

1 **RATE BASE OVERVIEW**

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3 This schedule provides an overview of Toronto Hydro’s rate base in accordance with section
4 2.2.1 of the OEB’s Filing Requirements for Electricity Distribution Rate Applications
5 (December 15, 2022) (the “Filing Requirements”).

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7 Continuity statements for Toronto Hydro’s fixed assets, including interest during
8 construction and overhead costs, are filed at Exhibit 2A, Tab 1, Schedule 2. Toronto Hydro
9 confirms that:

- 10 • the continuity statements provide year-end balances and include interest during
11 construction, and all overheads;
- 12 • the opening and closing balances of gross assets and accumulated depreciation that
13 are used to calculate the fixed asset component of rate base correspond to the
14 respective balances in the fixed asset continuity statements; and
- 15 • the continuity statements reconcile to calculated depreciation expenses (Exhibit 2A,
16 Tab 2, Schedule 1) and are presented by asset account.

17

18 **1. RATE BASE**

19 Rate base consists of Net Book Value of PP&E (i.e. Gross Book Value minus accumulated
20 depreciation) less Construction Work In-Progress (CWIP). Rate Base also includes a working
21 capital allowance (“WCA”) based on the cost of power and controllable expenses such as
22 operations and maintenance, billing, collections and administration expenses.

23

24 Tables 1 and 2 below summarize Toronto Hydro’s rate base values for 2020-2024 and 2025-
25 2029 respectively, including opening and closing PP&E net book values (“NBV”).

1 **Table 1: 2020-2024 Rate Base Summary (\$ Millions)**

	OEB Approved	Actuals			Bridge	
	2020	2020	2021	2022	2023	2024
Opening PP&E NBV	4,229.4	4,233.2	4,419.2	4,628.1	4,893.9	5,244.3
In-Service Additions	527.4	447.9	485.2	554.4	607.9	606.3
Depreciation	(265.4)	(262.0)	(276.2)	(288.7)	(257.4)	(271.8)
Closing PP&E NBV	4,491.3	4,419.2	4,628.1	4,893.9	5,244.3	5,578.8
Monthly Avg PP&E NBV	4,298.6	4,284.3	4,457.7	4,686.3	4,954.3	5,348.5
Working Capital Allowance	216.2	249.8	217.2	220.7	240.6	248.0
Rate Base	4,514.8	4,534.1	4,674.9	4,907.0	5,194.9	5,596.5

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3 **Table 2: 2025-2029 Rate Base Summary (\$ Millions)**

	Forecast				
	2025	2026	2027	2028	2029
Opening PP&E NBV	5,578.8	5,937.9	6,335.9	6,809.6	7,234.4
In-Service Additions	645.9	699.4	795.6	769.2	875.4
Depreciation	(286.8)	(301.4)	(321.9)	(344.3)	(357.1)
Closing PP&E NBV	5,937.9	6,335.9	6,809.6	7,234.4	7,752.7
Monthly Avg PP&E NBV	5,669.8	6,047.4	6,472.2	6,927.1	7,352.5
Working Capital Allowance	231.5	237.1	242.5	250.8	255.6
Rate Base	5,901.2	6,284.5	6,714.7	7,177.9	7,608.2

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5 As further explained below, rate base variances are primarily driven by changes in PP&E NBV
6 due to in-service additions derived from the capital programs in Exhibit 2B. Depreciation and
7 Working Capital Allowance variances are discussed in Exhibit 2A, Tab 2, Schedule 1, and
8 Exhibit 2A, Tab 3, Schedule 1, respectively.

9

10 Actual rate base in 2020 was approximately \$19.2 million higher than the rate base approved
11 by the OEB in the last rebasing application (EB-2018-0165) because of a higher than
12 forecasted WCA (\$33.5 million), offset by lower than forecasted in-service additions (\$14.3
13 million), resulting primarily from lower expenditures in System Renewal programs.

1 **2. IN-SERVICE ADDITIONS (ISA)**

2 Toronto Hydro’s actual ISAs are calculated in accordance with its Capitalization policy set out
 3 in Exhibit 2A, Tab 4, Schedule 1. The methodology used to forecast ISAs by asset class is
 4 consistent with the last rebasing application (EB-2018-0165).¹

5

6 Table 3 below compares the total in-service additions included in base rates per the 2020-
 7 2024 Draft Rate Order (DRO) in EB-2018-0165, and the 2020-2024 actual and forecasted in-
 8 service additions based on the actual and forecasted expenditure levels in Exhibit 2B. In
 9 accordance with the OEB’s direction in EB-2018-0165, this information is provided at the
 10 investment category level.² Appendix A to this schedule provides an annual breakdown of
 11 Table 3.

12

13 **Table 3: 2020-2024 In-Service Additions Variances (\$ Millions)**

	2020-2024 DRO	2020-2024 Actual/Bridge	Var. (\$)	Var. (%)
System Access	469.1	621.7	152.7	32.5%
System Renewal	1,535.8	1,407.7	(128.1)	-8.3%
System Service	259.8	270.5	10.8	4.1%
General Plant	403.7	396.6	(7.1)	-1.8%
Other	5.1	5.2	0.1	1.1%
Net In-Service Additions	2,673.4	2,701.7	28.3	1.1%

14

15 Total in-service additions for 2020-2024 are expected to be approximately \$28.3 million or
 16 1 percent higher than the in-service additions per the DRO. The key variances are as follows:

¹ In the response to Undertaking JTC3.1 in the utility’s last rebasing application, Toronto Hydro noted that the methodology to forecast ISA is subject to certain limitations which may undermine the veracity of these forecasts. For example, historical conversion ratios of capital expenditures to in-service additions to the program are based on aggregate values for distribution capital, and may not be entirely aligned with program level assumptions.

² EB-2018-0165, Decision and Order (December 19, 2019) at page 195.

1 System Access related in-service additions are forecasted to be \$152.7 million greater than
2 the amounts included in base rates per the DRO primarily due to increased expenditures in
3 demand-driven programs such as Customer Connections (Exhibit 2B, Section E5.1) and Load
4 Demand (Exhibit 2B, Section E5.3). Toronto Hydro had to make additional investments in
5 these programs in order to fulfil its core obligations to connect new and expanded services
6 to the grid, including a higher than anticipated volume of system access requests for large
7 projects (>5 MVA demand) over this period. For more details about System Access variances
8 please refer to Exhibit 2B, Section E4.1.1.

9

10 System Service related in-service additions are forecasted to be \$10.8 million greater than
11 the amounts included in base rates per the DRO primarily due to higher expenditures in the
12 Stations Expansion program (Exhibit 2B, Section E7.4) related to Hydro One contribution for
13 the Horner TS expansion project. For more details about System Service variances please
14 refer to Exhibit 2B, Section E4.1.3.

15

16 System Renewal related expenditures are forecasted to be \$128.1 million lower than the
17 amounts included in base rates per the DRO primarily due to lower expenditures in the
18 Underground System Renewal programs (Exhibit 2B, Section E6.2 and E6.3) and Overhead
19 System Renewal program (Exhibit 2B, Section E6.5). Toronto Hydro decided to defer
20 expenditures in these programs in an effort to manage capital funding pressures driven by
21 the capital stretch factor and by higher than forecasted expenditures in System Access and
22 Service as noted above. For more details about System Renewal variances please refer to
23 Exhibit 2B, Section E4.1.2.

24

25 General Plant related in-service additions are forecasted to be \$7.1 million lower than the
26 amounts included in base rates per the DRO primarily due to lower expenditures in the IT/OT

1 Systems program (Exhibit 2B, Section E8.4) related to the decision to defer the Enterprise
2 Resource Planning (ERP) upgrade based on new information that the vendor (SAP) will
3 continue to support the current system until 2027 with extended support available until
4 2030. For more details about General Plant variances please refer to Exhibit 2B, Section
5 E4.1.4.

6

7 **3. PROPERTY, PLANT AND EQUIPMENT (PP&E)**

8 Tables 4 and 5 below present a summary of Toronto Hydro’s Gross and Net PP&E, before
9 and after accumulated depreciation, for the current 2020-2024 rate period and future 2025-
10 2029 rate period. Toronto Hydro confirms that the PP&E net book values (NBV) reported
11 under the Reporting and Record-keeping Requirements (RRR) are aligned with the amounts
12 utilized for rate base purposes.³

13

14 **Table 4: 2020-2024 Gross and Net PP&E – Years Ending December 31 (\$ Millions)**

	Actual			Bridge	
	2020	2021	2022	2023	2024
Land and Buildings	185.4	190.5	205.3	222.1	229.9
Other Distribution Assets	505.7	560.4	674.0	722.8	815.8
General Plant	248.1	262.5	270.0	311.6	327.9
TS Primary Above 50	40.2	40.2	37.9	75.7	82.1
Distribution System	250.9	273.6	298.6	314.5	332.9
Poles, Wires	3,475.0	3,820.4	4,185.9	4,605.8	5,017.8
Contributions and Grants	(334.7)	(459.5)	(586.0)	(745.3)	(898.8)
Line Transformers	716.0	796.4	867.2	942.2	1,027.2
Services and Meters	379.9	398.3	418.4	439.9	476.5
Equipment	166.5	184.3	204.8	239.7	262.1

³ In past applications, the OEB approved planned investments in certain assets that meet the OEB’s definition for high voltage assets. This includes qualifying assets at the Copeland TS and contributions paid to HONI for work conducted on the transmission system. Toronto Hydro also proposes investments in high voltage assets in its 2025-2029 application. Once incurred, actual costs of such assets are separately reported annually as part of RRR (section 2.1.5.2).

	Actual			Bridge	
	2020	2021	2022	2023	2024
IT Assets	94.6	110.0	121.1	138.3	154.6
Gross Assets	5,727.5	6,177.1	6,697.2	7,267.3	7,827.9
Accumulated Depreciation	(1,308.4)	(1,548.9)	(1,803.4)	(2,023.0)	(2,249.2)
Closing PP&E NBV	4,419.2	4,628.1	4,893.9	5,244.3	5,578.8

Note: Variances due to rounding may exist

1

2 **Table 5: 2025-2029 Gross and Net PP&E – Years Ending December 31 (\$ Millions)**

	Forecast				
	2025	2026	2027	2028	2029
Land and Buildings	237.7	249.1	268.4	279.9	302.3
Other Distribution Assets	877.7	940.3	1,036.6	1,102.5	1,225.1
General Plant	338.7	358.0	382.8	413.1	459.1
TS Primary Above 50	81.3	80.5	79.8	79.0	78.3
Distribution System	368.5	408.1	455.6	492.5	524.2
Poles, Wires	5,426.7	5,906.2	6,400.8	6,934.5	7,504.3
Contributions and Grants	(1,008.6)	(1,155.5)	(1,294.0)	(1,448.4)	(1,617.7)
Line Transformers	1,110.7	1,193.1	1,277.9	1,367.7	1,461.5
Services and Meters	526.6	584.7	647.6	698.9	733.9
Equipment	286.7	307.3	325.2	345.2	370.6
IT Assets	176.1	195.8	226.7	254.7	295.1
Gross Assets	8,422.1	9,067.7	9,807.2	10,519.6	11,336.6
Accumulated Depreciation	(2,484.2)	(2,731.8)	(2,997.7)	(3,285.2)	(3,583.9)
Closing PP&E NBV	5,937.9	6,335.9	6,809.6	7,234.4	7,752.7

Note: Variances due to rounding may exist

3

4 **3.1 2020 versus 2021 Actual**

5 Table 6 below presents the 2020 versus 2021 actual PP&E NBV values by asset class.

1 **Table 6: 2020 Historical versus 2021 Historical PP&E NBV (\$ Millions)⁴**

Asset Class	2020 Actual	2021 Actual	Variance (\$)	Variance (%)
Land and Buildings	185.4	190.5	5.2	3%
Other Distribution Assets	505.7	560.4	54.7	11%
General Plant	248.1	262.5	14.5	6%
TS Primary Above 50	40.2	40.2	-	0%
Distribution System	250.9	273.6	22.7	9%
Poles, Wires	3,475.0	3,820.4	345.4	10%
Contributions and Grants	(334.7)	(459.5)	(124.8)	37%
Line Transformers	716.0	796.4	80.3	11%
Services and Meters	379.9	398.3	18.5	5%
Equipment	166.5	184.3	17.8	11%
IT Assets	94.6	110.0	15.3	16%
Gross Assets	5,727.5	6,177.1	449.5	8%
Accumulated Depreciation	(1,308.4)	(1,548.9)	(240.6)	18%
Closing PP&E NBV	4,419.2	4,628.1	209.0	5%

2

3 From 2020 to 2021, PP&E by asset class variances were as follows:

- 4
- 5 • **Land and Buildings Assets** increased by \$5.2 million or 3 percent primarily due to in-
 - 6 service additions related to (1) Facilities Management and Security (\$2.7 million) as
 - 7 detailed in Exhibit 2B, Section E8.2 and (2) Stations Renewal (\$2.5 million) as detailed
 - 8 in Exhibit 2B, Section E6.6.
 - 9 • **Other Distribution Assets** increased by \$54.7 million or 11 percent, primarily due to
 - 10 (1) IT software additions (\$24.4 million) as detailed in Exhibit 2B, Section E8.4 and (2)
 - 11 capital contributions paid to Hydro One (\$18.2 million) as detailed in Exhibit 2B,
 - Section E7.4.

⁴ Further breakdown of the categories and amounts presented in Tables 3 to 7 is provided in fixed asset continuity schedules provided in Exhibit 2A, Tab 1, Schedule 2, Appendix 2-BA.

- 1 • **General Plant Assets** increased by \$14.5 million or 6 percent primarily due to the in-
2 service amounts related to Facilities Management and Security (\$11.2 million) as
3 detailed in Exhibit 2B, Section E8.2.
- 4 • **Distribution System Assets** increased by \$22.7 million or 9 percent, primarily due to
5 the completion of Stations Renewal projects (\$20.9 million) as outlined Exhibit 2B,
6 Section E6.6.
- 7 • **Poles and Wires Assets** increased by \$345.4 million or 10 percent as a result of in-
8 service additions from investments in the following programs: Customer
9 Connections (Exhibit 2B, Section E5.1), Externally Initiated Plant Relocations &
10 Expansions (Exhibit 2B, Section E5.2), Underground System Renewal – Horseshoe
11 (Exhibit 2B, Section E6.2), Reactive and Corrective Capital (Exhibit 2B, Section E6.7)
12 and the Overhead System Renewal Program (Exhibit 2B, Section E6.5). Of these
13 programs, the largest increases were in the Customer Connections (\$107.5 million)
14 and Externally Initiated Plant Relocations & Expansions programs (\$64 million) due
15 to external factors.
- 16 • **Contributions and Grants** increased by \$124.8 million or 37 percent due to customer
17 and third-party contributions related to the Customer Connections and EIPRE
18 programs. These contributions resulted in a reduction to NBV.
- 19 • **Line Transformers** increased by \$80.3 million or 11 percent primarily from in-service
20 additions related to Reactive and Corrective Capital program (\$25.2 million) as
21 outlined in Exhibit 2B, Section E6.7 and the Customer Connections program (\$16.8
22 million) as outlined in Exhibit 2B, Section E5.1.
- 23 • **Services and Meter assets** increased by \$18.5 million or 5 percent primarily due to
24 the Customer Connections (Exhibit 2B, Section E5.1) and the Metering (Exhibit 2B,
25 Section E5.4) programs.

- 1 • **Equipment Assets** increased by \$17.8 million or 11 percent primarily due to
- 2 investment in the Network Condition Monitoring & Control (Exhibit 2B, Section E7.3)
- 3 and the Fleet and Equipment Services (Exhibit 2B, Section E8.3) programs.
- 4 • **IT assets** increased by \$15.3 million or 16 percent primarily due to investment in
- 5 hardware equipment within the IT/OT program (Exhibit 2B, Section E8.4).

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7 **3.2 2021 Historical versus 2022 Historical PP&E NBV**

8 Table 7 below presents the 2020 versus 2021 actual PP&E NBV values by asset class.

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10 **Table 7: 2021 Historical versus 2022 Historical PP&E NBV (\$ Millions)**

	2021 Actual	2022 Actual	Variance (\$)	Variance (%)
Land and Buildings	190.5	205.3	14.8	8%
Other Distribution Assets	560.4	674.0	113.6	20%
General Plant	262.5	270.0	7.5	3%
TS Primary Above 50	40.2	37.9	(2.3)	(6%)
Distribution System	273.6	298.6	25.0	9%
Poles, Wires	3,820.4	4,185.9	365.5	10%
Contributions and Grants	(459.5)	(586.0)	(126.4)	28%
Line Transformers	796.4	867.2	70.8	9%
Services and Meters	398.3	418.4	20.1	5%
Equipment	184.3	204.8	20.5	11%
IT Assets	110.0	121.1	11.1	10%
Gross Assets	6,177.1	6,697.2	520.2	8%
Accumulated Depreciation	(1,548.9)	(1,803.4)	(254.4)	16%
Closing PP&E NBV	4,628.1	4,893.9	265.8	6%

1 From 2021 to 2022, PP&E by asset class variances were as follows:

- 2 • **Land and Buildings Assets** increased by \$14.8 million or 8 percent primarily due to
3 investments in the Facilities Management and Security program (Exhibit 2B, Section
4 E8.2).
- 5 • **Other Distribution Assets** increased by \$113.6 million or 20 percent primarily due to
6 capital contributions paid to Hydro One related to the expansion of Horner TS
7 (Exhibit 2B, Section E7.4) and IT software additions (Exhibit 2B, Section E8.4).
- 8 • **General Plant Assets** increased by \$7.5 million or 3 percent primarily due to the in-
9 service amounts in the Facilities Management and Security program (Exhibit 2B,
10 Section E8.2).
- 11 • **Distribution System Assets** increased by \$25 million or 9 percent primarily due to in-
12 service additions related to Copeland TS Phase 2 project within the Stations
13 Expansion program (Exhibit 2B, Section E7.4).
- 14 • **Poles and Wires** increased by \$365.5 million, or 10 percent, as a result of in-service
15 additions from investments in the following programs: Customer Connections
16 (Exhibit 2B, Section E5.1), Externally Initiated Plant Relocations & Expansion (Exhibit
17 2B, Section E5.2), Underground System Renewal – Horseshoe (Exhibit 2B, Section
18 E6.2), Load Demand (Exhibit 2B, Section E5.3), Reactive and Corrective Capital
19 (Exhibit 2B, Section E6.7) and the Overhead System Renewal Program (Exhibit 2B,
20 Section E6.5). Of these programs, the largest increases were in the Customer
21 Connections program (\$99.2 million) and Externally Initiated Plant Relocations &
22 Expansion (\$80.8 million) due to external demand.
- 23 • **Contributions and grants** increased by \$126.4 million or 28 percent due to customer
24 and third-party contributions related to the Customer Connections and Externally
25 Initiated Plant Relocations & Expansions programs. The contributions resulted in a
26 reduction to NBV.

- 1 • **Line transformers** increased by \$70.8 million or 9 percent primarily from in-service
 2 additions related to Reactive and Corrective Capital (Exhibit 2B, Section E6.7),
 3 Network System Renewal (Exhibit 2B, E6.4), Customer Connections (Exhibit 2B,
 4 Section E5.1) and Overhead System Renewal (Exhibit 2B, Section E6.5) programs.
- 5 • **Services and meter assets** increased by \$20.1 million or 5 percent primarily due to
 6 the Customer Connections (Exhibit 2B, Section E5.1) and Metering (Exhibit 2B,
 7 Section E5.4) programs.
- 8 • **Equipment assets** increased by \$20.5 million or 11 percent primarily due to
 9 investment in the Network Condition Monitoring & Control (Exhibit 2B, Section E7.3)
 10 and the Fleet and Equipment Services (Exhibit 2B, Section E8.3) programs.
- 11 • **IT assets** increased by \$11.1 million or 10 percent primarily due to investment in
 12 hardware equipment within the IT/OT Systems program (Exhibit 2B, Section E8.4).

13

14 **3.3 2022 Historical versus 2023 Bridge PP&E NBV**

15 Table 8 below presents the 2022 actual versus 2023 bridge PP&E NBV values by asset class.

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17 **Table 8: 2022 Historical versus 2023 Bridge PP&E NBV (\$ Millions)**

	2022 Actual	2023 Bridge	Variance (\$)	Variance (%)
Land and Buildings	205.3	222.1	16.8	8%
Other Distribution Assets	674.0	722.8	48.8	7%
General Plant	270.0	311.6	41.7	15%
TS Primary Above 50	37.9	75.7	37.8	100%
Distribution System	298.6	314.5	15.8	5%
Poles, Wires	4,185.9	4,605.8	419.8	10%
Contributions and Grants	(586.0)	(745.3)	(159.4)	27%
Line Transformers	867.2	942.2	75.0	9%
Services and Meters	418.4	439.9	21.4	5%
Equipment	204.8	239.7	34.9	17%

	2022 Actual	2023 Bridge	Variance (\$)	Variance (%)
IT Assets	121.1	138.3	17.3	14%
Gross Assets	6,697.2	7,267.3	570.1	9%
Accumulated Depreciation	(1,803.4)	(2,023.0)	(219.6)	12%
Closing PP&E NBV	4,893.9	5,244.3	350.5	7%

1

2 From 2022 to 2023, PP&E by asset class variances are forecasted as follows:

- 3
- 4 • **Land and Buildings Assets** are forecasted to increase by \$16.8 million or 8 percent
5 primarily due to in-service amounts related to Copeland TS Phase 2 within the
6 Stations Expansion program (Exhibit 2B, Section E7.4) and Facilities Management and
7 Security (Exhibit 2B, Section E8.2)
 - 8 • **Other Distribution Assets** are forecasted to increase by \$48.8 million or 7 percent
9 primarily due to IT software additions (Exhibit 2B, Section E8.4).
 - 10 • **General Plant Assets** are forecasted to increase by \$41.7 million or 15 percent
11 primarily due to the in-service amounts related to Control Operations Reinforcement
12 program (Exhibit 2B, Section E4.1.4) and the Facilities Management and Security
13 program (Exhibit 2B, Section E8.2).
 - 14 • **TS Primary Above 50** assets are forecasted to increase by \$37.8 million or 100
15 percent due to the in-service amounts related to Copeland TS Phase 2 project in the
16 Stations Expansion program (Exhibit 2B, Section E7.4).
 - 17 • **Distribution System assets** are forecasted to increase by \$15.8 million or 5 percent,
18 primarily due to in-service additions related to Stations Renewal projects (Exhibit 2B,
19 Section E6.6).
 - 20 • **Poles and Wires Assets** are forecasted to increase by \$419.8 million, or 10 percent,
21 as a result of in-service additions from investments in the following programs:
22 Customer Connections (Exhibit 2B, Section E5.1), Externally Initiated Plant
Relocations & Expansion (Exhibit 2B, Section E5.2), Underground System Renewal –

1 Horseshoe (Exhibit 2B, Section E6.2), Reactive and Corrective Capital (Exhibit 2B,
2 Section E6.7) and the Overhead System Renewal Program (Exhibit 2B, Section E6.5).
3 Of these programs, the largest increases were from the Customer Connections
4 (\$137.4 million) and the Externally Initiated Plant Relocations & Expansion (\$80.9
5 million) programs, followed by increases in planned renewal work as part the
6 Underground System Renewal – Horseshoe program (\$68.1 million) and other
7 renewal work programs noted above.

- 8 • **Contributions and Grants** are forecasted to increase by \$159.4 million or 27 percent
9 due to customer and third-party contributions related to the Customer Connections
10 and Externally Initiated Plant Relocations & Expansion programs. The contributions
11 resulted in a reduction to NBV.
- 12 • **Line Transformers** are forecasted to increase by \$75.0 million or 9 percent primarily
13 due to Reactive and Corrective Capital (Exhibit 2B, Section E6.7) and the Customer
14 Connections (Exhibit 2B, Section E5.1) programs.
- 15 • **Services and Meter Assets** are forecasted to increase by \$21.4 million or 5 percent
16 primarily due to the Customer Connections (Exhibit 2B, Section E5.1) and the
17 Metering (Exhibit 2B, Section E5.4) programs.
- 18 • **Equipment Assets** are forecasted to increase by \$34.9 million or 17 percent, primarily
19 due to investment in the Fleet and Equipment Services (Exhibit 2B, Section E8.3) and
20 the Network Condition Monitoring & Control (Exhibit 2B, Section E7.3) programs.
- 21 • **IT assets** are forecasted to increase by \$17.3 million or 14 percent primarily due to
22 investment in hardware within the IT/OT program (Exhibit 2B, Section E8.4).

