, it may be used to demonstrate compliance with, and exceed the requirements of, the Ontario Electrical Safety Code for maintenance and operation of building electrical systems.

The standard functions as a methodology in developing or improving electrical maintenance programs through the selection of appropriate maintenance strategies,

equipment assessments and procedures to ensure the safety and reliability of electrical equipment, based on equipment criticality and risk of incident.

A variety of strategies for electrical maintenance are identified within CSA Z463. Strategies and options are considered based on factors, including likelihood of equipment failure, and the severity of the outcomes due to equipment failure. It is worth noting, not all electrical maintenance is preventive, and planning for safe and reliable equipment failure is an acceptable maintenance strategy depending upon the condition of building equipment. Maintenance strategies in the standard also give consideration to industry, building need, electrical equipment condition and available resources.

CSA Z463 provides discretion to make decisions suitable to the needs and condition of facilities, based on the criticality and risk associated with failure of electrical equipment. The application of the standard also offers a responsive approach to capital replacement. Flexibility in the execution of the standard allows for an effective allocation of resources to electrical equipment, ensuring the sustained livability of the buildings for residents.

Alignment of TCHC's Electrical Preventive Maintenance Program with CSA Z463

Following City Council direction, TCHC staff underwent a comprehensive review and analysis of CSA Z463, and compared the maintenance strategies outlined in the standard against TCHC's program. TCHC's Electrical Preventive Maintenance Program meets the intent of CSA Z463 and adheres to a combination of strategy types identified in the standard.

TCHC's electrical maintenance requirements and standards are the same for both contract managed and direct managed buildings. Contract property managers are responsible for implementing maintenance requirements and specifications, as provided by TCHC.

Upgrades to electrical equipment and infrastructure will continue to be made as needed through demand and planned capital programs.

Stakeholder Feedback

The ESA and the Chair of the Technical Committee of CSA Z463 Standard were consulted throughout the review and analysis of CSA Z463, and TCHC's assessment of the electrical maintenance requirements and standards. McGregor Allsop also provided a third-party analysis of the programs alignment with CSA Z463 and industry best practice.

Statement from Kerry Heid, the Chair of the Technical Committee, CSA Z468 Maintenance of Electrical System (Executive Consultant, Shermco Industries):

- *"As part of TCHC's process to review CSA Z463 and assess alignment of its electrical maintenance program with the standard, I provided advice and direction*

on how best to apply the standard when designing or improving an electrical maintenance program. I am confident that TCHC is applying and adopting the electrical maintenance strategies outlined in the standard as intended.”

Statement from ESA:

- *“ESA, as the provincial regulator for electrical safety, has been supporting TCHC, Canada’s largest landlord, in efforts to refine the practices to provide for the ongoing safe and reliable operation of critical electrical infrastructure. Through referencing standards including CSA Z463, Maintenance of Electrical Systems, TCHC is improving their electrical maintenance program. This effort will assist in demonstrating compliance with the Ontario Electrical Safety Code and help provide that electrical equipment is kept in safe and proper working condition. The commitment that TCHC has shown in the continuous improvement of electrical maintenance practices will help reduce the likelihood of incidents that would result in personal injury and property loss. ESA looks forward to continue working with TCHC on innovative approaches to improve the maintenance of electrical equipment and influencing the rental sector as an industry leader.”*

Updates to TCHC's Electrical Preventive Maintenance Program

While TCHC’s existing requirements and specifications for electrical maintenance align with the intent of CSA Z463, TCHC will be adopting the following maintenance activities outlined below as part of its Electrical Preventive Maintenance Program. This effort will ensure the continued improvement of electrical maintenance practices for the reliability and safety of TCHC properties and tenants.

TCHC’s direct managed portfolio will continue to be separated into three groups that rotate through a three year maintenance cycle. The following outlines at a high-level, the existing maintenance activities, and what is being added to the program.

- Year 1: Infrared and thermography testing is completed on main electrical panels identifying ‘hot’ spots that need to be further inspected and/or corrected.
 - o Enhance thermographic scope definition to improve photographic documentation and standardize electrical maintenance records across the portfolio.
- Year 3: Tightening and lubricating is completed on main electrical panels to identify and correct any deficiencies in the physical operations of electrical systems.
 - o Add grounding, bonding and lightening protection, as well as dielectric testing to improve the maintenance program and enhance overall electrical safety.

The updated set of standards as detailed above will be provided to contract property managers, who will be responsible for amending their electrical maintenance programs to ensure alignment with TCHC’s requirements and specifications.

Conclusion

TCHC takes electrical safety and the safety of tenants very seriously. In keeping with CSA Z463, staff will implement a model of continuous improvement, and make ongoing adjustments to the program as required, based on the evolving needs of the portfolio.

Staff will continue to maintain a close working relationship with the ESA to ensure that TCHC's Electrical Preventive Maintenance Program demonstrates compliance with the Ontario Electrical Safety Code and references any relevant national standards. This includes partnering on various projects and programs to develop innovative tools and mechanisms for continuous improvement in electrical maintenance practices, placing TCHC at the forefront of electrical safety and maintenance for residential buildings.

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