23

24 **3.4 2023 Bridge versus 2024 Bridge PP&E NBV**

25 Table 9 below presents the 2023 bridge versus 2024 bridge PP&E NBV values by asset class.

1 **Table 9: 2023 Bridge versus 2024 Bridge PP&E NBV (\$ Millions)**

	2023 Bridge	2024 Bridge	Variance (\$)	Variance (%)
Land and Buildings	222.1	229.9	7.8	3%
Other Distribution Assets	722.8	815.8	93.0	13%
General Plant	311.6	327.9	16.2	5%
TS Primary Above 50	75.7	82.1	6.4	8%
Distribution System	314.5	332.9	18.4	6%
Poles, Wires	4,605.8	5,017.8	412.1	9%
Contributions and Grants	(745.3)	(898.8)	(153.4)	21%
Line Transformers	942.2	1,027.2	85.0	9%
Services and Meters	439.9	476.5	36.6	8%
Equipment	239.7	262.1	22.4	9%
IT Assets	138.3	154.6	16.2	12%
Gross Assets	7,267.3	7,827.9	560.6	8%
Accumulated Depreciation	(2,023.0)	(2,249.2)	(226.2)	11%
Closing PP&E NBV	5,244.3	5,578.8	334.4	6%

2

3 From 2023 to 2024, PP&E by asset class variances are forecasted as follows:

- 4
- 5 • **Land and Buildings Assets** are forecasted to increase by \$7.8 million or 3 percent
 - 6 primarily due to in-service amounts related to Facilities Management and Security
 - 7 (Exhibit 2B, Section E8.2).
 - 8 • **Other Distribution Assets** are forecasted to increase by \$93 million or 13 percent,
 - 9 primarily due to IT software additions (Exhibit 2B, Section E8.4), including the
 - 10 Customer Information System upgrade project (\$64.7 million).
 - 11 • **General Plant Assets** are forecasted to increase by \$16.2 million or 5 percent
 - 12 primarily due to the in-service amounts related to the Facilities Management and
 - Security program (Exhibit 2B, Section E8.2).

- 1 • **TS Primary Above 50** assets are forecasted to increase by \$6.4 million or 8 percent
2 due to the in-service amounts related to Copeland TS Phase 2 project in the Stations
3 Expansion program (Exhibit 2B, Section E7.4).
- 4 • **Distribution System assets** are forecasted to increase by \$18.4 million or 6 percent,
5 primarily due to in-service additions related to Stations Renewal projects (Exhibit 2B,
6 Section E6.6).
- 7 • **Poles and Wires Assets** are forecasted to increase \$412.1 million or 9 percent as a
8 result of in-service additions from investments in the following programs: Customer
9 Connections (Exhibit 2B, Section E5.1), Externally Initiated Plant Relocations &
10 Expansion (Exhibit 2B, Section E5.2), Underground System Renewal – Horseshoe
11 (Exhibit 2B, Section E6.2), Reactive and Corrective Capital (Exhibit 2B, Section E6.7)
12 and the Overhead System Renewal Program (Exhibit 2B, Section E6.5). Of these
13 programs, the largest increases are forecasted in the Customer Connections (\$125.6
14 million) and Externally Initiated Plant Relocations & Expansion (\$78.5 million)
15 programs, followed by increases in planned renewal work as part the Underground
16 System Renewal – Horseshoe program (\$69.9 million) and other renewal work
17 programs noted above.
- 18 • **Contributions and Grants** are forecasted to increase by \$153.4 million or 21 percent
19 due to customer and third-party contributions related to the Customer Connections
20 and Externally Initiated Plant Relocations & Expansion programs. The contributions
21 resulted in a reduction to NBV.
- 22 • **Line Transformers** are forecasted to increase by \$85.0 million or 9 percent primarily
23 from in-service additions related to the Reactive and Corrective Capital (Exhibit 2B,
24 Section E6.7), Overhead System Renewal (Exhibit 2B, Section E5.1), Customer
25 Connections (Exhibit 2B, Section E5.1) and Underground System Renewal- Horseshoe
26 (Exhibit 2B, Section E6.2) programs.

- 1 • **Services and Meter Assets** are forecasted to increase by \$36.6 million or 8 percent
- 2 primarily due to the Metering program (Exhibit 2B, Section E5.4).
- 3 • **Equipment Assets** are forecasted to increase by \$22.4 million or 9 percent, primarily
- 4 due to investment in the Network Condition Monitoring & Control (Exhibit 2B,
- 5 Section E7.3) and the Fleet and Equipment Services (Exhibit 2B, Section E8.3)
- 6 programs.
- 7 • **IT assets** are forecasted to increase by \$16.2 million or 12 percent, primarily due to
- 8 investment in hardware within the IT/OT program (Exhibit 2B, Section E8.4).

9

10 **3.5 2024 Bridge versus 2025 Forecast Year PP&E NBV**

11 Table 10 below presents the 2024 bridge versus 2025 forecast PP&E NBV values by asset

12 class.

13

14 **Table 10: 2024 Bridge versus 2025 Forecast PP&E NBV (\$ Millions)**

	2024 Bridge	2025 Forecast	Variance (\$)	Variance (%)
Land and Buildings	229.9	237.7	7.8	3.4%
Other Distribution Assets	815.8	877.7	61.9	7.6%
General Plant	327.9	338.7	10.8	3.3%
TS Primary Above 50	82.1	81.3	(0.8)	-0.9%
Distribution System	332.9	368.5	35.6	10.7%
Poles, Wires	5,017.8	5,426.7	408.9	8.1%
Contributions and Grants	(898.8)	(1,008.6)	(109.9)	12.2%
Line Transformers	1,027.2	1,110.7	83.5	8.1%
Services and Meters	476.5	526.6	50.1	10.5%
Equipment	262.1	286.7	24.6	9.4%
IT Assets	154.6	176.1	21.5	13.9%
Gross Assets	7,827.9	8,422.1	594.1	7.6%
Accumulated Depreciation	(2,249.2)	(2,484.2)	(235.0)	10.5%
Closing PP&E NBV	5,578.8	5,937.9	359.1	6.4%

1 From 2024 to 2025, PP&E by asset class variances are forecasted as follows:

- 2 • **Land and Buildings Assets** are forecasted to increase by \$7.8 million or 3.4 percent
3 from in-service additions related to Facilities Management and Security (Exhibit 2B,
4 Section E8.2) and Stations Renewal (Exhibit 2B, Section E6.6).
- 5 • **Other Distribution Assets** are forecasted to increase by \$61.9 million or 7.6 percent
6 primarily due to IT software additions (Exhibit 2B, Section E8.4), and capital
7 contributions paid to Hydro One (Exhibit 2B, Section E7.4).
- 8 • **General Plant Assets** are forecasted to increase by \$10.8 million or 3.3 percent
9 primarily due to the in-service amounts related to the Facilities Management and
10 Security program (Exhibit 2B, Section E8.2).
- 11 • **Distribution System assets** are forecasted to increase by \$35.6 million or 10.7
12 percent, primarily due to in-service additions related to Stations Renewal projects
13 (Exhibit 2B, Section E6.6).
- 14 • **Poles and Wires Assets** are forecasted to increase by \$408.9 million or 8.1 percent
15 as a result of in-service additions from investments in the following programs:
16 Customer Connections (Exhibit 2B, Section E5.1), Externally Initiated Plant
17 Relocations & Expansion (Exhibit 2B, Section E5.2), Underground System Renewal –
18 Horseshoe (Exhibit 2B, Section E6.2), Reactive and Corrective Capital (Exhibit 2B,
19 Section E6.7) and the Overhead System Renewal Program (Exhibit 2B, Section E6.5).
20 Of these programs, the largest increases are forecasted in the Customer Connections
21 (\$128.8 million) and Externally Initiated Plant Relocations & Expansion (\$73.4 million)
22 programs, followed by increases planned renewal work as part the Underground
23 System Renewal – Horseshoe program (\$48.5 million) and other renewal work
24 programs noted above.
- 25 • **Contributions and Grants** are forecasted to increase by \$109.9 million or 12.2
26 percent due to customer and third-party contributions related to the Customer

1 Connections and Externally Initiated Plant Relocations & Expansion programs. The
 2 contributions resulted in a reduction to NBV.

- 3 • **Line Transformers** are forecasted to increase by \$83.5 million or 8.1 percent
 4 primarily from in-service additions related to Reactive and Corrective Capital (Exhibit
 5 2B, Section E6.7) and Customer Connections (\$16.8 million, Exhibit 2B, Section E5.1)
 6 programs.
- 7 • **Services and Meter Assets** are forecasted to increase by \$50.1 million or 10.5
 8 percent primarily due to the Metering program (Exhibit 2B, Section E5.4).
- 9 • **Equipment Assets** are forecasted to increase by \$50.1 million or 10.5 percent,
 10 primarily due to investment in the Network Condition Monitoring & Control (Exhibit
 11 2B, Section E7.3) and the Fleet and Equipment Services (Exhibit 2B, Section E8.3)
 12 programs.
- 13 • **IT assets** are forecasted increase by \$21.5 million or 13.9 percent primarily due to
 14 investment in computer hardware within the IT/OT program (Exhibit 2B, Section
 15 E8.4).

16
 17 **3.6 2025 versus 2029 Forecast Year PP&E NBV**

18 Table 11 below presents the 2025 forecast versus 2029 forecast PP&E NBV values by asset
 19 class.

20
 21 **Table 11: 2025 Forecast versus 2029 Forecast (\$ Millions)**

	2025 ForeAcast	2029 Forecast	Variance (\$)	Variance (%)
Land and Buildings	237.7	302.3	64.7	27.2%
Other Distribution Assets	877.7	1,225.1	347.4	39.6%
General Plant	338.7	459.1	120.4	35.5%
TS Primary Above 50	81.3	78.3	(3.0)	-3.7%
Distribution System	368.5	524.2	155.7	42.3%

	2025 ForeAcast	2029 Forecast	Variance (\$)	Variance (%)
Poles, Wires	5,426.7	7,504.3	2,077.5	38.3%
Contributions and Grants	(1,008.6)	(1,617.7)	(609.1)	60.4%
Line Transformers	1,110.7	1,461.5	350.8	31.6%
Services and Meters	526.6	733.9	207.3	39.4%
Equipment	286.7	370.6	83.9	29.2%
IT Assets	176.1	295.1	119.0	67.6%
Gross Assets	8,422.1	11,336.6	2,914.5	34.6%
Accumulated Depreciation	(2,484.2)	(3,583.9)	(1,099.7)	44.3%
Closing PP&E NBV	5,937.9	7,752.7	1,814.8	30.6%

1

2 From 2025 to 2029, PP&E by asset class variances are forecasted as follows:

- 3
- 4 • **Land and Buildings Assets** are forecasted to increase by \$64.7 million or 27.2
 5 percent, primarily from in-service additions related to Facilities Management and
 6 Security (\$33 million) per Exhibit 2B, Section E8.2, the Stations Renewal work (\$16.7
 7 million) per Exhibit 2B, Section E6., and 6 the Downsview TS project (\$15 million) per
 8 Exhibit 2B, Section E7.4.
 - 9 • **Other Distribution Assets** are forecasted to increase by \$347.4 million or 39.6
 10 percent primarily due to the in-service amounts related to IT software additions
 11 (\$155.3 million) per Exhibit 2B, Section E8.4, capital contributions paid to Hydro One
 12 (\$99.0 million) per Exhibit 2B, Section E7.4, and Stations Renewal (\$37.2 million) per
 13 Exhibit 2B, Section E6.6.
 - 14 • **General Plant Assets** are forecasted to increase \$120.4 million or 35.5 percent
 15 primarily due to the in-service amounts for Facilities Management and Security
 16 program (\$80.4 million) per Exhibit 2B, Section E8.2, and the Enterprise Data Centre
 17 project (\$37.5 million) per Exhibit 2B, Section E8.1.
 - 18 • **TS Primary Above 50** are forecasted to decrease by \$3 million or 3.7 percent due to
 depreciation expenses being higher than in-service additions.

- 1 • **Distribution System Assets** are forecasted to increase by \$155.7 million or 42.3
2 percent primarily due to Stations Renewal projects (\$95.8 million) per Exhibit 2B,
3 Section E6.6 and work in the Metering program (\$49.8 million) per Exhibit 2B, Section
4 E5.4.
- 5 • **Poles and Wires Assets** are forecasted to increase by \$2,077.5 million or 38.3 percent
6 primarily due to:
- 7 ○ Demand-related investments in the Customer Connections program (\$593.2
8 million) per Exhibit 2B, Section E5.1, and the Externally Initiated Plant
9 Relocations and Expansion program (\$281.6 million) per Exhibit 2B, Section
10 E5.2;
- 11 ○ Planned renewal work in the Underground System Renewal – Horseshoe
12 (\$305.2 million) per Exhibit 2B, Section E6.2 and Overhead System Renewal
13 (\$147.3 million) per Exhibit 2B, Section E6.5.
- 14 • **Contributions and Grants** are forecasted to increase by \$609.1 million or 60.4
15 percent due to customer and third-party contributions related to the Customer
16 Connections and Externally Initiated Plant Relocations & Expansion programs. The
17 contributions resulted in a reduction to NBV.
- 18 • **Line Transformers** are forecasted to increase by \$350.8 million or 31.6 percent
19 primarily from in-service additions related to Reactive and Corrective Capital
20 program (\$88.8 million) per Exhibit 2B, Section E6.7, the Customer Connections
21 program (\$77.2 million) per Exhibit 2B, Section E5.1, the Overhead System Renewal
22 program (\$61.8 million) per Exhibit 2B, Section E6.5, and the Network System
23 Renewal program (\$49.7 million) per Exhibit 2B, Section E6.4.
- 24 • **Services and Meter Assets** are forecasted to increase by \$207.3 million or 39.4
25 percent primarily due to the implementation of the Advanced Metering
26 Infrastructure (AMI2.0) project per Exhibit 2B, Section E5.4.

- 1 • **Equipment Assets** are forecasted to increase by \$22.4 million or 9 percent, primarily
2 due to investment in the Network Condition Monitoring & Control (Exhibit 2B,
3 Section E7.3) and the Fleet and Equipment Services (Exhibit 2B, Section E8.3)
4 programs.
- 5 • **IT Assets** are forecasted to increase by \$119.0 million or 67.6 percent primarily due
6 to investment in hardware equipment (\$85.3 million) per the IT/OT program in
7 Exhibit 2B, Section E8.4, and the Enterprise Data Centre project (\$32.7 million) per
8 Exhibit 2B, Section E8.1.

1 **DEPRECIATION AND AMORTIZATION**

2

3 This schedule provides information about Toronto Hydro’s depreciation and amortization
4 rates and expenses. Toronto Hydro converted to International Financial Reporting Standards
5 (“IFRS”) effective January 1, 2015. This application represents Toronto Hydro’s third
6 rebasing application under Modified IFRS (“MIFRS”).

7

8 **1. FILING REQUIREMENTS**

9 In accordance with s. 2.2.4 of the OEB’s Filing Requirements for Electricity Distribution Rate
10 Applications (December 15, 2022), this schedule provides the following information:

11

- 12 • Details regarding depreciation, amortization and depletion by asset group for the
13 current (2020-2024) and future (2025-2029) rate periods;
- 14 • A description of Toronto Hydro’s depreciation and amortization practices and a
15 summary of the changes implemented since the utility’s last rebasing application;
- 16 • An explanation of Toronto Hydro’s variance from the “half-year rule” regarding the
17 calculation of depreciation expense;
- 18 • An explanation to reconcile methodological differences between Toronto Hydro’s
19 depreciation expense and OEB Appendix 2-C; and
- 20 • Information about the utility’s decommissioning provision and any associated
21 depreciation or accretion expenses in relation to the decommissioning provision.

22

23 **2. DEPRECIATION EXPENSE DETAILS**

24 Appendix A to this schedule provides a summary of depreciation expense by Uniform System
25 of Accounts for the current (2020-2024) and future (2025-2029) rate periods. These
26 amounts include derecognition as described in Exhibit 2A, Tab 2, Schedule 2.

1 **3. DEPRECIATION AND AMORTIZATION**

2 In accordance with the OEB’s Accounting Procedures Handbook for Electricity Distributors
 3 (the “APH”), Toronto Hydro depreciates and amortizes its assets on a straight-line basis over
 4 the estimated useful lives of the assets. Tables 1 and 2 below provide Toronto Hydro’s
 5 annual depreciation and amortization rates by asset category for the current (2020-2024)
 6 and future (2025-2029) rate periods.

7
 8 **Table 1: Property, Plant, and Equipment Depreciation Rates (%)¹**

Asset Category	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge	2025-29 Forecast
Distribution Lines	1.7 - 5.0	1.7 - 5.0	1.7 - 5.0	1.5 - 5	1.5 - 5	1.5 - 5
Transformers	3.3 - 5.0	3.3 - 5.0	3.3 - 5.0	2.9 - 3.3	2.9 - 3.3	2.9 - 3.3
Meters	2.5 - 6.7	2.5 - 6.7	2.5 - 6.7	2.5 - 6.7	2.5 - 6.7	2.5 - 6.7
Stations	2.5 - 10.0	2.5 - 10.0	2.0 - 10.0	2.0 - 10.0	2.0 - 10.0	2.0 - 10.0
Buildings	1.3 - 5.0	1.3 - 5.0	1.3 - 5.0	1.5 - 10.0	1.5 - 10.0	1.5 - 10.0
Other Capital Assets	4.0 - 25.0	4.0 - 25.0	4.0 - 25.0	4.0 - 25.0	4.0 - 25.0	4.0 - 25.0
Right-of-use assets	1.0 - 11.1	1.0 - 11.1	1.0 - 11.1	1.0 - 11.1	1.0 - 11.1	1.0 - 11.1

9
 10 **Table 2: Intangible Assets Amortization Rates (%)**

Asset Category	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge	2025-29 Forecast
Computer Software	10.0 - 25.0	10.0 - 25.0	10.0 - 25.0	10.0 - 25.0	10.0 - 25.0	10.0 - 25.0
Contributions	4.0	4.0	4.0	4.0	4.0	4.0

11

¹ Toronto Hydro added new asset classes and made minor presentation changes to the grouping of asset categories related to depreciation. Specifically: (1) the Streetlighting and Signal Systems and Storage Battery Equipment assets were rolled into the Other Capital asset category; and (2) assets under the Building category were re-categorized to better align with actual use.

1 **3.1 Depreciation Study**

2 In accordance with the OEB’s decision in the 2020-2024 Rate Application (EB-2018-0165),
3 Toronto Hydro retained Concentric Advisors, ULC (“Concentric”) to complete a Depreciation
4 study, which is filed as Appendix D to this schedule (the “Study”). The Study resulted in
5 changes to depreciation rates effective January 1, 2023.

6

7 As summarized in Appendix D at Tables 1 – 3, the financial average service lives of six asset
8 classes were shortened by the Study, and the financial average service lives of 73 asset were
9 lengthened by Study, resulting in a significant overall reduction in depreciation expenses.
10 Concentric concludes at section 1, page 1 of the report in Appendix D, that the lengthening
11 of average service lives is consistent with trends observed throughout the North American
12 electric industry, due to many factors including the increased focus of utilities in maintaining
13 and extending the life of infrastructure.

14

15 At Toronto Hydro’s request, in the 2023 Decision and Rate Order (EB-2022-0065) issued on
16 December 8, 2022, the OEB approved a new variance account (“Useful Life Changes”) “*to*
17 *separately track the difference in revenue requirement impacts between the existing and*
18 *updated depreciation rates over the 2023 and 2024 period, in a new sub-account of its*
19 *existing capital-related revenue requirement variance account (CRRRVA).” The total revenue*
20 *requirement impact of the change in depreciation rates using Toronto Hydro’s proposed*
21 *approach is \$136.5 million as of the end of 2024. For further details about the calculation of*
22 *the balance, including a comparison of Toronto Hydro’s proposed approach and the*
23 *methodology proposed by OEB Staff, please refer to Exhibit 9, Tab 1, Schedule 1.*

24

25 Appendix 2-BB contains the updated useful lives. Assets that fall outside the Kinectrics
26 Report useful life ranges are supported by the Study.

1 **3.2 Variance from Half-Year Rule**

2 Toronto Hydro calculates depreciation based on the month that an asset comes into service,
3 rather than on the basis of the half-year rule, which assumes that all asset additions are put
4 into service in the middle of the fiscal year. Similarly, Toronto Hydro calculates depreciation
5 associated with assets that are retired, transferred or become fully depreciated within a
6 given year based on the month of transaction. This practice is consistent with past rate
7 applications reviewed by the OEB.

8

9 **4. DECOMMISSIONING PROVISION**

10 Toronto Hydro recognizes liabilities for the future removal and handling costs for
11 contamination in distribution equipment and for the future environmental remediation of
12 certain properties (collectively known as “decommissioning provisions”) in accordance with
13 Article 410 of the OEB Accounting Procedures Handbook for Electricity Distributors (the
14 “APH”).

15

16 A decommissioning provision is recognized at the time that the obligation arises. Initially,
17 Toronto Hydro measures the liability at present value and the amount of the liability is added
18 to the carrying amount of the related asset. In subsequent periods, the utility depreciates
19 the capitalized amount over the useful life of the related asset and the liability is adjusted
20 quarterly for the discount applied upon initial recognition of the liability (“accretion
21 expense”) and for changes in the underlying assumptions.

22

23 Tables 3 and 4 below sets out Toronto Hydro’s decommissioning costs and the related
24 depreciation expense for the current (2020-2024) and future (2025-2029) rate periods.
25 Tables 5 and 6 below shows the corresponding decommissioning liability and related

1 accretion expense over the same periods. The methodology to forecast decommissioning
 2 provisions is consistent with the last rebasing application.²

3

4 **Table 3: Actual and Bridge Decommissioning Costs & Related Depreciation Expense**

5 **(\$ Millions)**

	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge
Decommissioning Costs	0.7	0.5	0.2	0.2	0.1
Related Depreciation Expense	0.1	0.1	0.0	0.0	0.0

6

7 **Table 4: Forecast Decommissioning Costs & Related Depreciation Expense (\$ Millions)**

	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast
Decommissioning Costs	0.1	0.0	(0.0)	(0.0)	(0.1)
Related Depreciation Expense	0.0	0.1	0.0	0.0	0.0

8

9 **Table 5: Actual and Bridge Decommissioning Liability & Related Accretion Expense**

10 **(\$ Millions)**

	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge
Decommissioning Liability	1.4	1.1	0.8	0.6	0.5
Related Accretion Expense	-	-	-	-	-

11

12 **Table 6: Forecast Decommissioning Liability & Related Accretion Expense (\$ Millions)**

	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast
Decommissioning Liability	0.5	0.5	0.5	0.5	0.4
Related Accretion Expense	-	-	-	-	-

² EB-2018-0165 at Exhibit 4B, Tab 1, Schedule 1.

1 **5. DEPRECIATION AND AMORTIZATION EXPENSE**

2 Tables 7 and 8 below summarize the depreciation and amortization expense reflected in the
 3 Revenue Requirement presented in Exhibit 6, Tab 1, Schedule 1 and in OEB Appendix 2-BA
 4 at Exhibit 2A, Tab 1, Schedule 2.

5

6 **Table 7: Depreciation and Amortization Expense³ 2020 to 2024 (\$ Millions)**

	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge
Depreciation and Amortization Expense ⁴	237.8	250.7	262.0	229.0	237.2

7

8 **Table 8: Depreciation and Amortization Expense⁵ 2025 to 2029 (\$ Millions)**

	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast
Depreciation and Amortization Expense ⁶	247.4	260.3	278.8	300.4	311.7

9

10 Depreciation and amortization expense results from detailed calculations by asset class
 11 which are determined through the utility's enterprise financial system for historical
 12 amounts, and financial models for the bridge and forecast years. This method incorporates
 13 the depreciation and amortization rates presented in Tables 1 and 2 above, and considers
 14 the actual and forecasted timing of asset additions and removals from service.

15

16 The year-over-year increases in depreciation and amortization expense summarized above
 17 are primarily due to Toronto Hydro's in-service asset additions summarized in Exhibit 2A,

³ Includes depreciation of the decommissioning costs and excludes derecognition. See Exhibit 2A, Tab 2, Schedule 2 for information about asset derecognition.

⁴ See Exhibit 2A, Tab 2, Schedule 1, Appendix A for additional information.

⁵ Includes depreciation of the decommissioning costs and excludes derecognition. See Exhibit 2A, Tab 2, Schedule 2 for information about asset derecognition.

⁶ See Exhibit 2A, Tab 2, Schedule 1, Appendix A for additional information.

1 Tab 1, Schedule 1, with the exception of 2022 versus 2023 where there is a decrease as a
2 result of implementing the revised rates resulting from the Study.

3

4 **5.1 OEB Appendix 2-C**

5 OEB's Appendix 2-C is filed as Appendix B to this schedule. The utility notes that the
6 depreciation and amortization values in Appendix 2-C are based on broad assumptions. As
7 a result, differences in depreciation and amortization values calculated by the financial
8 system and using the formulas in Appendix 2-C are expected. For example, Appendix 2-C
9 assumes depreciation in the first year, for all assets placed into service, begins at mid-year
10 while Toronto Hydro depreciates assets from the month they are capitalized. In addition,
11 applying broad depreciation assumptions to assets within an account that contains assets
12 with varying remaining useful lives depending on when they were put in-service, also creates
13 differences in depreciation and amortization in Appendix 2-C.



2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUAL RATES
APPLICABLE TO ASSETS IN SERVICE

July 2023

Prepared for Toronto Hydro

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July 31, 2023

Toronto Hydro-Electric System Limited
14 Carlton Street, 5th Floor
Toronto, Ontario
M5B 1K5

Attention:

*Elias Lyberogiannis, EVP Planning and Chief Engineering and Modernization Officer;
Celine Arsenault, EVP and Chief Financial Officer; and
Sheikh Nahyaan, EVP, Customer Care and Chief Information Officer*

Dear Elias, Celine and Sheikh,

Pursuant to your request, we conducted a review and assessment of the regulated life estimates related to the Toronto Hydro assets as of December 31, 2022. Our report presents a description of the methods used in the estimation of depreciation, the statistical analysis of service life and the summary of annual depreciation expense.

We gratefully acknowledge the assistance of Toronto Hydro personnel in the completion of the review.

Should you have any questions or concerns, please do not hesitate to contact me directly at 587.997.6489

Yours truly,

Concentric Advisors, ULC

A handwritten signature in blue ink, appearing to read "LEK", is positioned above the name and title of Larry E. Kennedy.

Larry E. Kennedy
Senior Vice President

A handwritten signature in blue ink, appearing to read "Amanda Nori", is positioned above the name and title of Amanda Nori.

Amanda Nori
Senior Project Manager

LEK/ta
Project: 100096



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SECTION 1

1 STUDY HIGHLIGHTS

Pursuant to Toronto Hydro-Electric System's ("Toronto Hydro" or the "Company") request, Concentric Advisors, ULC ("Concentric") conducted a depreciation study related to the electric distribution and general plant accounts, as of December 31, 2022.

The purpose of this study was to determine the average service lives, whole life annual accrual percentages, and remaining life accrual amount related to the return of original cost for ratemaking objectives based on assets in-service at December 31, 2023 and December 31, 2024.

The depreciation study sought determination if the current average service life estimates are providing an appropriate return of investment over the useful life of the assets, and provides recommendation for accounts where it is considered that the current average service life estimates require adjustment.

The consideration of the above included preparation of detailed historic retirement patterns, in depth discussion with internal Toronto Hydro subject matter experts and management staff, and a review of Canadian peer electric distribution utilities.

Based on the above review, Concentric recommends the average service lives set forth herein applied specifically to assets in service, as of December 31, 2023, and December 31, 2024 as summarized in Tables 1 and 2 in Section 4 of this report by account detail. Supporting data and calculations are provided as well.

This study recommends the shortening of the financial average service life in six accounts, and the lengthening of the financial average service lives in 73 accounts. This lengthening of average service lives is consistent with trends throughout the North American electric industry and is due to many factors including the increased focus of utilities industry wide in maintaining and extending the life of infrastructure. The specific reasons for the average service life changes for each of the large accounts are discussed in Section 3.4.

Finally, this study results in an annual depreciation expense accrual related to the recovery of original cost is forecast to be \$222.1 million, when applied to depreciable distribution and common assets study balances, as of January 1, 2023, of \$4.907 billion. Annual depreciation expense accrual related to the recovery of original cost is forecast to be \$205 million, when applied to depreciable distribution and common assets study balances, as of January 1, 2024, of \$4.685 billion. The study results are summarized at an annual level as follows:



SUMMARY OF NET BOOK VALUE AND ACCRUAL AMOUNTS

Depreciation Study Date	Net Book Value	Annual Accrual
January 1, 2023	\$4,907,165,802	\$222,093,476
January 1, 2024	\$4,685,072,326	\$205,049,475



1.1 BASIS OF STUDY

1.1.1 Scope

Concentric has been retained by Toronto Hydro to develop reasonable and appropriate average service life estimates for use in the estimated depreciation calculations for the purpose of determining the annual regulated revenue requirement and for use in financial accounting statements. The review included the analysis based on distribution and common assets in service as of December 31, 2022 and resulting impacts of the results of this study were applied specifically to distribution and common assets in service as of January 1, 2023 and January 1, 2024. This report sets forth the findings of our independent review. This report also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates.

The results of this study will be implemented on an individual asset level within the Toronto Hydro accounting system on a remaining life basis. This is a continuation of the accounting practice of Toronto Hydro. Concentric notes that original cost amounts within the Toronto Hydro accounting system have been reset to the then existing net book value during International Financial Reporting Standards (“IFRS”) based implementations. Within this implementation, the net book value of the asset amounts were not changed, however the original cost was reset to the then existing net book value and the accumulated depreciation balances were reset to zero. As such, the continued use of the remaining life calculations applied to each specific asset is reasonable and continues to be the appropriate method of depreciation expense calculation.

The Straight-Line method, Average Life Group (“ALG”) procedure, applied on a remaining life basis as used within the Toronto Hydro accounting system is a commonly used depreciation calculation procedure that has been widely accepted in jurisdictions throughout North America. The calculations as applied within the Toronto Hydro systems are on an individual asset basis.

As part of this study, Concentric Advisors reviewed the operating considerations and typical asset configurations throughout the Toronto Hydro distribution system, through the completion of detailed operational staff discussions. Site tours of Toronto Hydro’s system were completed in March of 2023 including visits to the Toronto Hydro office on Commissioners Street, the Control Room, the Windsor Station assets and the Strachan Substation.



SECTION 2

2 PLAN OF STUDY

This study is presented in the following order:

Section 1:	Study Highlights, presents a brief summary of the depreciation study and results
Section 2:	Contains statements with respect to the plan and the Basis of the Study
Section 3:	Development of the Required Average Service Life Estimates, presents descriptions of the methods used and factors considered in the service life study
Section 4:	Results of Study, presents summaries by depreciable group of annual depreciation in Tables 1, 2 and 3
Section 5:	Presents the results of the Retirement Rate Statistics
Section 6:	Estimation of Survivor Curves, is an overview of Iowa curves and the Retirement Rate Analysis

2.1 Depreciation

A full and comprehensive depreciation study includes the following components:

1. supported recommendations regarding Average Service Life estimates for each account; and
2. a document explaining the procedures followed and justifying the results in a format suitable for submission to senior management and regulatory authorities.

A diagram of the nine primary processes followed by Concentric in the development of the depreciation study is provided below. Each of the steps is undertaken by Concentric using proprietary software.





2.2 Information Provided by Toronto Hydro

Toronto Hydro has provided Concentric with required information, as of December 31, 2022, for all accounts being studied. This information has been compiled from the distribution and common assets accounting records and includes the following:

- current balances by vintage year for each account (aged balances). The balances provide the amount of investment sorted by installation year currently in operation. This file is only inclusive of current distribution and common assets in service and does not include any retirement information; and
- retirement transactions for all accounts. The transactions include information regarding the transaction year of the retirement, the installation year of the asset being retired, and the original cost of the asset being retired.

2.3 Procedures Performed

The above data was reviewed and reconciled to Company control schedules to ensure accuracy and reasonableness. These checks include that the surviving investment by account equals (or can be reconciled to) the Company's gross distribution and common assets in service and accumulated depreciation ledger balances. In addition, Concentric performed the following procedures to form the basis of the results of this study:

- confirm accounting policies being followed in accordance with International Financial Reporting Standards principles;
- conduct interviews with Toronto Hydro personnel to obtain understanding of company operations;
- completed an actuarial analysis for all depreciable accounts; and
- comparison against industry peers that operate facilities similar to Toronto Hydro's regulated assets.



SECTION 3

3 DEVELOPMENT OF DEPRECIATION RATES

3.1 Depreciation

Depreciation, as applied to depreciable assets, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of assets in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and, in the case of electric companies, the exhaustion of natural resources.¹

Depreciation, as used in accounting, is a method of distributing fixed capital costs, less net salvage, over a time period by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing electric utility service. Normally, the time over which the fixed capital cost is allocated to the cost of service, is equal to the time over which an item renders service – that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the Straight-Line method of depreciation.

When considering the action of the elements, the average service life calculations have considered large catastrophic events that have occurred and impacted the life estimates of utilities across North America. The average service life of utilities has been influenced by events including:

- forest fires;
- earthquakes;
- tornadoes;
- ice storms;
- wind-storms;
- large scale flooding;
- fires;
- lightning;
- intentional actions of third parties;
- hoar frost; and
- other forces of nature.

Toronto Hydro continues to determine depreciation using the Straight-Line method for all distribution and common assets comprising regulated assets, based on the Average Life Group Procedure – Remaining Life Technique. The Average Life Group Procedure is the most commonly used depreciation procedure for North American utilities, whereby one average service life estimate is applied to all assets and vintages within the asset class. The Remaining Life Technique calculates depreciation on the basis of recovering the net book value of the investment over the remaining life

¹ Federal Energy Regulatory Commission -Part 201- Uniform System of Accounts Prescribed for Electric Companies Subject to the Provisions of the Electric Act Definitions



of an asset, or group of assets, with no provision for separate accumulated depreciation true-up. As such, a common life estimate is applied to each of the assets. Concentric finds the application of the Straight-Line method and the Average Life Group Procedure – Remaining Life Technique results in a reasonable recovery of Toronto Hydro’s capital investment over time and recommends their continued application.

3.2 Estimation of Average Service Life

3.2.1 Average Service Life

The use of an average service life or a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve plotting the number of units which survive at successive ages using the retirement rate method of analysis.

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. The Iowa curves “...were sorted into three groups according to whether the mode was to the left, approximately coincident with, or to the right of the average-life ordinate. The curves in each of these three groups were then sub-classified in accordance with the height of the mode, taking also into consideration the distance of the mode to the left or right of the average life.”² The Iowa curves are described as L-type (i.e. left-moded), R-type (i.e. right-moded), and S-type (i.e. symmetrical). Further development resulted in the introduction of O-type (i.e. origin-moded curves) where the greatest frequency of retirement occurs at the origin, or immediately after age zero. Individual type curves are further depicted with numerical subscripts which represent the relative heights of the modes of the frequency curves within each family.

The program that is used by Concentric for statistical smooth curve fitting utilizes an internal “goodness-of-fit” criterion known as the Residual Measure. This Residual Measure is based on a least squares solution of the differences between the stub curve (or original data points) and smooth survivor curve which also requires a balancing of the differences above and below the stub curve.

The criterion of goodness-of-fit is the mean square of the differences between the points on the stub and fitted smooth survivor curves. The residual measure, or standard error of estimate, shown in the output format is the square root of this mean square. As such, the lower the Residual Measure the better the statistical fit between the analyzed Iowa curve and the observed data points. Concentric follows the widely used practice of fitting Iowa curves up to one percent of the maximum exposures. This standard practice is utilized to minimize the influence of typically small retirements applied to similarly small exposures which may unduly affect the Iowa curve fitting process. However, Concentric will recognize the observed data points beyond the one percent of maximum exposures if it is determined that the additional data is a valid consideration for life recommendation.

² Robley Winfrey, Statistical Analyses of Industrial Property Retirements, Bulletin 125 revised (Engineering Research Institute, Iowa State University, 1935) 65



A discussion of the general concept of survivor curves and retirement rate method is presented in Section 6.

Concentric notes that original cost amounts within the Toronto Hydro accounting system have been reset to the then existing net book value during International Financial Reporting Standards (“IFRS”) based implementation in 2014. Within these implementations, the net book value of the asset amounts were not changed, however the original cost was reset to the then existing net book value and the accumulated depreciation balances were reset to zero. As such, the retirement rate analysis only considered retirement transactions that occurred after 2014 in order to avoid comparing dollars of retirement before the IFRS adjustment to the exposures calculated after the adjustments. Consequently, Concentric placed limited weighting on the results of the retirement rate analysis.

The service life used in the depreciation and amortization calculations were based on informed professional judgment which incorporated a review of management’s plans, policies and outlook, a general knowledge of the electric utility industry, and comparisons of the service life estimates from Concentric’s studies of other electric utilities. The use of survivor curves, to reflect the expected dispersion of retirement, provides a consistent method of estimating depreciation for assets. Iowa type survivor curves were used to depict the estimated survivor curves for the distribution and common assets accounts not subject to amortization accounting.

The procedure for estimating service lives consisted of compiling historical data for the distribution and common assets accounts or depreciable groups, analyzing this history through the use of widely accepted techniques, and forecasting the survivor characteristics for each depreciable group on the basis of interpretations of the historical data and the probable future. Probable future expectations included management and operational staff interviews. The combination of the historical experience and the probable future expectations yielded estimated survivor curves from which the average service lives were derived.

The resultant depreciation rates are summarized in the applicable table of this study (Section 4). The depreciation rates should be reviewed periodically to reflect the changes that result from distribution and common assets and reserve account activity.

3.2.2 Operations Discussions

Discussions with operations representatives undertaken as part of this study provided Concentric with an understanding of the type of assets in service for the electric system. These discussions provide Concentric with the necessary background to make an assessment of the physical installations of the Toronto Hydro distribution and common assets, and to understand the type of distribution and common assets in service and the operating conditions of the facilities.

Operational interviews were undertaken to understand the historic operating conditions that have led to retirement of distribution and common assets in the past and to understand the current condition of the assets which may impact future retirement plans. Operational interviews covered the following topics:

- Operating history of assets in service;



- Replacement history of major asset components and review of any significant retirement programs;
- General operating experience of the major asset components;
- Review of any life restricting operational issues;
- Review of instances where advancements in technology may cause changes to average service life indications; and
- Discussions of the manner in which Toronto Hydro's assets may differ from peer assets.

3.2.3 Peer Analysis

In order to provide a comparison for each account grouping, Concentric selected a peer group of companies to use in the development of average service lives. The companies selected for comparison were all companies for which Concentric has recently completed depreciation studies relating to Canadian electric generation, transmission, and/or distribution plants. As such, Concentric was able to make a meaningful comparison giving consideration to factors such as, capitalization and retirement policies, maintenance practices, and general operational practices. The companies selected for comparison were:

- BC Hydro;
- ENMAX;
- Newfoundland and Labrador Hydro Corporation (NALCOR);
- Northwest Territories Power Corporation;
- Manitoba Hydro;
- Hydro One; and
- New Brunswick Power.

In addition to the above, Concentric reviewed the 2010 Kinetics Study used for the determination of depreciation parameters throughout the province of Ontario. The above studies provided Concentric Advisors with a comparable base of average service life estimates to use in the development of the service life estimates for Toronto Hydro's asset classes through Concentric's professional judgement.

3.2.4 Professional Judgement

The use of professional judgment in the development of average service life estimates is a practice that is appropriate and has been used for many years in North American regulatory jurisdictions. When available, the use of statistical analysis of the historic retirement transactions combined with the use of professional judgment, which includes review of accounting procedures and practices, use of operational staff interviews, review of prior studies, and review of the approved life estimates of peer companies, provides the most complete method of service life analysis.



3.3 Account Reorganization

Concentric reviewed the account structure currently being used by Toronto Hydro to find accounts where duplication may exist. This was done to ensure efficiency within the accounting practices and reduce regulatory burden.

FACILITIES ACCOUNTS

2023 Net Book Value	Previously Approved Life	Concentric Recommended Life
\$341,859,631	Varies	Varies

The assets in these accounts relate to facilities owned by Toronto Hydro. These accounts contain a variety of asset types with differing average lives. Through the completion of the depreciation study, Concentric was made aware that the currently utilized account structure for facilities was leading to non-homogeneous assets being grouped together. Concentric recommends Toronto Hydro examine the facilities accounts and create a set of accounts that better aligns with the actual use of facilities assets. In discussion with Toronto Hydro operations and management, Concentric recommends the following account structure be created:

Account Name	Assets Included	Proposed Asset Life
Buildings - Exterior	Landscape Parking Roadway Fencing Signage Exterior Electrical Exterior Lighting	15
Interior Finishings	Carpets Interior Walls Lighting Cubicles Interior Security Systems Window Coverings Electronic Equipment	10
Buildings – Auxiliary	Roofs HVAC Systems Elevators Washroom Facilities Wiring Fire Fighting Systems Exterior Security Systems	20



Account Name	Assets Included	Proposed Asset Life
Buildings – Other – 5 Years	Facilities Technology Assets	5
Buildings – Other – 10 Years	Interior Cameras Kitchen Facilities	10
Buildings – Other – 30 Years	Windows Major Building Structural Components Exterior Cladding	30
Buildings – Other – 65 Years	Building shell Structure Foundations	65

3.4 Average Service Life Assessments

Concentric has reviewed the average service life estimates for Toronto Hydro’s asset categories, based on December 31, 2022 asset values.

The following discussion, dealing with a number of accounts which comprise the majority of the investment analyzed, presents an overview of the factors considered by Concentric in the determination of the average service life estimates. The survivor curve estimates for the remainder of the accounts not discussed in the following sections were based on similar considerations.

ACCOUNT 2011 – TRANSFORMER STATION EQUIPMENT – POWER TRANSFORMERS

2023 Net Book Value	Investment %	Previously Approved Accounting Life	Concentric Recommended Life
\$18,143,761	0.37%	32	45-R3

The assets in this account relate to transformers located within power transforming stations. There are stations throughout the Toronto Hydro system, where power is generally reduced from 27.6 kV. The transformers located within these stations are replaced based on age and asset health condition assessments. There are no transformers containing PCBs.

The net book value in Transformer Station Equipment – Power Transformers is approximately \$18.1 million, representing 0.37 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1995 through 2022 were analyzed by the retirement rate method. There were \$2.2 million in retirements recorded in 2022. The Iowa 45-R3 provides a residual measure of 0.1908 as depicted on page 5-41. A review of peer Canadian electric distribution utilities indicates a range of 30 to 55 years. The 2010 Kinetrics report suggested a range of 30 – 60 years. The accounting life for this account has historically been 32 years and the engineering SMEs have historically used a life of 44 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 45 years is reasonable. Based on the above, Concentric recommends the Iowa 45-R3 to represent the future expectations for the investment in this account.



ACCOUNT 2111 – SUBSTATION EQUIPMENT – OUTDOOR BREAKER

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$22,307,820	0.46%	30	45-R3

The assets in this account relate to a combination of oil circuit breakers, air blast breakers, air magnetic breakers, and vacuum breakers located at municipal stations throughout the Toronto Hydro service area. There is an ongoing retirement program related to the oil circuit breakers which is expected to be completed in the next three years, and another program related to the air blast breakers which is expected to be completed by 2030. When assets are retired, it is Toronto Hydro standard to replace the breakers with vacuum breakers.

The net book value in Substation Equipment – Outdoor Breakers is approximately \$22.3 million, representing 0.46 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1985 through 2022 were analyzed by the retirement rate method. Retirements of \$506 thousand were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-69. The Iowa 45-R3 provides a residual measure of 0.3521. A review of peer Canadian electric distribution utilities indicates a range of 42 to 45 years. The 2010 Kinetrics report suggested a range of 35 – 65 years. The accounting life for this account has historically been 30 years and the engineering SMEs have historically used an average life of 45 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 45 years is reasonable. Based on the above, Concentric recommends the Iowa 45-R3 to represent the future expectations for the investment in this account.

ACCOUNT 2113 – SUBSTATION EQUIPMENT – INDOOR BREAKER

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$12,192,523	0.25%	30	45-R3

The assets in this account relate to a combination of oil circuit breakers, air blast breakers, air magnetic breakers, and vacuum breakers located at municipal stations throughout the Toronto Hydro service area. There is an ongoing retirement program related to the oil circuit breakers which is expected to be completed in the next three year, and another program related to the air blast breakers which is expected to be completed by 2030. When assets are retired, it is Toronto Hydro standard to replace the breakers with vacuum breakers.

The net book value in Substation Equipment – Indoor Breakers is approximately \$12.2 million, representing 0.25 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1985 through 2022 were analyzed by the retirement rate method. Retirements of \$1.4 million were recorded for the period 2018 through 2022, resulting in actual observed data points as depicted on page 5-72. The Iowa 45-R3 provides a residual measure of 0.5799. A review of peer Canadian electric distribution utilities indicates a range of 42 to 45 years. The 2010 Kinetrics report suggested a range of 35 – 65 years. The



accounting life for this account has historically been 30 years and the engineering SMEs have historically used an average life of 43 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 45 years is reasonable. Based on the above, Concentric recommends the Iowa 45-R3 to represent the future expectations for the investment in this account.

ACCOUNT 2117 – SUBSTATION EQUIPMENT – SWITCHGEAR AIR

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$64,195,591	1.32%	40	50-R3

The assets in this account relate to the air switches located at municipal stations throughout the Toronto Hydro area.

The net book value in Substation Equipment – Switchgear Air is approximately \$64.2 million, representing 1.32 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1986 through 2022 were analyzed by the retirement rate method. Retirements of \$150 thousand were recorded for the period 2018 through 2021, resulting in actual observed data points as depicted on page 5-77. The Iowa 50-R3 provides a residual measure of 0.6431. A review of peer Canadian electric distribution utilities indicates a range of 38 to 45 years. The 2010 Kinetrics report suggested a range of 30 – 60 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 50 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 50 years is reasonable. Based on the above, Concentric recommends the Iowa 50-R3 to represent the future expectations for the investment in this account.

ACCOUNT 2119 – SUBSTATION EQUIPMENT – SWITCHGEAR GIS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$38,824,443	0.80%	40	50-R3

The assets in this account relate to the GIS switches located at municipal stations throughout the Toronto Hydro area.

The net book value in Substation Equipment – Switchgear GIS is approximately \$38.8 million, representing 0.80 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1986 through 2022 were analyzed by the retirement rate method. There were no retirements recorded through 2022. A review of peer Canadian electric distribution utilities indicates a range of 38 to 45 years. The 2010 Kinetrics report suggested a range of 30 – 60 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 50 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 50 years is reasonable. Based on the above, Concentric recommends the Iowa 50-R3 to represent the future expectations for the investment in this account.



ACCOUNT 2123 – SUBSTATION EQUIPMENT – POWER TRANSFORMERS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$25,646,294	0.53%	32	45-R3

The assets in this account relate to transformers located within power transforming stations. There are municipal stations throughout the Toronto Hydro system, where power is generally reduced from 27.6 kV. The transformers located within these stations are replaced based on age and asset health condition assessments. There are no transformers containing PCBs.

The net book value in Substation Equipment – Power Transformers is approximately \$25.6 million, representing 0.53 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1983 through 2022 were analyzed by the retirement rate method. Retirements of \$230 thousand were recorded for the period 2017 through 2022, resulting in actual observed data points as depicted on page 5-83. The Iowa 45-R3 provides a residual measure of 0.3757. A review of peer Canadian electric distribution utilities indicates a range of 30 to 55 years. The 2010 Kinetrics report suggested a range of 30 – 55 years. The accounting life for this account has historically been 32 years and the engineering SMEs have historically used a life of 44 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 45 years is reasonable. Based on the above, Concentric recommends the Iowa 45-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3011 – O/H – POLES CONCRETE LEGACY

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$41,885,813	0.86%	50	55-R2

The assets in this account relate to concrete poles located throughout the Toronto Hydro service area. Concrete poles are often used for both distribution and street lighting purposes. Concrete poles tend to be less expensive while being able to support the added weight required for streetlighting.

The net book value in O/H – Poles Concrete Legacy is approximately \$41.9 million, representing 0.86 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1979 through 2022 were analyzed by the retirement rate method. Retirements of \$4.2 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-90. The Iowa 55-R2 provides a residual measure of 0.1471. A review of peer Canadian electric distribution utilities indicates a range of 25 to 55 years. The 2010 Kinetrics report suggested a range of 50 – 80 years. The accounting life for this account has historically been 50 years and the engineering SMEs have historically used a life of 55 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 55 years is reasonable. Based on the above, Concentric recommends the Iowa 55-R2 to represent the future expectations for the investment in this account.



ACCOUNT 3013 – O/H – POLES WOOD

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$327,139,939	6.71%	40	45-R0.5

The assets in this account relate to wood poles located throughout the Toronto Hydro service area. The majority of the overhead system utilizes wooden poles. Toronto Hydro currently installs primarily red cedar and has a 10-year inspection program. Common forces of retirement include change in voltage requirements, relocations, third party strikes, and tree contact. Poles are recycled upon retirement, and do not have any scrap value.

The net book value in O/H – Poles Wood is approximately \$327.1 million, representing 6.71 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1987 through 2022 were analyzed by the retirement rate method. Retirements of \$29.7 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-93. The Iowa 45-R0.5 provides a residual measure of 0.2523. A review of peer Canadian electric distribution utilities indicates a range of 43 to 65 years, although it is noted that many peer accounts include towers, crossarms, and other assets with differing life characteristics. The 2010 Kinetrics report suggested a range of 35 – 75 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 45 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 45 years is reasonable. Based on the above, Concentric recommends the Iowa 45-R0.5 to represent the future expectations for the investment in this account.

ACCOUNT 3051 – O/H - CONDUCTORS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$121,868,987	2.50%	50	60-R2

The assets in this account relate to overhead conductor, operating at 4 kV, 13.8 kV, or 27.6 kV. There is currently an ongoing replacement program targeting the 4 kV conductor and replacing it with 13.8 kV or 27.6 kV. Historically, most overhead conductor has been 4 kV, however this has stopped in recent years. Common forces of retirement include upgrades to the feeders, an increase in the required voltage, capacity requirements of the surrounding area, and age of the cable.

The net book value in O/H – Conductors is approximately \$121.9 million, representing 2.50 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1987 through 2022 were analyzed by the retirement rate method. Retirements of \$7.2 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-96. The Iowa 60-R2 provides a residual measure of 0.725. A review of peer Canadian electric distribution utilities indicates a range of 50 to 75 years. The 2010 Kinetrics report suggested a range of 50 – 60 years. The accounting life for this account has historically been 50 years and the engineering SMEs have historically used a life of 64 years for



planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 60 years is reasonable. Based on the above, Concentric recommends the Iowa 60-R2 to represent the future expectations for the investment in this account.

ACCOUNT 3053 – O/H – SECONDARY CONDUCTORS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$213,675,792	4.38%	50	60-R3

The assets in this account relate to overhead conductor, operating at 4 kV, 13.8 kV, or 27.6 kV. There is currently an ongoing replacement program targeting the 4 kV conductor and replacing it with 13.8 kV or 27.6 kV. Historically, most overhead conductor has been 4 kV, however this has stopped in recent years. Common forces of retirement include upgrades to the feeders, an increase in the required voltage, capacity requirements of the surrounding area, and age of the cable.

The net book value in O/H – Secondary Conductors is approximately \$213.7 million, representing 4.38 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1987 through 2022 were analyzed by the retirement rate method. Retirements of \$10.6 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-99. The Iowa 60-R3 provides a residual measure of 1.34. A review of peer Canadian electric distribution utilities indicates a range of 40 to 60 years. The 2010 Kinetrics report suggested a range of 50 – 75 years. The accounting life for this account has historically been 50 years and the engineering SMEs have historically used a physical life of 64 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 60 years is reasonable. Based on the above, Concentric recommends the Iowa 60-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3057 – O/H - SWITCHES

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$120,324,226	2.47%	30	30-R2

The assets in this account relate to switches located on the overhead distribution system. These assets are used primarily for capacity restoration and are replaced with SCADA compatible switches whenever needed. It is expected that the move to SCADA compatible switches may have a life shortening impact. Switches are generally retired due to failure, deteriorated condition, or as a result of the associated pole being replaced.

The net book value in O/H – Switches is approximately \$120.3 million, representing 2.47 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1986 through 2022 were analyzed by the retirement rate method. Retirements of \$7.9 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-102. The Iowa 30-R2 provides a residual measure of 0.398. A review of peer Canadian electric distribution utilities indicates a range of 48 - 60 years. The 2010 Kinetrics report suggested a range of 30 - 55 years. The accounting life for this account has



historically been 30 years and the engineering SMEs have historically used a life of 40 years for planning purposes, however it is expected that the life may shorten in the future due to introduction of SCADA compatible switches and the impact of technological change. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 30 years is reasonable. Based on the above, Concentric recommends the Iowa 30-R2 to represent the future expectations for the investment in this account.

ACCOUNT 3061 – O/H – SMD-20 SWITCHES

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$26,999,035	0.55%	45	25-R3

The assets in this account relate to fuses and switches located on the overhead distribution system. These assets are used primarily for capacity restoration and are replaced with SCADA compatible switches whenever needed. It is expected that the move to SCADA compatible switches may have a life shortening impact. Switches are generally retired due to failure or as a result of the associated pole being replaced.

The net book value in O/H – Switches is approximately \$26.9 million, representing 0.55 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2013 through 2022 were analyzed by the retirement rate method. Retirements of \$1.8 million were recorded for the period 2015 through 2022, resulting in actual observed data points as depicted on page 5-105. The Iowa 25-R3 provides a residual measure of 0.1568. A review of peer Canadian electric distribution utilities indicates a range of 7 – 48 years. The accounting and engineering lives for SMD-Switches account have historically been 45 years for planning purposes, however the SMD-20 switches are likely to have a shorter life. Further, the impact of SCADA compatible switches and the impact of technological change will likely have a life shortening impact on these assets. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 25 years is reasonable. Based on the above, Concentric recommends the Iowa 25-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3411 – O/H – POLES STL CONVENTIONAL LEGACY

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$35,241,602	0.72%	40	55-R3

The assets in this account relate to steel poles located throughout the Toronto Hydro service area. The majority of the overhead system utilizes wooden poles. Common forces of retirement include change in voltage requirements, relocations, third party strikes, and tree contact. Poles are recycled upon retirement, and do not have any scrap value.

The net book value in O/H – Poles Stl Conventional Legacy is approximately \$35.2 million, representing 0.72 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2015 through 2022 were analyzed by the retirement rate method. Retirements of \$1.9 million were recorded for the period 2019



through 2022, resulting in actual observed data points as depicted on page 5-107. The Iowa 55-R3 provides a residual measure of 0.0657. A review of peer Canadian electric distribution utilities indicates a range of 43 to 55 years, although it is noted that many peer accounts include towers, crossarms, and other assets with differing life characteristics. The 2010 Kinetrics report suggested a range of 60 – 80 years. The accounting and engineering life for this account has historically been 40 years and the engineering SMEs have historically used a life of 55 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 55 years is reasonable. Based on the above, Concentric recommends the Iowa 55-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3511 – U/G CONDUIT – DUCT BANK

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$932,089,696	19.12%	30	50-R3

The assets in this account relate to duct banks containing underground cable.

The net book value in U/G Conduit – Duct Bank is approximately \$932.1 million, representing 19.12 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1985 through 2022 were analyzed by the retirement rate method. Retirements of \$2.2 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-113. The Iowa 50-R3 provides a residual measure of 0.2821. A review of peer Canadian electric distribution utilities indicates a range of 30 to 76 years. The 2010 Kinetrics report suggested a range of 30 – 85 years. The accounting life for this account has historically been 30 years and the engineering SMEs have historically used a life of 55 years for planning purposes but agree the use of 50 years is reasonable. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 50 years is reasonable. Based on the above, Concentric recommends the Iowa 50-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3513 – U/G CONDUIT - VAULT

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$117,304,905	2.41%	40	60-R2.5

The assets in this account relate to vaults containing underground cable.

The net book value in U/G Conduit – Vaults is approximately \$117.3 million, representing 2.41 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1979 through 2022 were analyzed by the retirement rate method. Retirements of \$1.9 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-116. The Iowa 60-R3 provides a residual measure of 0.3151. A review of peer Canadian electric distribution utilities indicates a range of 30 to 75 years. The 2010 Kinetrics report suggested a range of 40 – 80 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 60 years for



planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 60 years is reasonable. Based on the above, Concentric recommends the Iowa 60-R2.5 to represent the future expectations for the investment in this account.

ACCOUNT 3515 – U/G CONDUIT – VAULT ROOF

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$15,221,592	0.31%	20	25-R3

The assets in this account relate to the roof of the vaults containing underground cable. These roofs have ventilation and are often made out of slats.

The net book value in U/G Conduit – Vault Roof is approximately \$15.2 million, representing 0.31 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1988 through 2022 were analyzed by the retirement rate method. There were no retirements recorded through 2022, resulting in actual observed data points as depicted on page 5-119. The Iowa 25-R3 provides a residual measure of 2.3287 for this account. A review of peer Canadian electric distribution utilities indicates a range of 30 to 75 years, although it is noted that the peer utilities include both vaults and roofs in a single account. The 2010 Kinetrics report suggested a range of 20 – 45 years. The accounting life for this account has historically been 20 years and the engineering SMEs have historically used a life of 25 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 25 years is reasonable. Based on the above, Concentric recommends the Iowa 25-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3517 – U/G CONDUIT – CABLE CHAMBER

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$227,729,942	4.67%	50	65-R4

The assets in this account relate to the cable chambers containing underground cable. These chambers are smaller than similar vaults.

The net book value in U/G Conduit – Cable Chamber is approximately \$227.7 million, representing 4.67 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1979 through 2022 were analyzed by the retirement rate method. Retirements in the amount of \$1.2 million were recorded for the period 2015 through 2022, resulting in actual observed data points as depicted on page 5-122. The Iowa 65-R4 provides a residual measure of 0.112. A review of peer Canadian electric distribution utilities indicates a range of 30 to 76 years, although it is noted that the peer utilities include both chambers and roofs in a single account. The 2010 Kinetrics report suggested a range of 50 - 80 years. The accounting life for this account has historically been 50 years and the engineering SMEs have historically used a life of 65 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 65 years is reasonable. Based on the



above, Concentric recommends the Iowa 65-R4 to represent the future expectations for the investment in this account.

ACCOUNT 3611 – U/G – PRIMARY CABLE DUCT (xLPE)

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$730,454,448	14.98%	40	50-R3

The assets in this account relate to primary cable located in ducts throughout the Toronto Hydro service area. This cable operates at 4 kV, 13.8 kV, or 27.6 kV. There is currently an ongoing replacement program targeting the 4 kV conductor and replace it with 13 kV or 27.6 kV. Common forces of retirement include upgrades to the feeders, an increase in the required voltage, capacity requirements of the surrounding area, and age of the cable.

The net book value in U/G – Primary Cable Duct (xLPE) is approximately \$730.5 million, representing 14.98 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1980 through 2022 were analyzed by the retirement rate method. Retirements of \$24.2 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-134. The Iowa 50-R3 provides a residual measure of 1.4426. A review of peer Canadian electric distribution utilities indicates a range of 30 to 60 years. The 2010 Kinetrics report suggested a range of 35 – 55 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 50 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 50 years is reasonable. Based on the above, Concentric recommends the Iowa 50-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3613 – U/G – PRIMARY CABLE BURIED (xLPE)

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$415,904	0.01%	20	20-R2

The assets in this account relate to primary buried cable located throughout the Toronto Hydro service area. This cable operates at 4 kV, 13.8 kV, or 27.6 kV. There is currently an ongoing replacement program removing the direct buried cable. Common forces of retirement include upgrades to the feeders, an increase in the required voltage, capacity requirements of the surrounding area, and age of the cable.

The net book value in U/G – Primary Cable Buried is approximately \$415 thousand, representing 0.01 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2010 through 2022 were analyzed by the retirement rate method. Retirements of \$750 thousand were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-137. The Iowa 20-R2 provides a residual measure of 0.3517. A review of peer Canadian electric distribution utilities indicates a range of 30 to 60 years, however it is noted that many peers include all primary cable in the same account which may result in assets with differing life characteristics being included in the peer analysis. The



accounting life for this account has historically been 20 years and the engineering SMEs have historically used a life of 23 years for planning purposes. Based on discussions with Toronto Hydro operational and management staff, Concentric recommends no change to the currently approved life of 20 years. Concentric recommends the Iowa 20-R2 to represent the future expectations for the investment in this account.

ACCOUNT 3615 – U/G – PRIMARY PILC CABLE

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$138,186,314	2.83%	60	65-R3

The assets in this account relate to primary Paper Insulated Lead Covered (PILC) cable located in ducts throughout the Toronto Hydro service area. This cable operates at 4 kV, 13.8 kV, or 27.6 kV. There is currently an ongoing replacement program targeting the 4 kV conductor and replace it with 27.6 kV. Common forces of retirement include upgrades to the feeders, an increase in the required voltage, capacity requirements of the surrounding area, and age of the cable. There is an ongoing replacement program targeting the assets in this account.

The net book value in U/G – Primary PILC Cable is approximately \$138.2 million, representing 2.83 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1980 through 2022 were analyzed by the retirement rate method. Retirements of \$28.1 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-139. The Iowa 65-R3 provides a residual measure of 1.7716. A review of peer Canadian electric distribution utilities indicates a range of 30 to 60 years, however it is noted that many peers include all primary cable in the same account which may result in assets with differing life characteristics being included in the peer analysis. The 2010 Kinetics report suggested a range of 60 – 75 years. The accounting life for this account has historically been 60 years and the engineering SMEs have historically used a life of 75 years for planning purposes, however it is expected that the lead covering will result in increased retirements in the future. Given the shorter life indications from the historical data and the peer review, Concentric recommends a moderated life increase at this time. While a life of up to 75 years may be appropriate, Concentric recommends the Iowa 65-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3617 – U/G – SECONDARY CABLE IN DUCT

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$184,600,888	3.79%	40	60-R3

The assets in this account relate to secondary cable contained in ducts throughout the Toronto Hydro service area. Secondary cable is primarily used to connect vaults together or as part of a network.

The net book value in U/G – Secondary Cable in Duct is approximately \$184.6 million, representing 3.79 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1980 through 2022 were analyzed by the retirement rate method. Retirements of \$1.2 million were recorded for the period 2014 through



2022, resulting in actual observed data points as depicted on page 5-142. The Iowa 60-R3 provides a residual measure of 0.9088. A review of peer Canadian electric distribution utilities indicates a range of 30 to 70 years, however it is noted that many peers include all secondary and service cable in the same account which may result in assets with differing life characteristics being included in the peer analysis. Consequently, most peer utilities include cable not in a duct with the secondary and service cable. As such, Toronto Hydro should be on the longer end of the peer review, necessitating an increase from the currently approved average service life estimate. The 2010 Kinetrics report suggested a range of 35 – 60 years. The accounting life for this account has historically been 40 years and the engineering SMEs have historically used a life of 50 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 60 years is reasonable. Based on the above, Concentric recommends the Iowa 60-R3 to represent the future expectations for the investment in this account.

ACCOUNT 3625 – U/G – SWITCH INSTALLATION

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$95,556,759	1.96%	20	40-R3

The assets in this account relate to switches located on the underground distribution system. These assets are used primarily for capacity restoration and are replaced with SCADA compatible switches whenever needed. It is expected that the move to SCADA compatible switches may have a life shortening impact, however this has not yet been seen for the assets in this account overall.

The net book value in U/G – Switch Installation is approximately \$95.6 million, representing 1.96 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1995 through 2022 were analyzed by the retirement rate method. Retirements of \$28.8 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-152. The Iowa 40-R3 provides a residual measure of 1.6076. A review of peer Canadian electric distribution utilities indicates a range of 38 to 60 years. The accounting life for this account has historically been 20 years and the engineering SMEs have historically used an average life of 40 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 40 years is reasonable. Based on the above, Concentric recommends the Iowa 40-R3 to represent the future expectations for the investment in this account.



ACCOUNT 4011 – DIST TRANSF – GENERAL OVERHEAD

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$176,708,602	3.62%	30	35-R3

The assets in this account relate to transformers located throughout the Toronto Hydro system. Transformers are reused where possible, which may have a life lengthening impact compared to some peers. However, there has also been an ongoing retirement program related to transformers containing PCBs. This program is planned to be completed by 2025 with 3,076 overhead transformers remaining at the time of this report.

The net book value in Dist Transformers – General Overhead in Duct is approximately \$176.7 million, representing 3.62 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1983 through 2022 were analyzed by the retirement rate method. Retirements of \$16.6 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-157. The Iowa 35-R3 provides a residual measure of 0.9579. A review of peer Canadian electric distribution utilities indicates a range of 30 to 50 years. The 2010 Kinetrics report suggested a range of 20 – 50 years. The accounting life for this account has historically been 30 years and the engineering SMEs have historically used a life of 35 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 35 years is reasonable. Based on the above, Concentric recommends the Iowa 35-R3 to represent the future expectations for the investment in this account.

ACCOUNT 4013 – DIST TRANSF – UNDERGROUND

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$347,436,084	7.13%	30	30-R2

The assets in this account relate to underground transformers located throughout the Toronto Hydro system. Transformers are reused where possible, which may have a life lengthening impact compared to some peers. However, there has also been an ongoing retirement program related to transformers containing PCBs. This program is planned to be completed by 2025 with 2,278 underground transformers remaining at the time of this report. It is expected that underground transformers may have a life that is shorter than overhead transformers due to the increased forces of retirement related to snow, salt, and third-party strikes.

The net book value in Dist Transformers – Underground is approximately \$347.4 million, representing 7.13 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1984 through 2022 were analyzed by the retirement rate method. Retirements of \$53.2 million were recorded for the period 2014 through 2021, resulting in actual observed data points as depicted on page 5-160. The Iowa 30-R2 provides a residual measure of 0.5834. A review of peer Canadian electric distribution utilities indicates a range of 33 to 50 years. The 2010 Kinetrics report suggested a range of 25 – 45 years. The



accounting life for this account has historically been 30 years and the engineering SMEs have historically used an average life of 35 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 30 years is reasonable. Based on the above, Concentric recommends the Iowa 30-R2 to represent the future expectations for the investment in this account.

ACCOUNT 4015 – DIST TRANSF – U/G NETWORK W/ PROTECTOR

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$139,780,173	2.87%	20	35-R3

The assets in this account relate to underground transformers with protection devices located throughout the Toronto Hydro system. Transformers are reused where possible, which may have a life lengthening impact compared to some peers. However, there has also been an ongoing retirement program related to transformers containing PCBs. This program is planned to be completed by 2025 with 66 network transformers remaining at the time of this report. It is expected that underground transformers may have a life that is shorter than overhead transformers due to the increased forces of retirement related to snow, salt, and third-party strikes.

The net book value in Dist Transformers – Underground Network with Protection is approximately \$139.8 million, representing 2.787 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1995 through 2022 were analyzed by the retirement rate method. Retirements of \$7.9 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-163. The Iowa 35-R3 provides a residual measure of 1.1614. A review of peer Canadian electric distribution utilities indicates a range of 40 to 55 years. The 2010 Kinetics report suggested a range of 20 – 50 years. The accounting life for this account has historically been 20 years and the engineering SMEs have historically used a life of 35 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 35 years is reasonable. Based on the above, Concentric recommends the Iowa 35-R3 to represent the future expectations for the investment in this account.

ACCOUNT 4111 – O/H SERVICES

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$62,443,839	1.28%	50	60-R2

The assets in this account relate to overhead services located throughout the Toronto Hydro system. The net book value in Overhead Services is approximately \$62.4 million, representing 1.28 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1988 through 2022 were analyzed by the retirement rate method. Retirements of \$4.8 million were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-166. The Iowa 60-R2 provides a residual measure of 1.0568. A review of peer Canadian electric distribution utilities indicates a range of 35 to 55 years,



however it is noted that many peers include all secondary and service cable in the same account which may result in assets with differing life characteristics being included in the peer analysis. The 2010 Kinetrics report suggested a range of 50 – 75 years, although it is noted that all overhead cable is included in the same account. The accounting life for this account has historically been 50 years and the engineering SMEs have historically used a life of 64 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 60 years is reasonable. Based on the above, Concentric recommends the Iowa 60-R2 to represent the future expectations for the investment in this account.

ACCOUNT 4113 – U/G SERVICES IN DUCT

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$48,413,205	0.99%	40	50-R3

The assets in this account relate to underground services contained in ducts located throughout the Toronto Hydro system.

The net book value in Underground Services in Duct is approximately \$48.4 million, representing 0.99 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2000 through 2022 were analyzed by the retirement rate method. Retirements of \$922 thousand were recorded for the period 2014 through 2022, resulting in actual observed data points as depicted on page 5-169. The Iowa 50-R3 provides a residual measure of 0.0741. A review of peer Canadian electric distribution utilities indicates a range of 30 to 55 years, however it is noted that many peers include all secondary and service cable in the same account which may result in assets with differing life characteristics being included in the peer analysis. The 2010 Kinetrics report suggested a range of 35 – 60 years, although it is noted that both underground services and underground secondary cable are included in the same grouping. The accounting and engineering lives for this account have historically been 40 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 50 years is reasonable. Based on the above, Concentric recommends the Iowa 50-R3 to represent the future expectations for the investment in this account.

ACCOUNT 4611 – DIST METERS – SMART METERS RESIDENTIAL

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$29,336,561	0.60%	15	15-R3

The assets in this account relate to Advanced Meter Infrastructure (“AMI”) meters installed in residential locations throughout the Toronto Hydro service area. These meters began to be installed between 2006 and 2008 resulting in the earliest meters reaching the end of their useful lives. Toronto Hydro is undertaking a transition to a second generation AMI meter, which will require the retirement of the first generation meters and collecting devices. The new meters will have better functionality and better align with energy transition considerations. The transition to new meters is



expected to begin in 2023. Currently the largest force of retirement for AMI meters is reaching the physical end of life, generally between 15 and 18 years.

The net book value in Dist Meters – Smart Meters Residential is approximately \$29.3 million, representing 0.60 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2000 through 2022 were analyzed by the retirement rate method. Retirements of \$8.3 million were recorded for the period 2015 through 2022, resulting in actual observed data points as depicted on page 5-177. The Iowa 15-R3 provides a residual measure of 0.759. A review of peer Canadian electric distribution utilities indicates a range of 15 to 25 years. The 2010 Kinetrics report suggested a range of 5 – 15 years, although it is noted that the technology currently being installed may vary from that available at the time of 2010 study. The accounting and engineering lives for this account have historically been 15 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 15 years is reasonable. Based on the above, Concentric recommends the Iowa 15-R3 to represent the future expectations for the investment in this account.

ACCOUNT 4613 – DIST METERS – SMART METERS GS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$37,999,872	0.78%	15	15-R3

The assets in this account relate to Advanced Meter Infrastructure (“AMI”) meters installed in general service throughout the Toronto Hydro service area. These meters began to be installed between 2006 and 2008 resulting in the earliest meters reaching the end of their useful lives. Toronto Hydro is undertaking a transition to a second-generation AMI meter, which will require the retirement of the first-generation meters and collecting devices. The new meters will have better functionality and better align with energy transition considerations. The transition to new meters is expected to begin in 2023. Currently the largest force of retirement for AMI meters is reaching the physical end of life, generally between 15 and 18 years.

The net book value in Dist Meters – Smart Meters GS is approximately \$38 million, representing 0.78 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2006 through 2022 were analyzed by the retirement rate method. Retirements of \$6.7 million were recorded for the period 2015 through 2022, resulting in actual observed data points as depicted on page 5-179. The Iowa 15-R3 provides a residual measure of 0.4643. A review of peer Canadian electric distribution utilities indicates a range of 15 to 20 years. The 2010 Kinetrics report suggested a range of 5 – 15 years, although it is noted that the technology currently being installed may vary from that available at the time of 2010 study. The accounting and engineering lives for this account have historically been 15 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 15 years is reasonable. Based on the above, Concentric recommends the Iowa 15-R3 to represent the future expectations for the investment in this account.



ACCOUNT 6251 – ROLLING STOCK – VEHICLES > 3 TONS

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$11,047,300	0.23%	8	12-L3

The assets in this account relate to heavy duty vehicles, including material handlers, dump trucks, cable trucks, crane trucks, line trucks, and single bucket trucks.

The investment in Rolling Stock – Vehicles Greater than Three Tons is approximately \$11 million, representing 0.23 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 1962 through 2022 were analyzed by the retirement rate method. Retirements of \$18.2 million were recorded for the period 2010 through 2022, resulting in actual observed data points as depicted on page 5-187. The Iowa 12-L3 provides a residual measure of 0.9683. A review of peer Canadian electric distribution utilities indicates a range of 8 to 19 years. The 2010 Kinetrics report suggested a range of 5 – 15 years, although it is noted that this range includes all trucks, and therefore likely has some influence of shorter-lived light weight vehicles. The accounting and engineering lives for this account have historically been 8 years for planning purposes. An independent third-party life cycle analysis of the Toronto Hydro fleet concluded that many of the assets within this account have a useful life of 10 to 14 years. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 12 years is reasonable. Based on the above, Concentric recommends the Iowa 12-L3 to represent the future expectations for the investment in this account.

ACCOUNT 6455 – SYSTEM SUPERVISORY – SCADA RTU

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$50,753,353	1.04%	15	20-R3

The net book value in System Supervisory – SCADA RTU is approximately \$50.8 million, representing 1.04 percent of the total depreciable distribution and common assets studied. The retirements, additions and other plant transactions for the period 2001 through 2022 were analyzed by the retirement rate method. Retirements of \$71 thousand were recorded for the period 2018 through 2022, resulting in actual observed data points as depicted on page 5-201. The Iowa 20-R3 provides a residual measure of 0.7343. The 2010 Kinetrics report suggested a range of 15 - 30 years. The accounting life for this account has historically been 15 years and the engineering SMEs have historically used a life of 20 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 20 years is reasonable. Based on the above, Concentric recommends the Iowa 20-R3 to represent the future expectations for the investment in this account.



ACCOUNT 8011 – SOFTWARE ENTERPRISE

2023 Net Book Value	Investment %	Previously Approved Life	Concentric Recommended Life
\$89,644,033	1.84%	10	10-SQ

The net book value in Software Enterprise is approximately \$89.6 million, representing 1.84 percent of the total depreciable distribution and common assets studied. As this account uses amortization accounting, an actuarial analysis was not completed. The 2010 Kinetrics report suggested a range of 2 – 5 years, although this range includes smaller software packages than those included in the Toronto Hydro account. A review of peer Canadian electric distribution utilities indicates a range of 6 to 11 years. The accounting and engineering lives for this account have historically been 10 years for planning purposes. Discussions with Toronto Hydro operational and management staff indicated that a life of approximately 10 years is reasonable, however there may be software packages that require a shorter life due to agreements with vendors. In these circumstances, it is reasonable to amortize the software package over the life of the agreement. Based on the above, Concentric recommends the 10-SQ to represent the future expectations for the investment in this account.



SECTION 4

4 RESULTS OF STUDY

4.1 Qualification of Results

The average service life estimates are the principal results of the study and are shown in Tables 1, 2, and 3. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual parameters. An assumption that depreciation parameters can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service.

Toronto Hydro

**TABLE 1 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2023
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense
1101 Buildings Adm Existing Structures	N/A**	50	R0.5	\$ 4,721,165	\$ 1,038,867
1103 Buildings Adm Substructure	N/A**	75	R3	\$ 5,666,278	\$ 131,919
1105 Buildings Adm Shell Site	N/A**	25	R3	\$ 10,495,004	\$ 603,903
1107 Buildings Adm Interior	N/A**	25	R3	\$ 14,618,335	\$ 1,615,731
1113 Buildings Service Centres Substructure	N/A**	75	R3	\$ 29,358,069	\$ 906,000
1115 Buildings Service Centres Shell Site	N/A**	25	R3	\$ 49,382,907	\$ 2,597,298
1117 Buildings Service Centres Interior	N/A**	25	R3	\$ 70,874,437	\$ 6,432,581
1131 Buildings Substation Structure	N/A**	50	R0.5	\$ 8,752,288	\$ 2,975,458
1133 Buildings Substation Substructure	N/A**	75	R3	\$ 97,645,063	\$ 1,666,312
1134 Building Substation Substructure - CC	N/A**	75	R3	-\$ 302,801	-\$ 4,813
1135 Buildings Substation Shell Site	N/A**	25	R3	\$ 15,622,063	\$ 973,175
1136 Building Substation Interior-Capital Contribution	N/A**	25	R3	-\$ 497,343	-\$ 30,476
1137 Buildings Substation Interior	N/A**	25	R3	\$ 29,726,095	\$ 3,853,439
1138 Buildings Substation Shell Site - CC	N/A**	25	R3	-\$ 84,571	-\$ 3,029
1150 Buildings Substation ARO	N/A**	0	R3	\$ -	\$ -
1171 Leasehold Improvements - Admin	5	5	R3	\$ 26,598	\$ 7,254
1173 Leasehold Improvements - Service Centres	5	5	R3	\$ 112,763	\$ 38,661
2011 Transformer Station Equip - Power Transformer	32	45	R3	\$ 18,143,761	\$ 482,998
2013 Transformer Station Equip - Steel Struct Bus Work	35	50	R3	\$ 64,524	\$ 2,933
2015 Transformer Station Equip - Disconnect Switch	30	45	R3	\$ 15,637	\$ 920
2017 Transformer Station Equip - Station Service	32	45	R3	\$ 4,362,804	\$ 109,587
2019 Transformer Station Equip - High Voltage Switchgear	50	50	R3	\$ 8,030,306	\$ 179,783
2101 Substation Equipment - Steel Structures Bus Work	35	50	R3	\$ 406,123	\$ 10,517
2103 Substation Equipment - Disconnect Switch	30	40	R3	\$ 1,706,215	\$ 63,499
2104 Substation Equipment - Disconnect Switch CC	30	40	R3	-\$ 29,262	-\$ 755
2105 Substation Equipment - MS Station Service	32	50	R3	\$ 21,045	\$ 756
2107 Substation Equipment - DC Stn Service Batteries	10	10	R3	\$ 4,177,786	\$ 782,760
2109 Substation Equipment - DC Stn Service Chargers	20	20	R3	\$ 4,719,809	\$ 360,941
2111 Substation Equipment - Outdoor Breaker	30	45	R3	\$ 22,307,820	\$ 632,604
2112 Substation Equip Outdr Brk - Capital Contribution	30	45	R3	-\$ 425,739	-\$ 9,301
2113 Substation Equipment - Indoor Breaker	30	45	R3	\$ 12,192,523	\$ 401,134
2114 Substation Equip Indr Brk - Capital Contribution	30	45	R3	-\$ 1,374,681	-\$ 35,362
2115 Substation Equipment - Station Relays	10	15	R3	\$ 12,614,711	\$ 1,036,480
2116 Substation Equip Stn Relays - Capital Contribution	10	15	R3	-\$ 444,330	-\$ 39,375

Toronto Hydro

**TABLE 1 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2023
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense
2117 Substation Equipment - Switchgear Air	40	50	R3	\$ 64,195,591	\$ 1,459,205
2119 Substation Equipment - Switchgear GIS	40	50	R3	\$ 38,824,443	\$ 878,406
2123 Substation Equipment - Power Transformers	32	45	R3	\$ 25,646,294	\$ 870,569
2125 Substation Equipment - Grounding System	25	35	R3	\$ 1,119,191	\$ 37,918
2127 Substation Equipment - Grounding Transformer	30	45	R3	\$ 276,699	\$ 8,239
3011 O/H - Poles Concrete Legacy	50	55	R2	\$ 41,885,813	\$ 1,147,458
3012 O/H - Poles Concrete - Capital Contribution Legacy	50	55	R2	-\$ 2,557,947	-\$ 53,566
3013 O/H - Poles Wood	40	45	R0.5	\$ 327,139,939	\$ 9,432,465
3014 O/H - Poles Wood - Capital Contribution	40	45	R0.5	-\$ 20,669,099	-\$ 582,158
3051 O/H - Conductors	50	60	R2	\$ 121,868,987	\$ 2,501,284
3052 O/H - Conductors - Capital Contribution	50	60	R2	-\$ 11,224,729	-\$ 273,906
3053 O/H - Secondary conductors	50	60	R3	\$ 213,675,792	\$ 4,325,645
3054 O/H - Secondary conductors - Capital Contribution	50	60	R3	-\$ 10,771,869	-\$ 252,055
3057 O/H - Switches	30	30	R2	\$ 120,324,226	\$ 5,273,241
3058 O/H - Switches - Capital Contribution	30	30	R2	-\$ 13,060,089	-\$ 469,816
3061 O/H - SMD-20 Switches	45	25	R3	\$ 26,999,035	\$ 1,351,690
3062 O/H - SMD-20 Switches - Capital Contribution	45	25	R3	-\$ 3,204,757	-\$ 161,610
3411 O/H - Poles STL Conventional Legacy	40	55	R3	\$ 35,241,602	\$ 836,396
3427 O/H - Poles Handwell	40	20	R3	\$ 959,608	\$ 66,423
3451 O/H - Street Lighting Cable	40	50	R3	\$ 5,870,985	\$ 126,873
3511 U/G Conduit - Duct Bank	30	50	R3	\$ 932,089,696	\$ 21,955,650
3512 U/G Conduit - Duct Bank - Capital Contribution	30	50	R3	-\$ 119,365,161	-\$ 2,536,715
3513 U/G Conduit - Vault	40	60	R2.5	\$ 117,304,905	\$ 2,646,204
3514 U/G Conduit - Vault - Capital Contribution	40	60	R2.5	-\$ 2,054,698	-\$ 37,081
3515 U/G Conduit - Vault Roof	20	25	R3	\$ 15,221,592	\$ 1,375,892
3516 U/G Conduit - Vault Roof - Capital Contribution	20	25	R3	-\$ 188,063	-\$ 8,424
3517 U/G Conduit - Cable Chamber	50	65	R4	\$ 227,729,942	\$ 4,066,711
3518 U/G Conduit - Cable Chamber - Capital Contribution	50	65	R4	-\$ 56,639,142	-\$ 909,997
3521 U/G Conduit - Cable Chamber Roof	20	25	R3	\$ 8,400,884	\$ 791,473
3522 U/G Conduit - CC Roof - Capital Contribution	20	25	R3	-\$ 263,330	-\$ 11,739
3523 U/G Conduit - Civil Street Lighting	50	50	R3	\$ 2,570,066	\$ 101,048
3524 Cable Chamber Lid - Capital Contribution	25	25	R3	-\$ 17,331	-\$ 700
3525 Cable Chamber Lid	25	25	R3	\$ 8,062,316	\$ 341,694
3609 UG Dist Lines – High Voltage Cable	40	50	R3	\$ 2,436,069	\$ 53,054

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**TABLE 1 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2023
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense
3610 U/G - Dist Lines & Feeders - Capital Contribution	25	50	R3	\$ 12,439	-\$ 9
3611 U/G - Primary Cable Duct (xLPE)	40	50	R3	\$ 730,454,448	\$ 17,889,157
3612 U/G - Primary Cable Duct - Capital Contribution	40	50	R3	-\$ 163,047,021	-\$ 4,168,789
3613 U/G - Primary Cable Buried (xLPE)	20	20	R2	\$ 415,904	\$ 57,943
3614 U/G - Primary Cable Buried - Capital Contribution	20	20	R2	-\$ 31,895	-\$ 2,640
3615 U/G - Primary PILC Cable	60	65	R3	\$ 138,186,314	\$ 2,937,930
3616 U/G - Primary PILC Cable - Capital Contribution	60	65	R3	-\$ 9,766,861	-\$ 294,601
3617 U/G - Secondary Cable in Duct	40	60	R3	\$ 184,600,888	\$ 3,569,628
3618 U/G - Secondary Cable in Duct-Capital Contribution	40	60	R3	-\$ 21,191,140	-\$ 472,921
3619 U/G - Secondary Cable Direct Buried	20	23	R3	\$ 4,004	\$ 377
3620 U/G - Secondary Cable DB - Capital Contribution	20	23	R3	\$ -	\$ -
3621 U/G - Handwells	20	20	R3	\$ 20,435,699	\$ 1,798,052
3622 U/G - Handwells - Capital Contribution	20	20	R3	-\$ 47,485	-\$ 3,744
3623 U/G - ATS Switches	30	40	R3	\$ 47,844	\$ 2,184
3624 U/G - ATS Switches - Capital Contribution	30	40	R3	-\$ 52,474	-\$ 1,340
3625 U/G - Switch Installation	20	40	R3	\$ 95,556,759	\$ 2,697,518
3628 U/G - Padmount Switchgear - Capital Contribution	20	40	R3	-\$ 11,366,435	-\$ 304,141
3630 U/G - Cable ARO	60	60	R3	-\$ 163,685	-\$ 4,111
3711 Network Automation Vaultt Communication	10	10	R3	\$ 25,281,826	\$ 3,078,598
3712 Network Automation Vault Communication-CC	10	10	R3	-\$ 87,143	-\$ 10,560
4011 Dist Transf - General Overhead	30	35	R3	\$ 176,708,602	\$ 6,322,070
4012 Dist Transf - Overhead - Capital Contribution	30	35	R3	-\$ 12,856,108	-\$ 493,600
4013 Dist Transf - Underground	30	30	R2	\$ 347,436,084	\$ 16,831,719
4014 Dist Transf - Underground - Capital Contribution	30	30	R2	-\$ 30,792,308	-\$ 1,242,762
4015 Dist Transf - U/G Network w/ Protector	20	35	R3	\$ 139,780,173	\$ 4,673,873
4016 Dist Transf - U/G NW w/ Protector-Capital Contrib	20	35	R3	-\$ 3,815,320	-\$ 120,280
4111 O/H Services	50	60	R2	\$ 62,443,839	\$ 1,353,008
4112 O/H Services - Capital Contribution	50	60	R2	-\$ 902,702	-\$ 38,141
4113 U/G Services in Duct	40	50	R3	\$ 48,413,205	\$ 1,172,296
4114 U/G Services in Duct - Capital Contribution	40	50	R3	-\$ 5,121,939	-\$ 125,707
4115 U/G Services Secondary Cable Direct Buried	20	23	R3	-\$ 12,856	-\$ 1,085
4510 Dist Meters - Capital Contribution	25	15	R3	-\$ 45,212	-\$ 6,545
4511 Dist Meters - Demand/Energy Meters	25	15	R3	\$ 29,290,543	\$ 5,740,935
4512 Demand Energy Meter - Capital Contribution	25	15	R3	-\$ 5,875,700	-\$ 581,685

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**TABLE 1 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2023
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense
4513 Dist Meters - Meters Transformers	40	40	R3	\$ 18,261,036	\$ 709,665
4514 Meter Transformers - Capital Contribution	40	40	R3	-\$ 5,330,277	-\$ 191,001
4515 Dist Meters - Suite Meters	15	15	R3	\$ 33,884,070	\$ 3,813,996
4611 Dist Meters - Smart Meters Residential	15	15	R3	\$ 29,336,561	\$ 4,778,630
4613 Dist Meters - Smart Meters GS	15	15	R3	\$ 37,999,872	\$ 4,638,900
4711 Grid Point Meters	25	25	R3	\$ 31,082,531	\$ 1,667,067
5011 Street Lighting Luminaires	0	0	R3	\$ -	\$ -
5013 Street Lighting Luminaire Brackets	0	0	R3	\$ -	\$ -
5031 Street Lighting Distribution Assembly	20	25	R3	\$ 73,103	\$ 3,374
6011 General Office Furnishings & Equipment	N/A**	15	SQ	\$ 5,882,642	\$ 753,287
6111 Computer Hardware - Client/Network	4	4	SQ	\$ 19,403,201	\$ 8,141,481
6113 Computer Hardware - Printers/storage	5	5	SQ	\$ 5,079,739	\$ 1,886,098
6115 Computer Hardware - P series Servers	6	6	SQ	\$ 2,869,483	\$ 1,255,283
6117 Computer Hardware - Data centre Cabling/racks	10	10	SQ	\$ 612,934	\$ 167,164
6131 Computer Hardware - Scada	5	5	SQ	\$ 4,943,458	\$ 1,466,235
6231 Rolling Stock - Vehicles < 3 Tons	5	9	L3	\$ 5,531,365	\$ 691,279
6251 Rolling Stock - Vehicles > 3 Tons	8	12	L3	\$ 11,047,300	\$ 1,220,365
6271 Rolling Stock - Service Equipment	8	20	R4	\$ 1,013,743	\$ 56,450
6281 Rolling Stock - Electric Vehicles	4	7	L1	\$ 155,120	\$ 29,547
6282 Rolling Stock - Electric Vehicle Charge Stations	10	10	R3	\$ 58,537	\$ 9,894
6290 Energy Storage Inverter - Capital Contribution	20	20	R3	-\$ 499,418	-\$ 27,875
6291 Energy Storage Inverter	20	20	R3	\$ 2,886,548	\$ 164,014
6292 Energy Storage System Battery	10	10	R3	\$ 989,325	\$ 124,967
6293 Energy Storage System Battery-Contributed Capital	10	10	R3	-\$ 220,634	-\$ 27,869
6311 Stores Equipment	10	15	SQ	\$ 9,267	\$ 621
6331 Tools and Equipment - Tools and Misc Equipment	10	10	SQ	\$ 15,551,994	\$ 2,678,177
6333 Tool Crib	10	10	SQ	\$ -	\$ -
6335 Linehose	6	6	SQ	\$ -	\$ -
6351 Testing Equipment - Instruments	10	15	SQ	\$ -	\$ -
6371 Communication Equipment - Wireless	5	5	SQ	\$ 440,634	\$ 331,521
6391 Communication Equipment - Network Mgmt Equipmnt	5	5	SQ	\$ -	\$ -
6411 Communication Equipment - Telephony	5	5	SQ	\$ 8,992,907	\$ 2,167,366
6431 Miscellaneous Equipment	10	10	SQ	\$ 1,237	\$ 391
6451 System Supervisory Equipment	15	20	R3	\$ 1,980,435	\$ 167,672

Toronto Hydro

**TABLE 1 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2023
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense
6452 System Supervisory Eq - Capital Contribution	15	20	R3	-\$ 12,919,419	-\$ 690,906
6453 System Supervisory - Scadamate Switches	30	30	R3	\$ 1,642,471	\$ 113,620
6455 System Supervisory - Scada RTU	15	20	R3	\$ 50,753,353	\$ 3,092,349
6511 Fibre Optic Network - Control Cable	10	20	R3	\$ 10,545,925	\$ 585,279
6512 Fibre Optic Network - Capital Contribution	20	20	R3	-\$ 99,826	-\$ 5,012
6531 Fibre Optic Network - Customer Term Equipment	10	10	R3	\$ 9,053,010	\$ 619,139
6533 Fibre Optic Network - Substation Term Equipment	10	10	R3	\$ 69,425	\$ 10,752
6534 Fibre Optic Network-Substation Term Equipment - CC	10	10	R3	-\$ 41,269	-\$ 5,213
7111 Load Management Controls - Customer Location	10	10	R3	\$ -	\$ -
8011 Software Enterprise	10	10	SQ	\$ 89,644,033	\$ 23,823,284
8031 Software Client	4	4	SQ	\$ 1,855,754	\$ 1,028,989
8051 Software General	5	5	SQ	\$ 13,728,909	\$ 4,176,249
8071 Contribution to HONI Station	25	25	0	\$ 225,255,660	\$ 11,081,625
8511 Capital Allocations	25	25	0	\$ 23,769	\$ 23,769
TOTAL PLANT STUDIED				\$ 4,875,873,651	\$ 221,915,421
* Applied to grouped assets only					
PLANT NOT STUDIED					
1011 Land - Administration	N/A	N/A	N/A	\$ 8,008,235	\$ -
1013 Land - Service Centres	N/A	N/A	N/A	\$ 9,347,822	\$ -
1031 Land - Substations	N/A	N/A	N/A	\$ 1,441,142	\$ -
1051 Land - Transformer Stations	N/A	N/A	N/A	\$ 5,557,807	\$ -
1071 Land - Finance Lease	99	99	0	\$ 6,386,284	\$ 89,423
1511 ROU - Property Leases	5	5	0	\$ 189,944	\$ 38,633
4031 Dist Transf - ARO	25	25	0	\$ 360,917	\$ 49,999
TOTAL PLANT NOT STUDIED				\$ 31,292,151	\$ 178,055
TOTAL PLANT				\$ 4,907,165,802	\$ 222,093,476

**** Please refer to Table 3 for details on the facilities assets**

Toronto Hydro

**TABLE 2 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2024 Opening Net Book Value	2024 Depreciation Expense
1101 Buildings Adm Existing Structures	N/A**	50	R0.5	\$ 3,682,299	\$ 1,038,867
1103 Buildings Adm Substructure	N/A**	75	R3	\$ 5,534,359	\$ 131,919
1105 Buildings Adm Shell Site	N/A**	25	R3	\$ 9,891,101	\$ 603,903
1107 Buildings Adm Interior	N/A**	25	R3	\$ 13,002,604	\$ 1,341,128
1113 Buildings Service Centres Substructure	N/A**	75	R3	\$ 28,452,069	\$ 906,000
1115 Buildings Service Centres Shell Site	N/A**	25	R3	\$ 46,785,608	\$ 2,532,372
1117 Buildings Service Centres Interior	N/A**	25	R3	\$ 64,441,857	\$ 6,381,169
1131 Buildings Substation Structure	N/A**	50	R0.5	\$ 5,776,830	\$ 987,411
1133 Buildings Substation Substructure	N/A**	75	R3	\$ 95,978,751	\$ 1,666,312
1134 Building Substation Substructure - CC	N/A**	75	R3	-\$ 297,989	-\$ 4,813
1135 Buildings Substation Shell Site	N/A**	25	R3	\$ 14,648,888	\$ 973,175
1136 Building Substation Interior-Capital Contribution	N/A**	25	R3	-\$ 466,867	-\$ 30,476
1137 Buildings Substation Interior	N/A**	25	R3	\$ 25,872,656	\$ 2,543,628
1138 Buildings Substation Shell Site - CC	N/A**	25	R3	-\$ 81,541	-\$ 3,029
1150 Buildings Substation ARO	N/A**	0	R3	\$ -	\$ -
1171 Leasehold Improvements - Admin	5	5	R3	\$ 19,344	\$ 7,254
1173 Leasehold Improvements - Service Centres	5	5	R3	\$ 74,101	\$ 38,661
2011 Transformer Station Equip - Power Transformer	32	45	R3	\$ 17,660,763	\$ 482,998
2013 Transformer Station Equip - Steel Struct Bus Work	35	50	R3	\$ 61,591	\$ 2,933
2015 Transformer Station Equip - Disconnect Switch	30	45	R3	\$ 14,717	\$ 920
2017 Transformer Station Equip - Station Service	32	45	R3	\$ 4,253,217	\$ 109,587
2019 Transformer Station Equip - High Voltage Switchgea	50	50	R3	\$ 7,850,523	\$ 179,783
2101 Substation Equipment - Steel Structures Bus Work	35	50	R3	\$ 395,606	\$ 10,517
2103 Substation Equipment - Disconnect Switch	30	40	R3	\$ 1,642,716	\$ 63,499
2104 Substation Equipment - Disconnect Switch CC	30	40	R3	-\$ 28,507	-\$ 755
2105 Substation Equipment - MS Station Service	32	50	R3	\$ 20,289	\$ 756
2107 Substation Equipment - DC Stn Service Batteries	10	10	R3	\$ 3,395,026	\$ 703,509
2109 Substation Equipment - DC Stn Service Chargers	20	20	R3	\$ 4,358,868	\$ 351,029
2111 Substation Equipment - Outdoor Breaker	30	45	R3	\$ 21,675,217	\$ 632,604
2112 Substation Equip Outdr Brk - Capital Contribution	30	45	R3	-\$ 416,438	-\$ 9,301
2113 Substation Equipment - Indoor Breaker	30	45	R3	\$ 11,791,389	\$ 401,134
2114 Substation Equip Indr Brk - Capital Contribution	30	45	R3	-\$ 1,339,318	-\$ 35,362
2115 Substation Equipment - Station Relays	10	15	R3	\$ 11,578,231	\$ 1,036,480
2116 Substation Equip Stn Relays - Capital Contribution	10	15	R3	-\$ 404,955	-\$ 39,375

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**TABLE 2 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2024 Opening Net Book Value	2024 Depreciation Expense
2117 Substation Equipment - Switchgear Air	40	50	R3	\$ 62,736,386	\$ 1,459,205
2119 Substation Equipment - Switchgear GIS	40	50	R3	\$ 37,946,036	\$ 878,406
2123 Substation Equipment - Power Transformers	32	45	R3	\$ 24,775,724	\$ 870,569
2125 Substation Equipment - Grounding System	25	35	R3	\$ 1,081,273	\$ 37,918
2127 Substation Equipment - Grounding Transformer	30	45	R3	\$ 268,459	\$ 8,239
3011 O/H - Poles Concrete Legacy	50	55	R2	\$ 40,738,355	\$ 1,144,148
3012 O/H - Poles Concrete - Capital Contribution Legacy	50	55	R2	-\$ 2,504,380	-\$ 50,493
3013 O/H - Poles Wood	40	45	R0.5	\$ 317,707,475	\$ 9,347,689
3014 O/H - Poles Wood - Capital Contribution	40	45	R0.5	-\$ 20,086,940	-\$ 516,295
3051 O/H - Conductors	50	60	R2	\$ 119,367,703	\$ 2,422,181
3052 O/H - Conductors - Capital Contribution	50	60	R2	-\$ 10,950,823	-\$ 214,305
3053 O/H - Secondary conductors	50	60	R3	\$ 209,350,147	\$ 4,234,473
3054 O/H - Secondary conductors - Capital Contribution	50	60	R3	-\$ 10,519,814	-\$ 197,534
3057 O/H - Switches	30	30	R2	\$ 115,050,985	\$ 5,248,558
3058 O/H - Switches - Capital Contribution	30	30	R2	-\$ 12,590,273	-\$ 466,255
3061 O/H - SMD-20 Switches	45	25	R3	\$ 25,647,345	\$ 1,338,181
3062 O/H - SMD-20 Switches - Capital Contribution	45	25	R3	-\$ 3,043,147	-\$ 150,603
3411 O/H - Poles STL Conventional Legacy	40	55	R3	\$ 34,405,206	\$ 836,396
3427 O/H - Poles Handwell	40	20	R3	\$ 893,185	\$ 66,423
3451 O/H - Street Lighting Cable	40	50	R3	\$ 5,744,111	\$ 126,873
3511 U/G Conduit - Duct Bank	30	50	R3	\$ 910,134,046	\$ 21,951,946
3512 U/G Conduit - Duct Bank - Capital Contribution	30	50	R3	-\$ 116,828,446	-\$ 2,533,647
3513 U/G Conduit - Vault	40	60	R2.5	\$ 114,658,701	\$ 2,646,204
3514 U/G Conduit - Vault - Capital Contribution	40	60	R2.5	-\$ 2,017,617	-\$ 37,081
3515 U/G Conduit - Vault Roof	20	25	R3	\$ 13,845,700	\$ 1,228,842
3516 U/G Conduit - Vault Roof - Capital Contribution	20	25	R3	-\$ 179,639	-\$ 8,424
3517 U/G Conduit - Cable Chamber	50	65	R4	\$ 223,663,231	\$ 4,066,711
3518 U/G Conduit - Cable Chamber - Capital Contribution	50	65	R4	-\$ 55,729,145	-\$ 909,997
3521 U/G Conduit - Cable Chamber Roof	20	25	R3	\$ 7,609,410	\$ 702,578
3522 U/G Conduit - CC Roof - Capital Contribution	20	25	R3	-\$ 251,592	-\$ 11,739
3523 U/G Conduit - Civil Street Lighting	50	50	R3	\$ 2,469,018	\$ 101,048
3524 Cable Chamber Lid - Capital Contribution	25	25	R3	-\$ 16,631	-\$ 700
3525 Cable Chamber Lid	25	25	R3	\$ 7,720,622	\$ 341,694
3609 UG Dist Lines – High Voltage Cable	40	50	R3	\$ 2,383,015	\$ 53,054

Toronto Hydro

**TABLE 2 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2024 Opening Net Book Value	2024 Depreciation Expense
3610 U/G - Dist Lines & Feeders - Capital Contribution	25	50	R3	\$ 12,448	-\$ 9
3611 U/G - Primary Cable Duct (xLPE)	40	50	R3	\$ 712,565,291	\$ 16,978,028
3612 U/G - Primary Cable Duct - Capital Contribution	40	50	R3	-\$ 158,878,232	-\$ 3,624,104
3613 U/G - Primary Cable Buried (xLPE)	20	20	R2	\$ 357,961	\$ 57,943
3614 U/G - Primary Cable Buried - Capital Contribution	20	20	R2	-\$ 29,255	-\$ 2,640
3615 U/G - Primary PILC Cable	60	65	R3	\$ 135,248,384	\$ 2,808,502
3616 U/G - Primary PILC Cable - Capital Contribution	60	65	R3	-\$ 9,472,260	-\$ 215,356
3617 U/G - Secondary Cable in Duct	40	60	R3	\$ 181,031,261	\$ 3,421,609
3618 U/G - Secondary Cable in Duct-Capital Contribution	40	60	R3	-\$ 20,718,218	-\$ 383,584
3619 U/G - Secondary Cable Direct Buried	20	23	R3	\$ 3,627	\$ 377
3620 U/G - Secondary Cable DB - Capital Contribution	20	23	R3	\$ -	\$ -
3621 U/G - Handwells	20	20	R3	\$ 18,637,647	\$ 1,798,052
3622 U/G - Handwells - Capital Contribution	20	20	R3	-\$ 43,742	-\$ 3,744
3623 U/G - ATS Switches	30	40	R3	\$ 45,660	\$ 2,184
3624 U/G - ATS Switches - Capital Contribution	30	40	R3	-\$ 51,134	-\$ 1,340
3625 U/G - Switch Installation	20	40	R3	\$ 92,859,240	\$ 2,697,518
3628 U/G - Padmount Switchgear - Capital Contribution	20	40	R3	-\$ 11,062,294	-\$ 304,141
3630 U/G - Cable ARO	60	60	R3	-\$ 159,574	-\$ 4,111
3711 Network Automation Vaultt Communication	10	10	R3	\$ 22,203,228	\$ 3,078,598
3712 Network Automation Vault Communication-CC	10	10	R3	-\$ 76,583	-\$ 10,560
4011 Dist Transf - General Overhead	30	35	R3	\$ 170,386,532	\$ 6,229,564
4012 Dist Transf - Overhead - Capital Contribution	30	35	R3	-\$ 12,362,508	-\$ 408,250
4013 Dist Transf - Underground	30	30	R2	\$ 330,604,365	\$ 16,466,334
4014 Dist Transf - Underground - Capital Contribution	30	30	R2	-\$ 29,549,546	-\$ 1,189,006
4015 Dist Transf - U/G Network w/ Protector	20	35	R3	\$ 135,106,300	\$ 4,673,873
4016 Dist Transf - U/G NW w/ Protector-Capital Contrib	20	35	R3	-\$ 3,695,040	-\$ 120,280
4111 O/H Services	50	60	R2	\$ 61,090,830	\$ 1,313,409
4112 O/H Services - Capital Contribution	50	60	R2	-\$ 864,561	-\$ 17,776
4113 U/G Services in Duct	40	50	R3	\$ 47,240,909	\$ 1,149,471
4114 U/G Services in Duct - Capital Contribution	40	50	R3	-\$ 4,996,232	-\$ 112,552
4115 U/G Services Secondary Cable Direct Buried	20	23	R3	-\$ 11,771	-\$ 1,085
4510 Dist Meters - Capital Contribution	25	15	R3	-\$ 38,668	-\$ 6,545
4511 Dist Meters - Demand/Energy Meters	25	15	R3	\$ 23,549,607	\$ 3,002,612
4512 Demand Energy Meter - Capital Contribution	25	15	R3	-\$ 5,294,015	-\$ 564,359

Toronto Hydro

**TABLE 2 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2024 Opening Net Book Value	2024 Depreciation Expense
4513 Dist Meters - Meters Transformers	40	40	R3	\$ 17,551,371	\$ 602,541
4514 Meter Transformers - Capital Contribution	40	40	R3	-\$ 5,139,277	-\$ 157,473
4515 Dist Meters - Suite Meters	15	15	R3	\$ 30,070,074	\$ 3,813,996
4611 Dist Meters - Smart Meters Residential	15	15	R3	\$ 24,557,931	\$ 3,685,450
4613 Dist Meters - Smart Meters GS	15	15	R3	\$ 33,360,973	\$ 4,383,871
4711 Grid Point Meters	25	25	R3	\$ 29,415,464	\$ 1,667,067
5011 Street Lighting Luminaires	0	0	R3	\$ -	\$ -
5013 Street Lighting Luminaire Brackets	0	0	R3	\$ -	\$ -
5031 Street Lighting Distribution Assembly	20	25	R3	\$ 69,729	\$ 3,374
6011 General Office Furnishings & Equipment	N/A**	15	SQ	\$ 5,129,354	\$ 597,150
6111 Computer Hardware - Client/Network	4	4	SQ	\$ 11,261,720	\$ 6,148,212
6113 Computer Hardware - Printers/storage	5	5	SQ	\$ 3,193,641	\$ 1,461,537
6115 Computer Hardware - P series Servers	6	6	SQ	\$ 1,614,200	\$ 901,517
6117 Computer Hardware - Data centre Cabling/racks	10	10	SQ	\$ 445,770	\$ 167,164
6131 Computer Hardware - Scada	5	5	SQ	\$ 3,477,222	\$ 1,425,526
6231 Rolling Stock - Vehicles < 3 Tons	5	9	L3	\$ 4,840,086	\$ 691,279
6251 Rolling Stock - Vehicles > 3 Tons	8	12	L3	\$ 9,826,935	\$ 1,220,365
6271 Rolling Stock - Service Equipment	8	20	R4	\$ 957,293	\$ 56,450
6281 Rolling Stock - Electric Vehicles	4	7	L1	\$ 125,573	\$ 29,547
6282 Rolling Stock - Electric Vehicle Charge Stations	10	10	R3	\$ 48,643	\$ 9,894
6290 Energy Storage Inverter - Capital Contribution	20	20	R3	-\$ 471,544	-\$ 27,875
6291 Energy Storage Inverter	20	20	R3	\$ 2,722,533	\$ 164,014
6292 Energy Storage System Battery	10	10	R3	\$ 864,358	\$ 124,967
6293 Energy Storage System Battery-Contributed Capital	10	10	R3	-\$ 192,764	-\$ 27,869
6311 Stores Equipment	10	15	SQ	\$ 8,646	\$ 621
6331 Tools and Equipment - Tools and Misc Equipment	10	10	SQ	\$ 12,873,817	\$ 2,475,304
6333 Tool Crib	10	10	SQ	\$ -	\$ -
6335 Linehose	6	6	SQ	\$ -	\$ -
6351 Testing Equipment - Instruments	10	15	SQ	\$ -	\$ -
6371 Communication Equipment - Wireless	5	5	SQ	\$ 109,113	\$ 109,113
6391 Communication Equipment - Network Mgmt Equipmnt	5	5	SQ	\$ -	\$ -
6411 Communication Equipment - Telephony	5	5	SQ	\$ 6,825,541	\$ 1,532,059
6431 Miscellaneous Equipment	10	10	SQ	\$ 847	\$ 391
6451 System Supervisory Equipment	15	20	R3	\$ 1,812,763	\$ 167,672

Toronto Hydro

**TABLE 2 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Asset Class Description	Current Accounting Life	Recommended Life*	Recommended Curve	2024 Opening Net Book Value	2024 Depreciation Expense
6452 System Supervisory Eq - Capital Contribution	15	20	R3	-\$ 12,228,513	-\$ 690,906
6453 System Supervisory - Scadamate Switches	30	30	R3	\$ 1,528,851	\$ 113,620
6455 System Supervisory - Scada RTU	15	20	R3	\$ 47,661,004	\$ 3,092,349
6511 Fibre Optic Network - Control Cable	10	20	R3	\$ 9,960,647	\$ 585,279
6512 Fibre Optic Network - Capital Contribution	20	20	R3	-\$ 94,814	-\$ 5,012
6531 Fibre Optic Network - Customer Term Equipment	10	10	R3	\$ 8,433,871	\$ 619,139
6533 Fibre Optic Network - SubstationTerm Equipment	10	10	R3	\$ 58,673	\$ 10,752
6534 Fibre Optic Network-Substation Term Equipment - CC	10	10	R3	-\$ 36,056	-\$ 5,213
7111 Load Management Controls - Customer Location	10	10	R3	\$ -	\$ -
8011 Software Enterprise	10	10	SQ	\$ 65,820,749	\$ 21,272,967
8031 Software Client	4	4	SQ	\$ 826,765	\$ 476,399
8051 Software General	5	5	SQ	\$ 9,552,660	\$ 3,367,231
8071 Contribution to HONI Station	25	25	0	\$ 214,174,035	\$ 11,081,625
8511 Capital Allocations	25	25	0	\$ -	\$ -
TOTAL PLANT STUDIED				\$ 4,653,958,230	\$ 204,871,428
* Applied to grouped assets only					
PLANT NOT STUDIED					
1011 Land - Administration	N/A	N/A	N/A	\$ 8,008,235	\$ -
1013 Land - Service Centres	N/A	N/A	N/A	\$ 9,347,822	\$ -
1031 Land - Substations	N/A	N/A	N/A	\$ 1,441,142	\$ -
1051 Land - Transformer Stations	N/A	N/A	N/A	\$ 5,557,807	\$ -
1071 Land - Finance Lease	99	99	0	\$ 6,296,861	\$ 89,423
1511 ROU - Property Leases	5	5	0	\$ 151,311	\$ 38,633
4031 Dist Transf - ARO	25	25	0	\$ 310,918	\$ 49,991
TOTAL PLANT NOT STUDIED				\$ 31,114,097	\$ 178,046
TOTAL PLANT				\$ 4,685,072,326	\$ 205,049,475
** Please refer to Table 3 for details on the facilities assets					

Toronto Hydro

**TABLE 3 - ORIGINAL COST, AND ANNUAL DEPRECIATION ACCRUALS
RELATED TO FACILITIES IN UTILITY PLANT AS OF DECEMBER 31, 2023 & DECEMBER 31, 2024
DEPRECIATION RELATED TO RECOVERY OF ORIGINAL COST OF INVESTMENT**

Description	Recommended Life	Recommended Curve	2023 Opening Net Book Value	2023 Depreciation Expense	2024 Opening Net Book Value	2024 Depreciation Expense
5 - Infrastructure Technology	5	R0.5	\$ 327,555	\$ 275,724	\$ 51,831	\$ 25,726
10 - Interior Finishings	10	R3	\$ 4,946,574	\$ 1,247,784	\$ 3,698,790	\$ 1,057,029
10 - Building Other (short lived)	10	R3	\$ 12,200,209	\$ 3,173,906	\$ 9,026,304	\$ 1,757,770
15 - Landscape/parking/roadways	15	R3	\$ 22,436,583	\$ 2,363,171	\$ 20,073,412	\$ 2,363,171
15 - General Office Furnishings & Equipment	15	R3	\$ 5,643,136	\$ 571,105	\$ 5,072,030	\$ 571,105
20 - Auxiliary (HVAC, roof, wiring, fire, security)	20	R0.5	\$ 104,405,327	\$ 7,455,021	\$ 96,950,306	\$ 7,455,021
30 - Building Other (medium lived)	30	R3	\$ 69,403,508	\$ 6,322,102	\$ 63,081,406	\$ 4,334,055
65 - Building Other (long lived)	65	R3	\$ 122,496,739	\$ 2,100,838	\$ 120,395,901	\$ 2,100,838
TOTAL FACILITIES PLANT STUDIED			\$ 341,859,631	\$ 23,509,652	\$ 318,349,979	\$ 19,664,716



SECTION 5

5 RETIREMENT RATE ANALYSIS

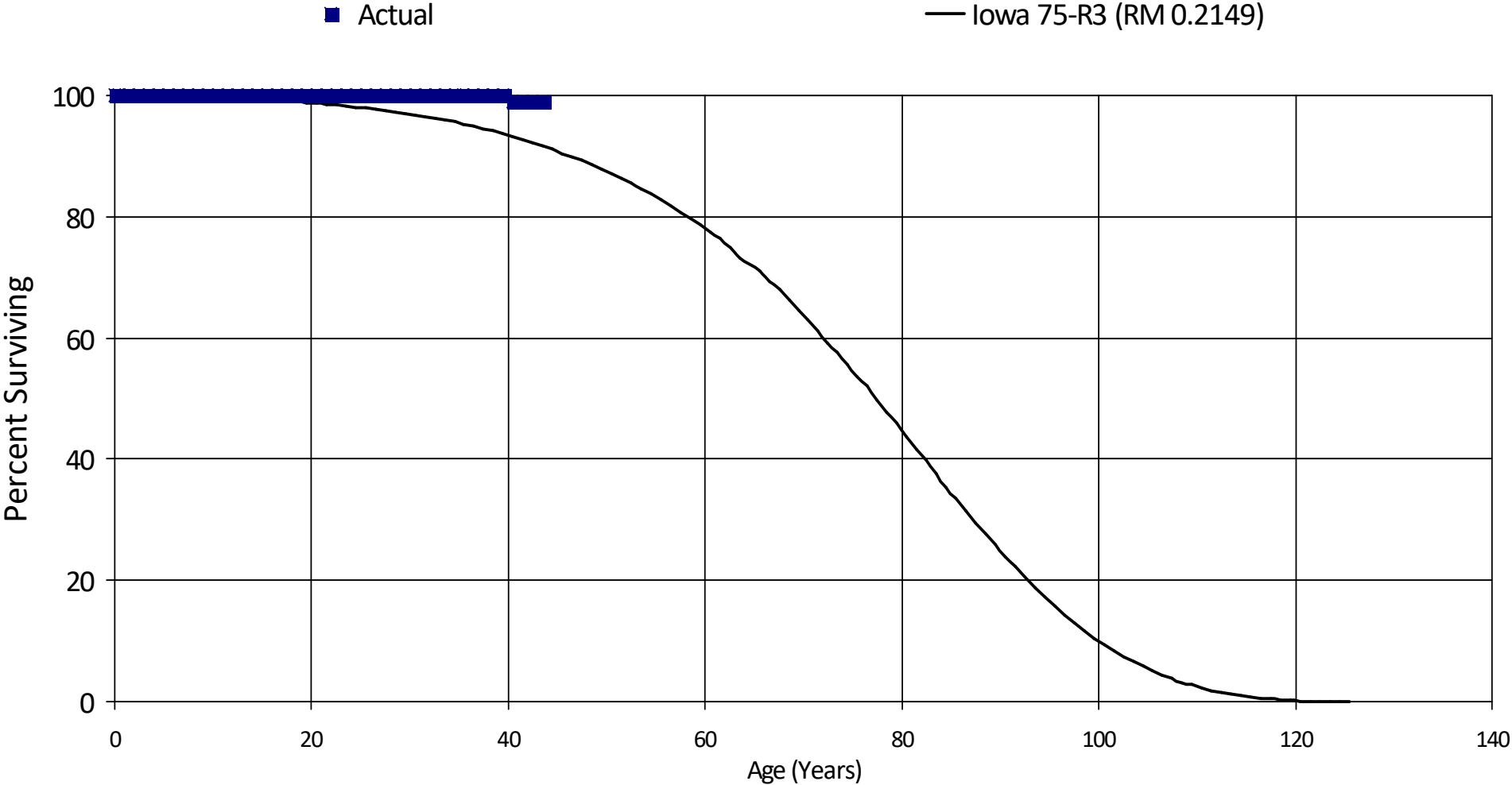
PLEASE SEE SECTION 3 FOR A DETAILED DISCUSSION OF THE SELECTION OF AVERAGE SERVICE LIFE ESTIMATES AND IOWA CURVE DISPERSION

Toronto Hydro

Account 1011 - Land - Administration

Placement Band - 1958 - 2022 Experience Band - 2019 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1011 - Land - Administration

Placement Band - 1958 - 2022 Experience Band - 2019 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	8,013,435	0	0.00000	1.00000	100.00
0.5	8,013,435	0	0.00000	1.00000	100.00
1.5	8,013,435	0	0.00000	1.00000	100.00
2.5	8,013,435	0	0.00000	1.00000	100.00
3.5	8,013,435	0	0.00000	1.00000	100.00
4.5	8,013,435	0	0.00000	1.00000	100.00
5.5	8,013,435	0	0.00000	1.00000	100.00
6.5	8,013,435	0	0.00000	1.00000	100.00
7.5	8,013,435	0	0.00000	1.00000	100.00
8.5	8,013,435	0	0.00000	1.00000	100.00
9.5	8,013,435	0	0.00000	1.00000	100.00
10.5	8,013,435	0	0.00000	1.00000	100.00
11.5	752,223	0	0.00000	1.00000	100.00
12.5	752,223	0	0.00000	1.00000	100.00
13.5	752,223	0	0.00000	1.00000	100.00
14.5	752,223	0	0.00000	1.00000	100.00
15.5	752,223	0	0.00000	1.00000	100.00
16.5	752,223	0	0.00000	1.00000	100.00
17.5	752,223	0	0.00000	1.00000	100.00
18.5	752,223	0	0.00000	1.00000	100.00
19.5	752,223	0	0.00000	1.00000	100.00
20.5	752,223	0	0.00000	1.00000	100.00
21.5	752,223	0	0.00000	1.00000	100.00
22.5	752,223	0	0.00000	1.00000	100.00
23.5	752,223	0	0.00000	1.00000	100.00
24.5	752,223	0	0.00000	1.00000	100.00
25.5	646,398	0	0.00000	1.00000	100.00
26.5	646,398	0	0.00000	1.00000	100.00

Toronto Hydro

Account 1011 - Land - Administration

Placement Band - 1958 - 2022 Experience Band - 2019 - 2022

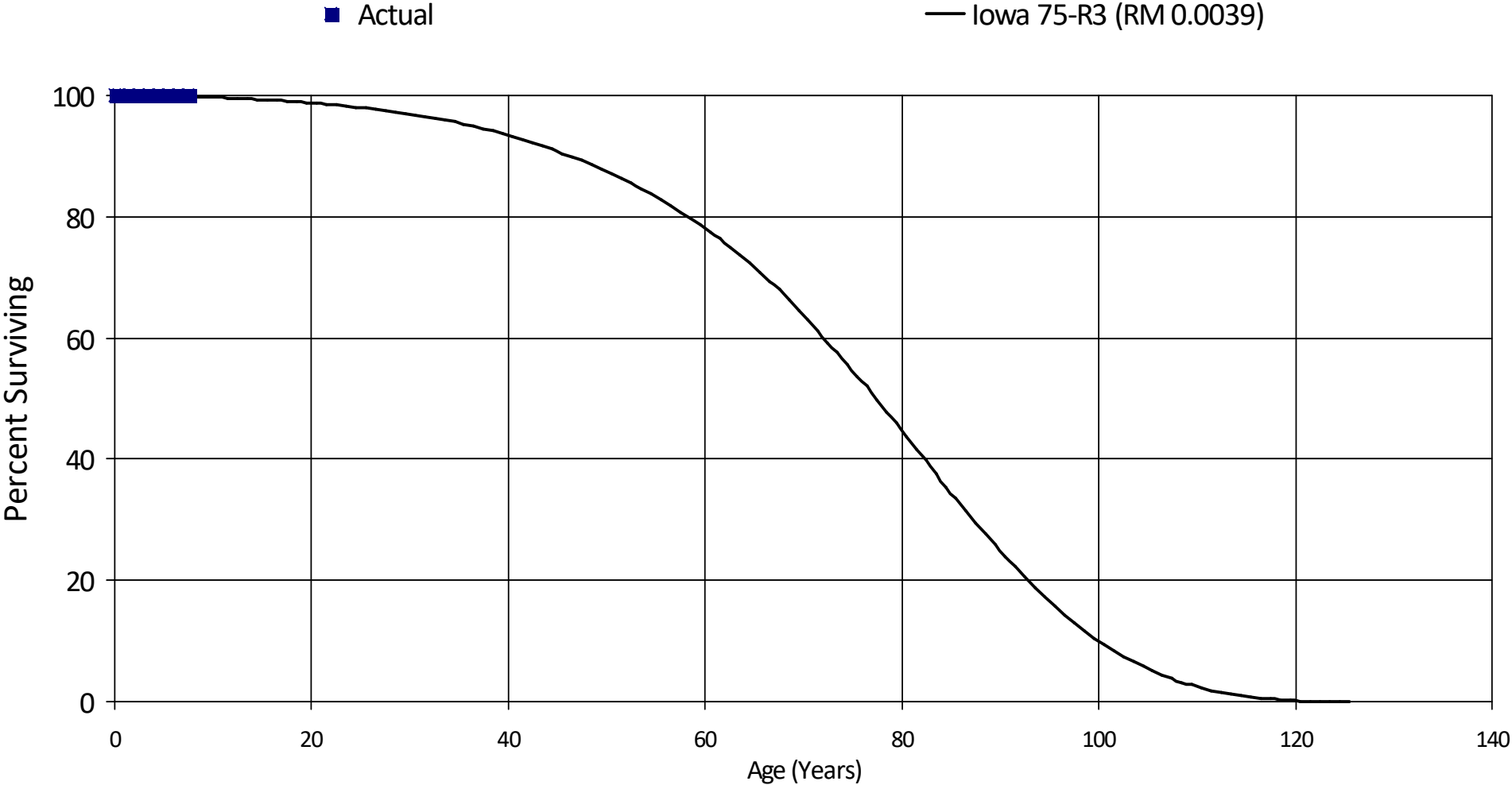
27.5	646,398	0	0.00000	1.00000	100.00
28.5	646,398	0	0.00000	1.00000	100.00
29.5	646,398	0	0.00000	1.00000	100.00
30.5	639,463	0	0.00000	1.00000	100.00
31.5	639,463	0	0.00000	1.00000	100.00
32.5	563,009	0	0.00000	1.00000	100.00
33.5	563,009	0	0.00000	1.00000	100.00
34.5	563,009	0	0.00000	1.00000	100.00
35.5	563,009	0	0.00000	1.00000	100.00
36.5	563,009	0	0.00000	1.00000	100.00
37.5	563,009	0	0.00000	1.00000	100.00
38.5	563,009	0	0.00000	1.00000	100.00
39.5	563,009	5,200	0.00924	0.99076	100.00
40.5	557,809	0	0.00000	1.00000	99.08
41.5	557,809	0	0.00000	1.00000	99.08
42.5	285,769	0	0.00000	1.00000	99.08
43.5	0	0	0.00000	0.00000	99.08
Totals:		5,200			

Toronto Hydro

Account 1013 - Land - Service Centres

Placement Band - 2014 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1013 - Land - Service Centres

Placement Band - 2014 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

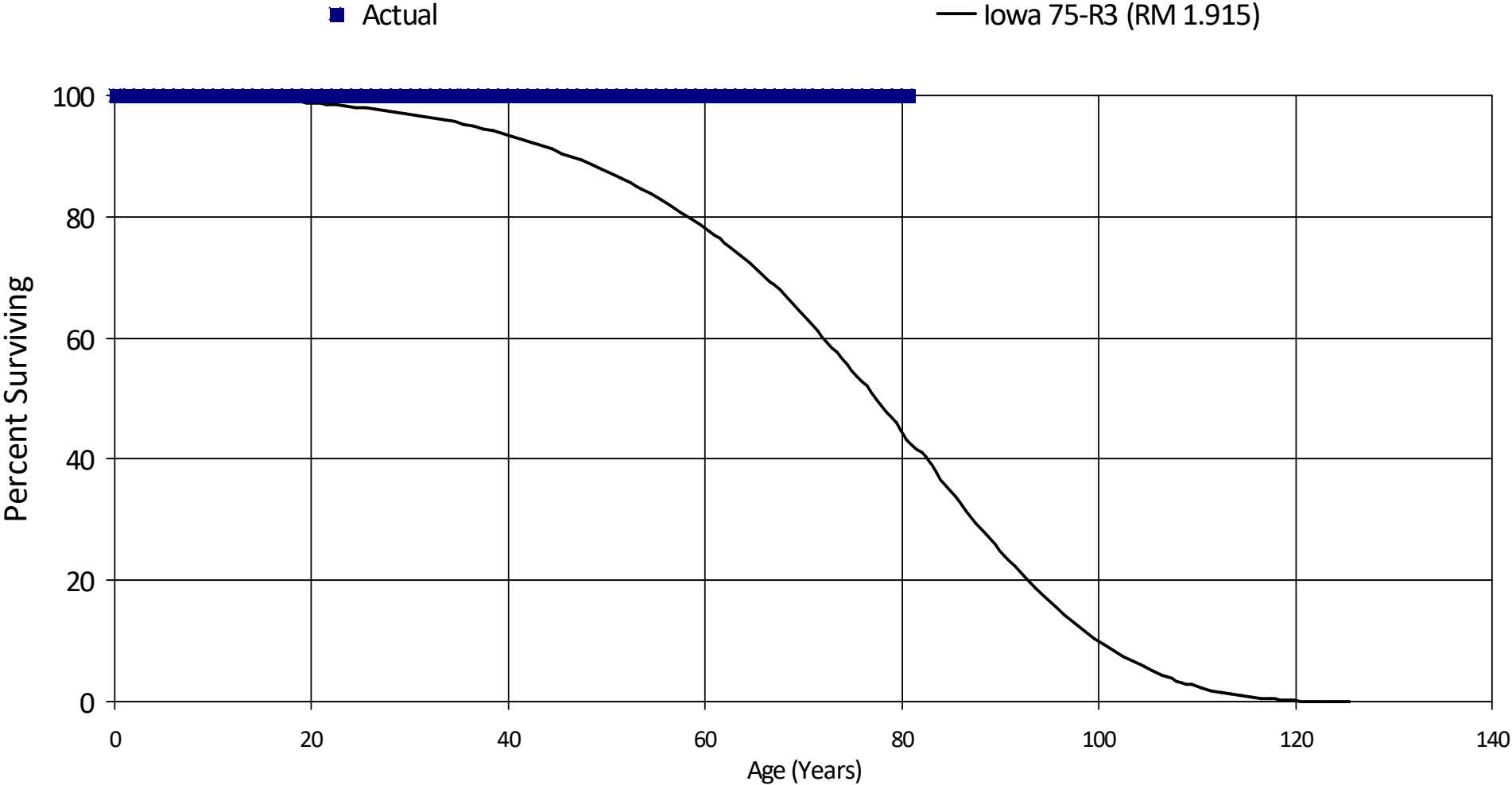
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	9,347,822	0	0.00000	1.00000	100.00
0.5	9,347,822	0	0.00000	1.00000	100.00
1.5	8,814,391	0	0.00000	1.00000	100.00
2.5	8,814,391	0	0.00000	1.00000	100.00
3.5	8,814,391	0	0.00000	1.00000	100.00
4.5	8,814,391	0	0.00000	1.00000	100.00
5.5	8,814,391	0	0.00000	1.00000	100.00
6.5	8,814,391	0	0.00000	1.00000	100.00
7.5	8,814,391	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 1031 - Land - Substations

Placement Band - 1941 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1031 - Land - Substations

Placement Band - 1941 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,441,142	0	0.00000	1.00000	100.00
0.5	1,441,142	0	0.00000	1.00000	100.00
1.5	1,441,142	0	0.00000	1.00000	100.00
2.5	1,441,142	0	0.00000	1.00000	100.00
3.5	1,441,142	0	0.00000	1.00000	100.00
4.5	1,441,142	0	0.00000	1.00000	100.00
5.5	1,441,142	0	0.00000	1.00000	100.00
6.5	1,441,142	0	0.00000	1.00000	100.00
7.5	1,441,142	0	0.00000	1.00000	100.00
8.5	1,441,142	0	0.00000	1.00000	100.00
9.5	1,441,142	0	0.00000	1.00000	100.00
10.5	1,441,142	0	0.00000	1.00000	100.00
11.5	1,441,142	0	0.00000	1.00000	100.00
12.5	1,441,142	0	0.00000	1.00000	100.00
13.5	1,441,142	0	0.00000	1.00000	100.00
14.5	1,441,142	0	0.00000	1.00000	100.00
15.5	1,441,142	0	0.00000	1.00000	100.00
16.5	1,441,142	0	0.00000	1.00000	100.00
17.5	1,441,142	0	0.00000	1.00000	100.00
18.5	1,441,142	0	0.00000	1.00000	100.00
19.5	1,441,142	0	0.00000	1.00000	100.00
20.5	1,441,142	0	0.00000	1.00000	100.00
21.5	1,441,142	0	0.00000	1.00000	100.00
22.5	1,441,142	0	0.00000	1.00000	100.00
23.5	1,441,142	0	0.00000	1.00000	100.00
24.5	1,441,142	0	0.00000	1.00000	100.00
25.5	1,441,142	0	0.00000	1.00000	100.00
26.5	1,441,142	0	0.00000	1.00000	100.00

Toronto Hydro

Account 1031 - Land - Substations

Placement Band - 1941 - 2022 Experience Band - 2022 - 2022

27.5	1,441,142	0	0.00000	1.00000	100.00
28.5	1,441,142	0	0.00000	1.00000	100.00
29.5	1,441,142	0	0.00000	1.00000	100.00
30.5	1,441,142	0	0.00000	1.00000	100.00
31.5	1,441,142	0	0.00000	1.00000	100.00
32.5	1,441,142	0	0.00000	1.00000	100.00
33.5	1,441,142	0	0.00000	1.00000	100.00
34.5	1,441,142	0	0.00000	1.00000	100.00
35.5	1,441,142	0	0.00000	1.00000	100.00
36.5	1,441,142	0	0.00000	1.00000	100.00
37.5	1,441,142	0	0.00000	1.00000	100.00
38.5	1,441,142	0	0.00000	1.00000	100.00
39.5	1,441,142	0	0.00000	1.00000	100.00
40.5	1,441,142	0	0.00000	1.00000	100.00
41.5	1,441,142	0	0.00000	1.00000	100.00
42.5	1,107,258	0	0.00000	1.00000	100.00
43.5	565,852	0	0.00000	1.00000	100.00
44.5	565,852	0	0.00000	1.00000	100.00
45.5	565,852	0	0.00000	1.00000	100.00
46.5	565,852	0	0.00000	1.00000	100.00
47.5	502,379	0	0.00000	1.00000	100.00
48.5	502,379	0	0.00000	1.00000	100.00
49.5	502,379	0	0.00000	1.00000	100.00
50.5	488,348	0	0.00000	1.00000	100.00
51.5	488,348	0	0.00000	1.00000	100.00
52.5	486,111	0	0.00000	1.00000	100.00
53.5	459,258	0	0.00000	1.00000	100.00
54.5	432,780	0	0.00000	1.00000	100.00
55.5	398,451	0	0.00000	1.00000	100.00
56.5	388,724	0	0.00000	1.00000	100.00
57.5	367,951	0	0.00000	1.00000	100.00

Toronto Hydro

Account 1031 - Land - Substations

Placement Band - 1941 - 2022 Experience Band - 2022 - 2022

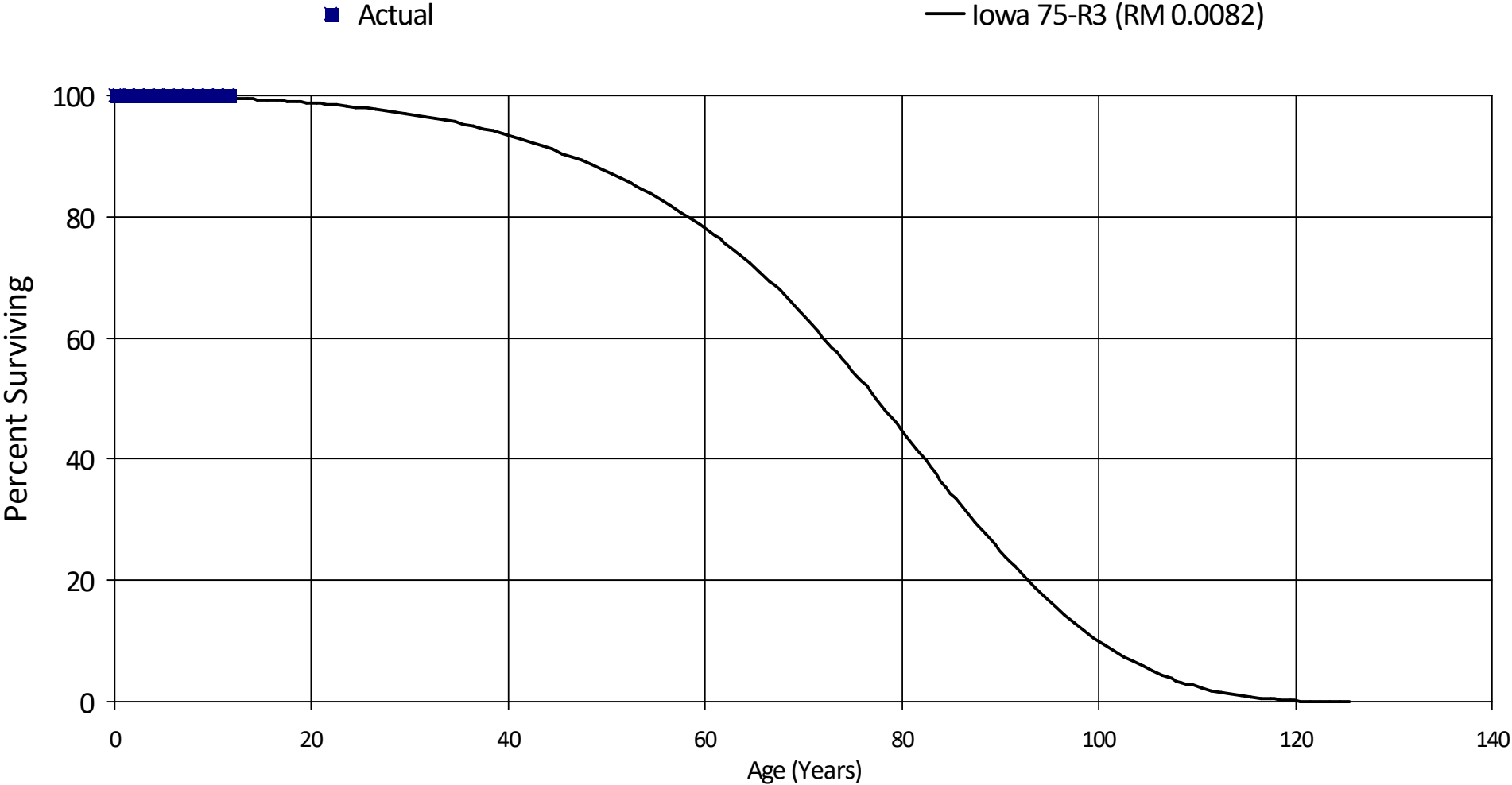
58.5	347,639	0	0.00000	1.00000	100.00
59.5	97,980	0	0.00000	1.00000	100.00
60.5	93,168	0	0.00000	1.00000	100.00
61.5	69,992	0	0.00000	1.00000	100.00
62.5	66,310	0	0.00000	1.00000	100.00
63.5	66,310	0	0.00000	1.00000	100.00
64.5	52,606	0	0.00000	1.00000	100.00
65.5	43,597	0	0.00000	1.00000	100.00
66.5	30,561	0	0.00000	1.00000	100.00
67.5	23,341	0	0.00000	1.00000	100.00
68.5	18,061	0	0.00000	1.00000	100.00
69.5	9,343	0	0.00000	1.00000	100.00
70.5	5,050	0	0.00000	1.00000	100.00
71.5	4,100	0	0.00000	1.00000	100.00
72.5	1,004	0	0.00000	1.00000	100.00
73.5	1,004	0	0.00000	1.00000	100.00
74.5	1,004	0	0.00000	1.00000	100.00
75.5	1,004	0	0.00000	1.00000	100.00
76.5	1,004	0	0.00000	1.00000	100.00
77.5	1,004	0	0.00000	1.00000	100.00
78.5	1,004	0	0.00000	1.00000	100.00
79.5	1,004	0	0.00000	1.00000	100.00
80.5	1,004	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 1051 - Land - Transformer Stations

Placement Band - 2010 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1051 - Land - Transformer Stations

Placement Band - 2010 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

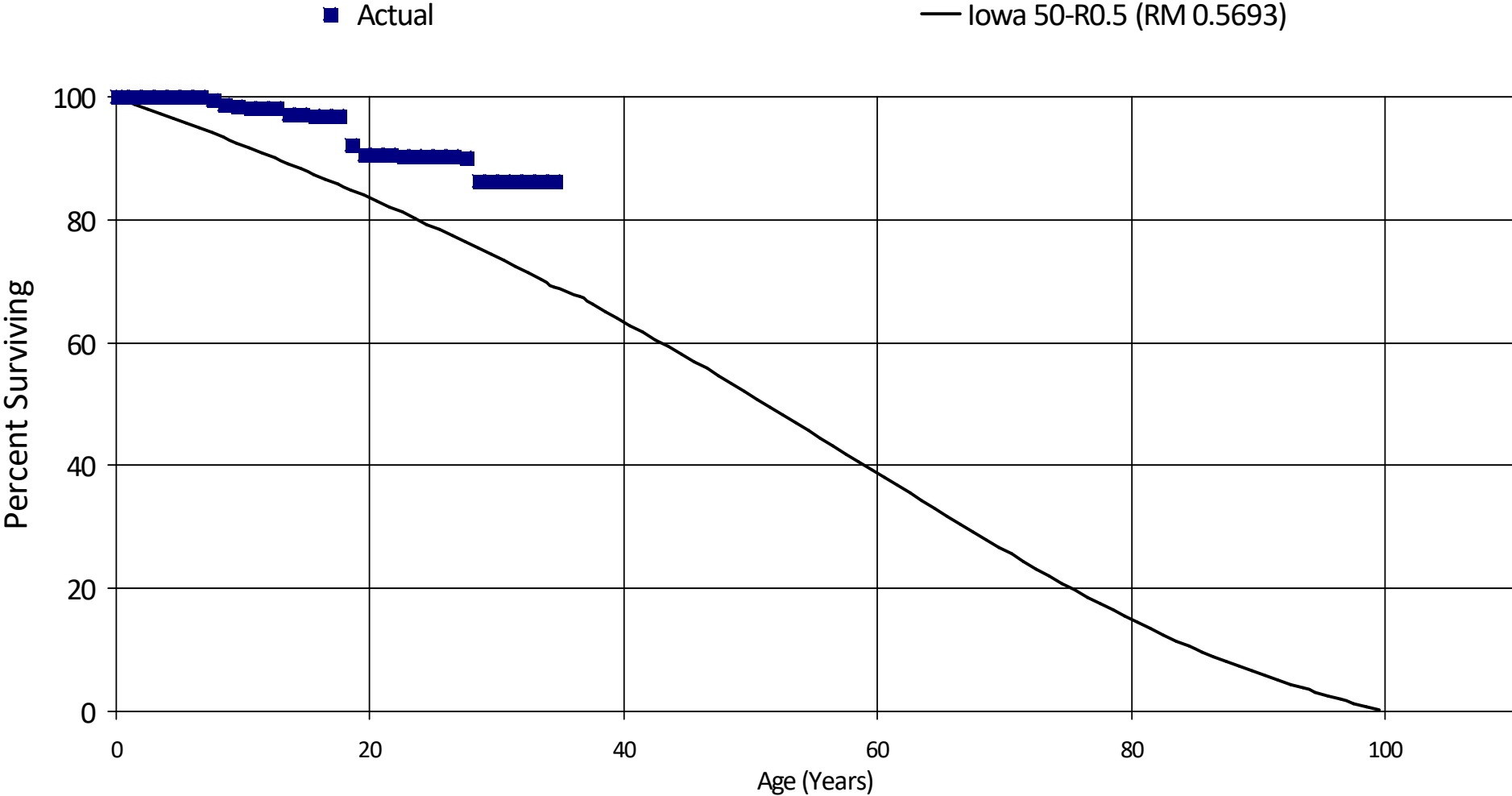
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	5,557,807	0	0.00000	1.00000	100.00
0.5	5,557,807	0	0.00000	1.00000	100.00
1.5	5,557,807	0	0.00000	1.00000	100.00
2.5	5,557,807	0	0.00000	1.00000	100.00
3.5	5,557,807	0	0.00000	1.00000	100.00
4.5	5,557,807	0	0.00000	1.00000	100.00
5.5	5,557,807	0	0.00000	1.00000	100.00
6.5	5,557,807	0	0.00000	1.00000	100.00
7.5	5,557,807	0	0.00000	1.00000	100.00
8.5	5,557,807	0	0.00000	1.00000	100.00
9.5	5,557,807	0	0.00000	1.00000	100.00
10.5	5,557,807	0	0.00000	1.00000	100.00
11.5	5,557,807	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 1101 - Buildings Adm Existing Structures

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1101 - Buildings Adm Existing Structures

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	35,148,519	0	0.00000	1.00000	100.00
0.5	35,148,519	0	0.00000	1.00000	100.00
1.5	35,148,519	0	0.00000	1.00000	100.00
2.5	35,148,519	0	0.00000	1.00000	100.00
3.5	35,148,519	0	0.00000	1.00000	100.00
4.5	35,148,519	0	0.00000	1.00000	100.00
5.5	35,148,519	0	0.00000	1.00000	100.00
6.5	35,148,519	180,275	0.00513	0.99487	100.00
7.5	34,968,244	303,381	0.00868	0.99132	99.49
8.5	34,664,863	90,731	0.00262	0.99738	98.63
9.5	34,574,132	19,282	0.00056	0.99944	98.37
10.5	34,554,849	1,945	0.00006	0.99994	98.31
11.5	34,552,904	0	0.00000	1.00000	98.30
12.5	34,552,093	404,182	0.01170	0.98830	98.30
13.5	33,594,096	16,712	0.00050	0.99950	97.15
14.5	32,923,737	25,669	0.00078	0.99922	97.10
15.5	32,647,225	0	0.00000	1.00000	97.02
16.5	32,423,798	39,385	0.00121	0.99879	97.02
17.5	32,042,613	1,573,561	0.04911	0.95089	96.90
18.5	30,136,148	503,850	0.01672	0.98328	92.14
19.5	29,632,298	2,814	0.00009	0.99991	90.60
20.5	29,617,811	23,687	0.00080	0.99920	90.59
21.5	29,263,244	15,762	0.00054	0.99946	90.52
22.5	28,213,574	6,266	0.00022	0.99978	90.47
23.5	27,832,454	55,131	0.00198	0.99802	90.45
24.5	26,427,050	9	0.00000	1.00000	90.27
25.5	24,924,459	1,797	0.00007	0.99993	90.27
26.5	3,751,713	6,711	0.00179	0.99821	90.26

Toronto Hydro

Account 1101 - Buildings Adm Existing Structures

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

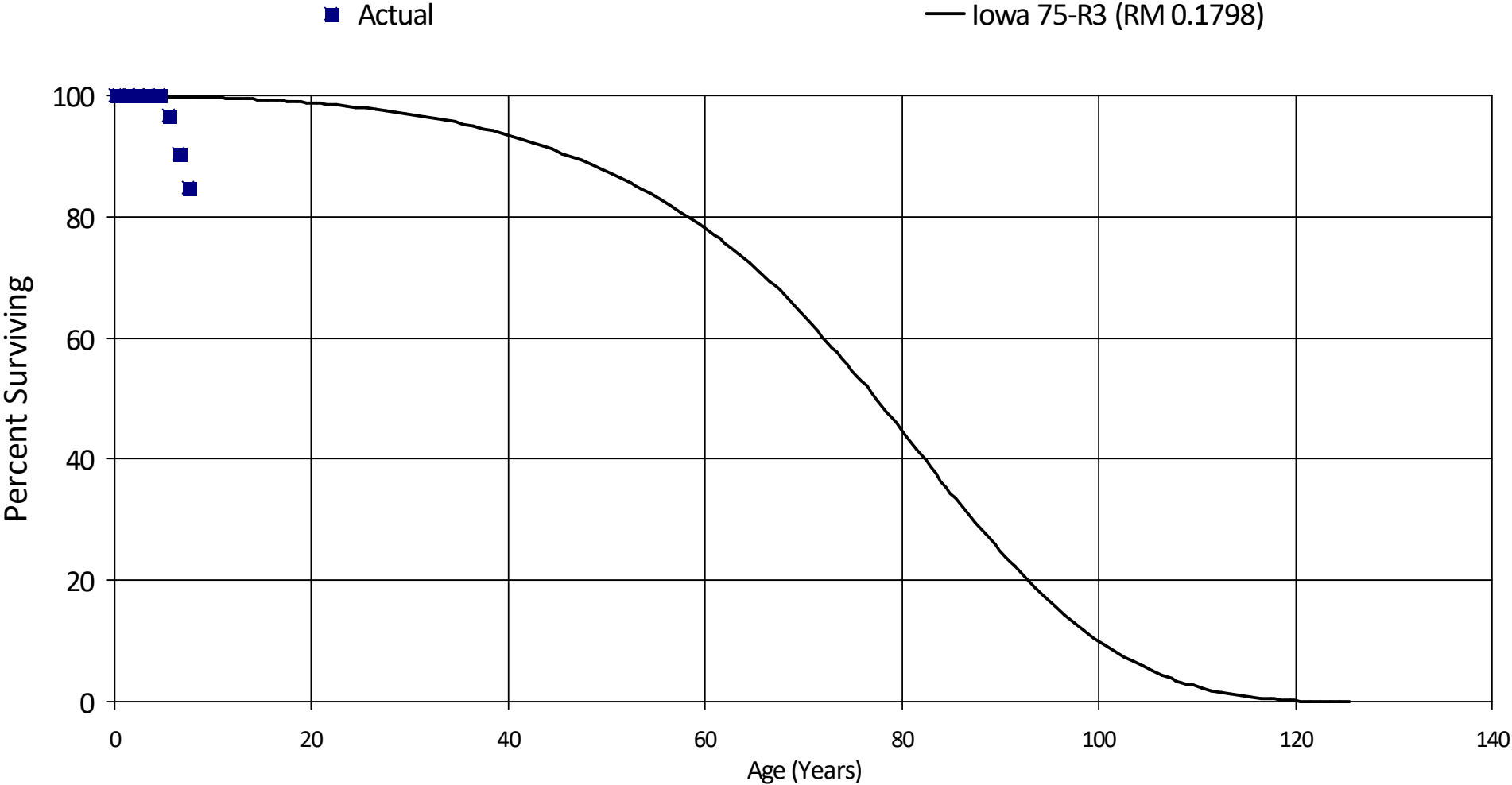
27.5	2,323,639	95,347	0.04103	0.95897	90.10
28.5	1,414,018	192	0.00014	0.99986	86.40
29.5	685,093	14	0.00002	0.99998	86.39
30.5	597,600	70	0.00012	0.99988	86.39
31.5	248,646	0	0.00000	1.00000	86.38
32.5	195,193	0	0.00000	1.00000	86.38
33.5	181,160	0	0.00000	1.00000	86.38
34.5	6,558	0	0.00000	1.00000	86.38
Totals:		3,366,773			

Toronto Hydro

Account 1103 - Buildings Adm Substructure

Placement Band - 2010 - 2022 Experience Band - 2017 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1103 - Buildings Adm Substructure

Placement Band - 2010 - 2022 Experience Band - 2017 - 2022

RETIREMENT RATE ANALYSIS

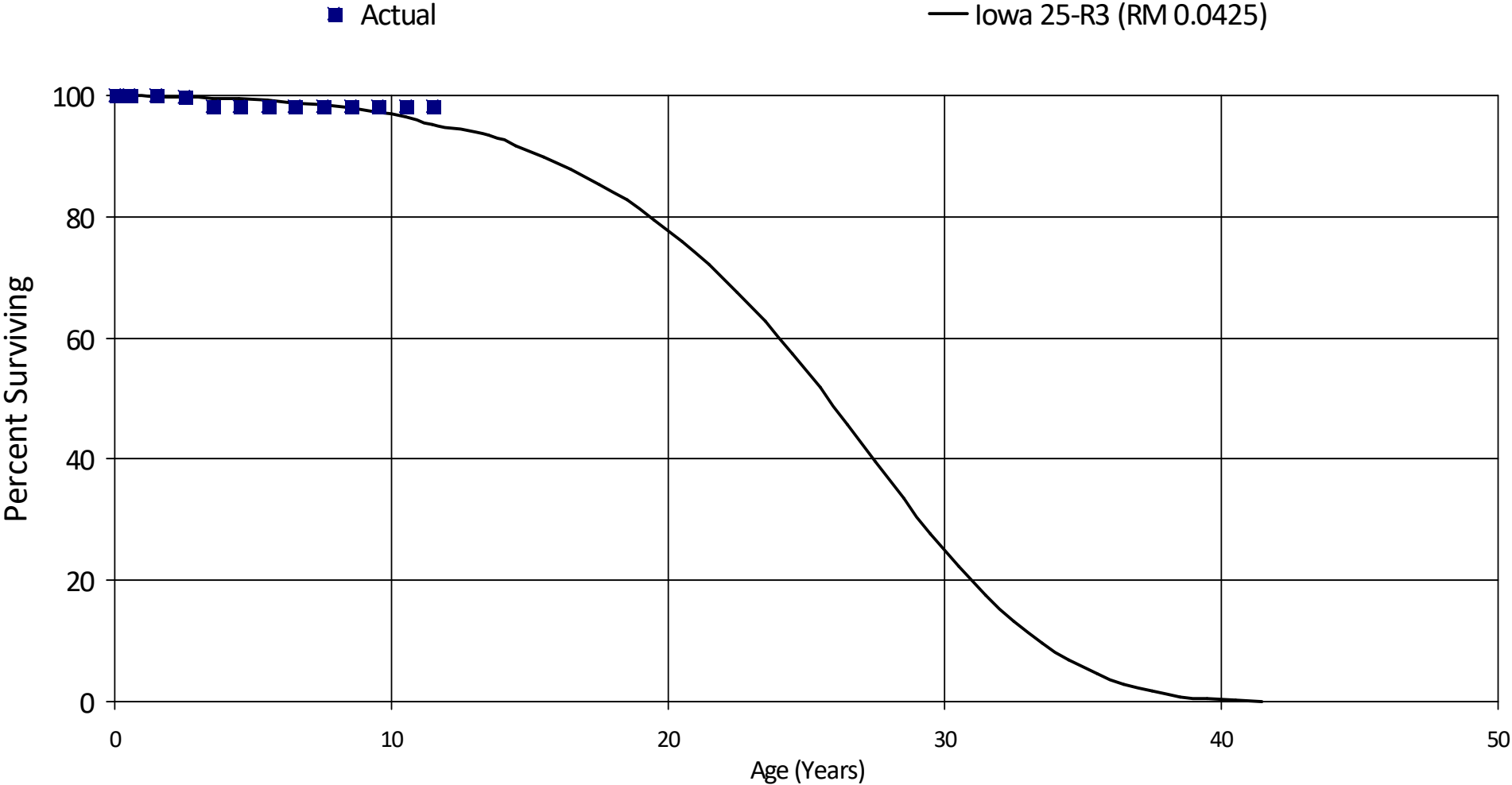
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	8,754,399	0	0.00000	1.00000	100.00
0.5	8,754,399	0	0.00000	1.00000	100.00
1.5	5,241,163	0	0.00000	1.00000	100.00
2.5	4,637,267	0	0.00000	1.00000	100.00
3.5	4,637,267	0	0.00000	1.00000	100.00
4.5	4,565,344	152,260	0.03335	0.96665	100.00
5.5	4,413,084	287,953	0.06525	0.93475	96.66
6.5	4,125,131	252,298	0.06116	0.93884	90.35
7.5	2,148,689	2,148,689	1.00000		84.82
Totals:		2,841,200			

Toronto Hydro

Account 1105 - Buildings Adm Shell Site

Placement Band - 2010 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1105 - Buildings Adm Shell Site

Placement Band - 2010 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

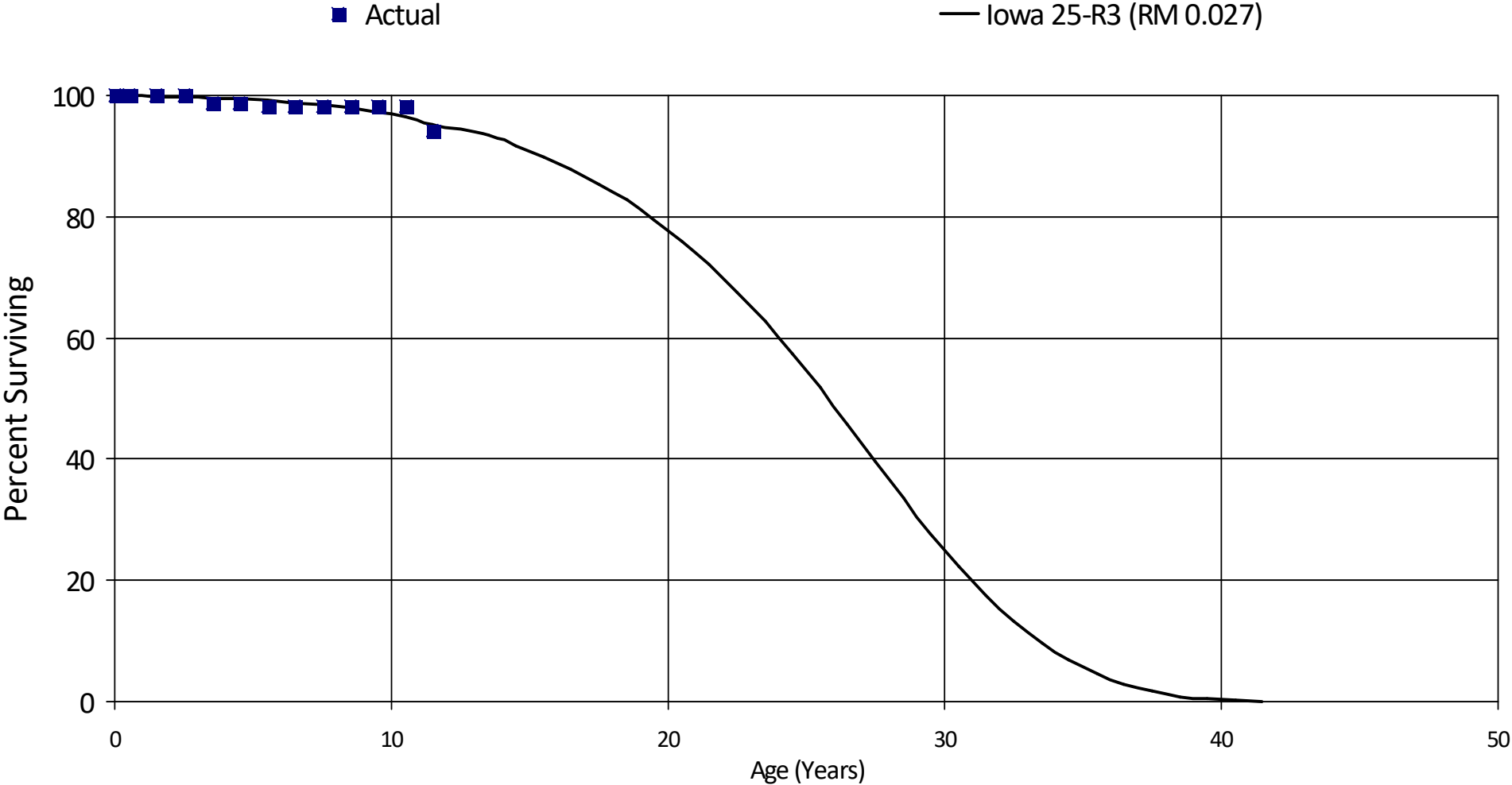
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	13,577,212	0	0.00000	1.00000	100.00
0.5	13,182,906	0	0.00000	1.00000	100.00
1.5	11,005,347	24,861	0.00226	0.99774	100.00
2.5	10,193,437	149,548	0.01467	0.98533	99.77
3.5	10,023,846	0	0.00000	1.00000	98.31
4.5	9,958,305	14,356	0.00144	0.99856	98.31
5.5	9,934,492	0	0.00000	1.00000	98.17
6.5	7,111,934	0	0.00000	1.00000	98.17
7.5	5,598,587	-20	0.00000	1.00000	98.17
8.5	4,607,500	0	0.00000	1.00000	98.17
9.5	1,128,307	0	0.00000	1.00000	98.17
10.5	961,911	0	0.00000	1.00000	98.17
11.5	942,992	0	0.00000	1.00000	98.17
Totals:		188,745			

Toronto Hydro

Account 1107 - Buildings Adm Interior

Placement Band - 2010 - 2022 Experience Band - 2017 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1107 - Buildings Adm Interior

Placement Band - 2010 - 2022 Experience Band - 2017 - 2022

RETIREMENT RATE ANALYSIS

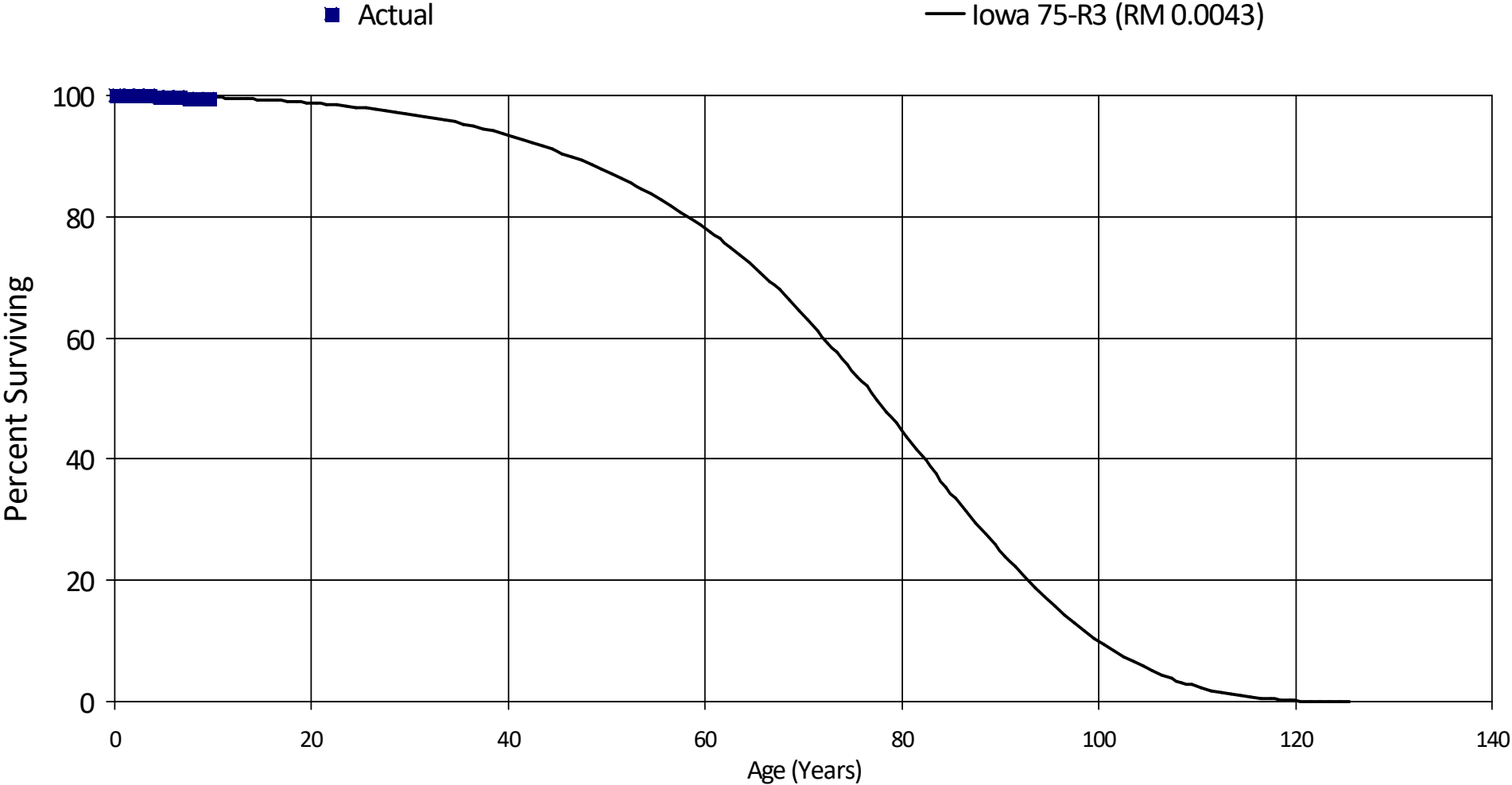
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	19,281,720	0	0.00000	1.00000	100.00
0.5	16,407,205	0	0.00000	1.00000	100.00
1.5	11,623,242	0	0.00000	1.00000	100.00
2.5	9,619,198	115,608	0.01202	0.98798	100.00
3.5	9,487,190	0	0.00000	1.00000	98.80
4.5	9,314,695	62,983	0.00676	0.99324	98.80
5.5	8,750,769	2,040	0.00023	0.99977	98.13
6.5	6,051,995	0	0.00000	1.00000	98.11
7.5	2,222,847	-207	-0.00009	1.00009	98.11
8.5	2,168,319	0	0.00000	1.00000	98.12
9.5	2,053,312	0	0.00000	1.00000	98.12
10.5	1,577,167	64,488	0.04089	0.95911	98.12
11.5	508,480	0	0.00000	1.00000	94.11
Totals:		244,912			

Toronto Hydro

Account 1113 - Buildings Service Centres Substructure

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1113 - Buildings Service Centres Substructure

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

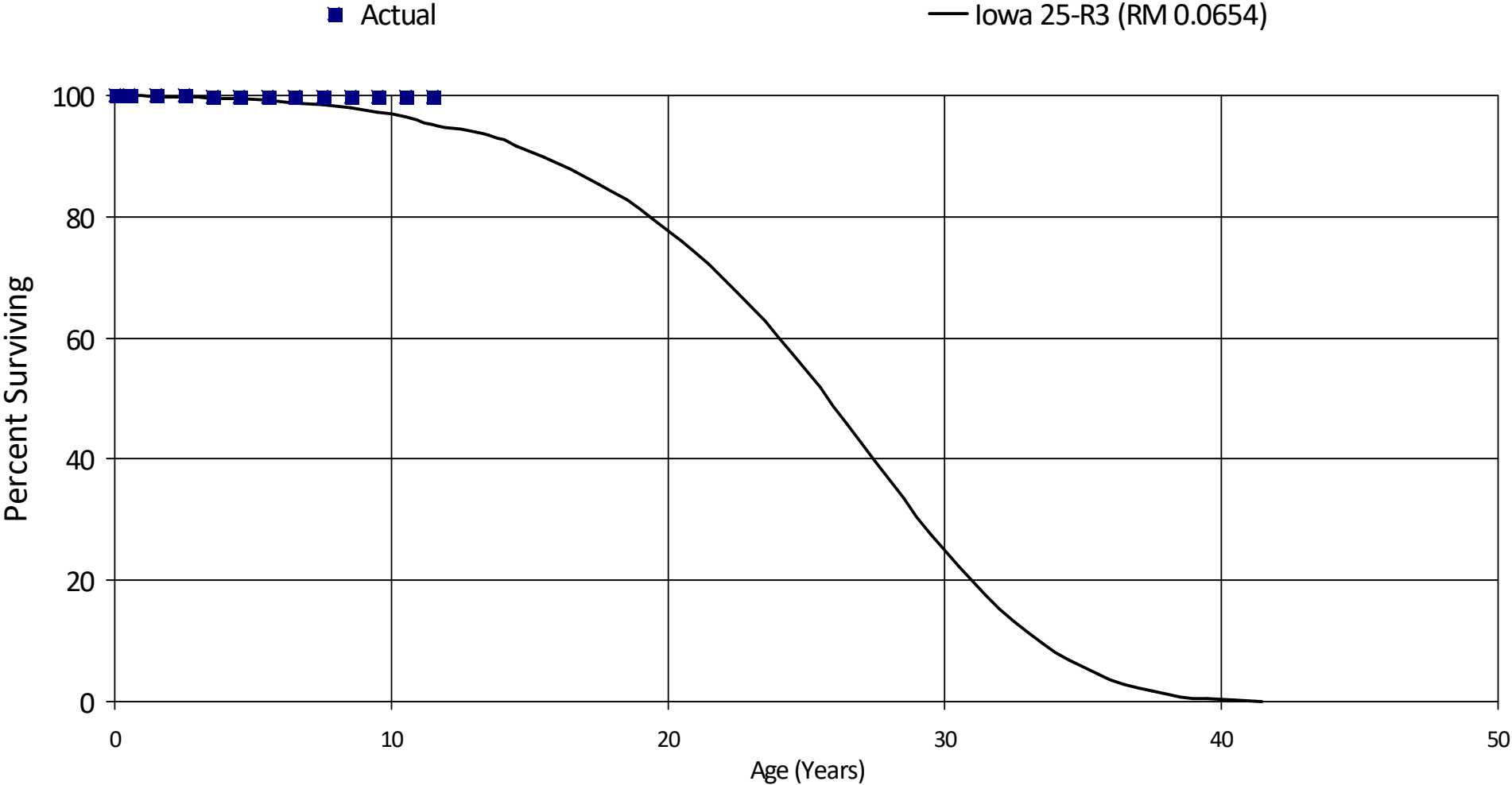
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	32,432,533	0	0.00000	1.00000	100.00
0.5	30,827,396	0	0.00000	1.00000	100.00
1.5	30,731,367	0	0.00000	1.00000	100.00
2.5	30,731,367	6,568	0.00021	0.99979	100.00
3.5	30,478,188	54,181	0.00178	0.99822	99.98
4.5	30,211,134	0	0.00000	1.00000	99.80
5.5	20,128,940	0	0.00000	1.00000	99.80
6.5	1,792,170	5,605	0.00313	0.99687	99.80
7.5	290,873	0	0.00000	1.00000	99.49
8.5	3,278	0	0.00000	1.00000	99.49
9.5	0	0	0.00000	0.00000	99.49
Totals:		66,354			

Toronto Hydro

Account 1115 - Buildings Service Centres Shell Site

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1115 - Buildings Service Centres Shell Site

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

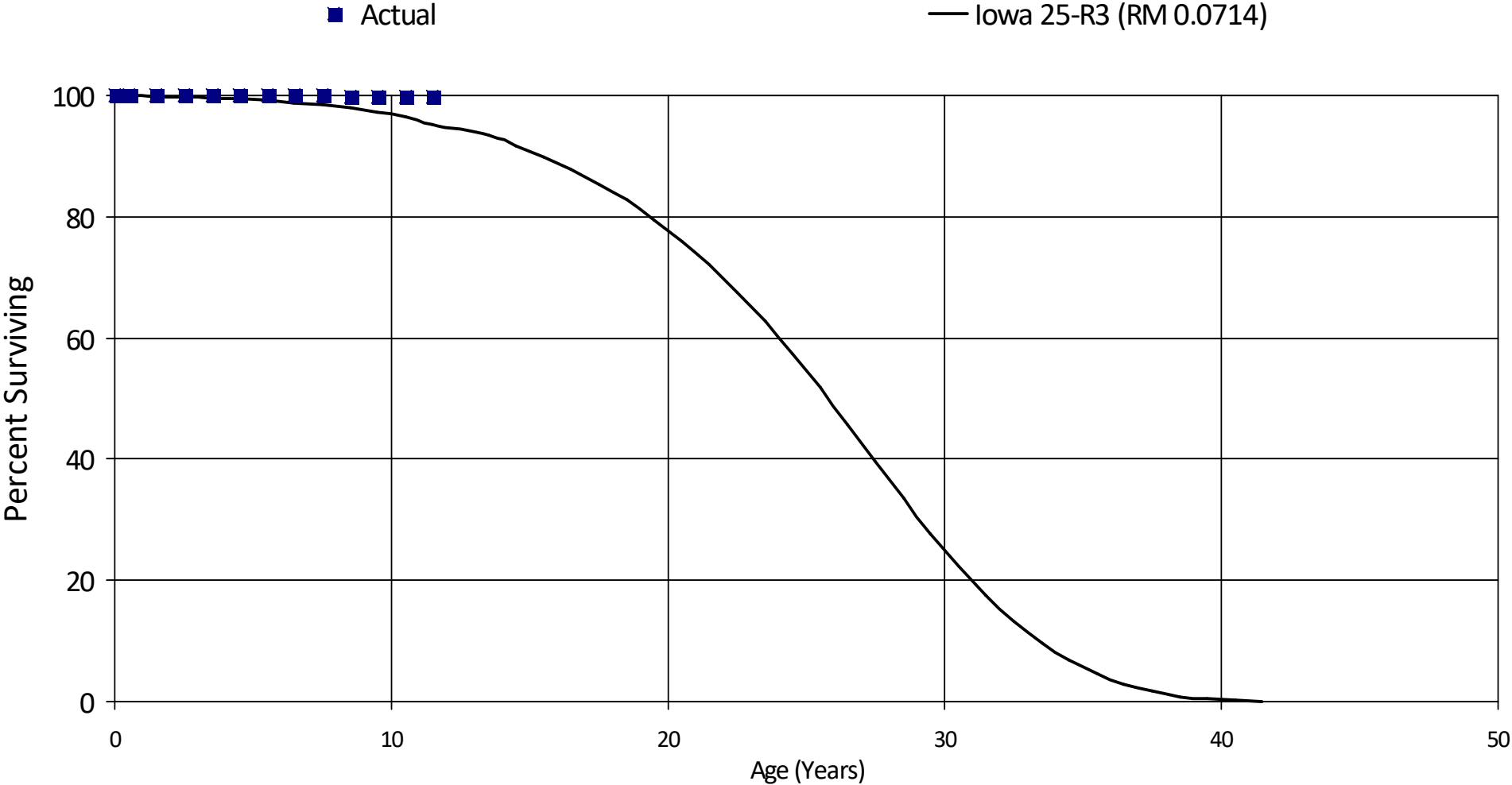
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	62,517,003	0	0.00000	1.00000	100.00
0.5	61,227,501	0	0.00000	1.00000	100.00
1.5	60,956,221	0	0.00000	1.00000	100.00
2.5	59,517,929	222,993	0.00375	0.99625	100.00
3.5	58,411,592	0	0.00000	1.00000	99.62
4.5	58,278,780	0	0.00000	1.00000	99.62
5.5	36,283,363	0	0.00000	1.00000	99.62
6.5	18,386,618	0	0.00000	1.00000	99.62
7.5	12,748,984	0	0.00000	1.00000	99.62
8.5	3,567,877	0	0.00000	1.00000	99.62
9.5	1,823,090	0	0.00000	1.00000	99.62
10.5	484,970	0	0.00000	1.00000	99.62
11.5	177,780	0	0.00000	1.00000	99.62
Totals:		222,993			

Toronto Hydro

Account 1117 - Buildings Service Centres Interior

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1117 - Buildings Service Centres Interior

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

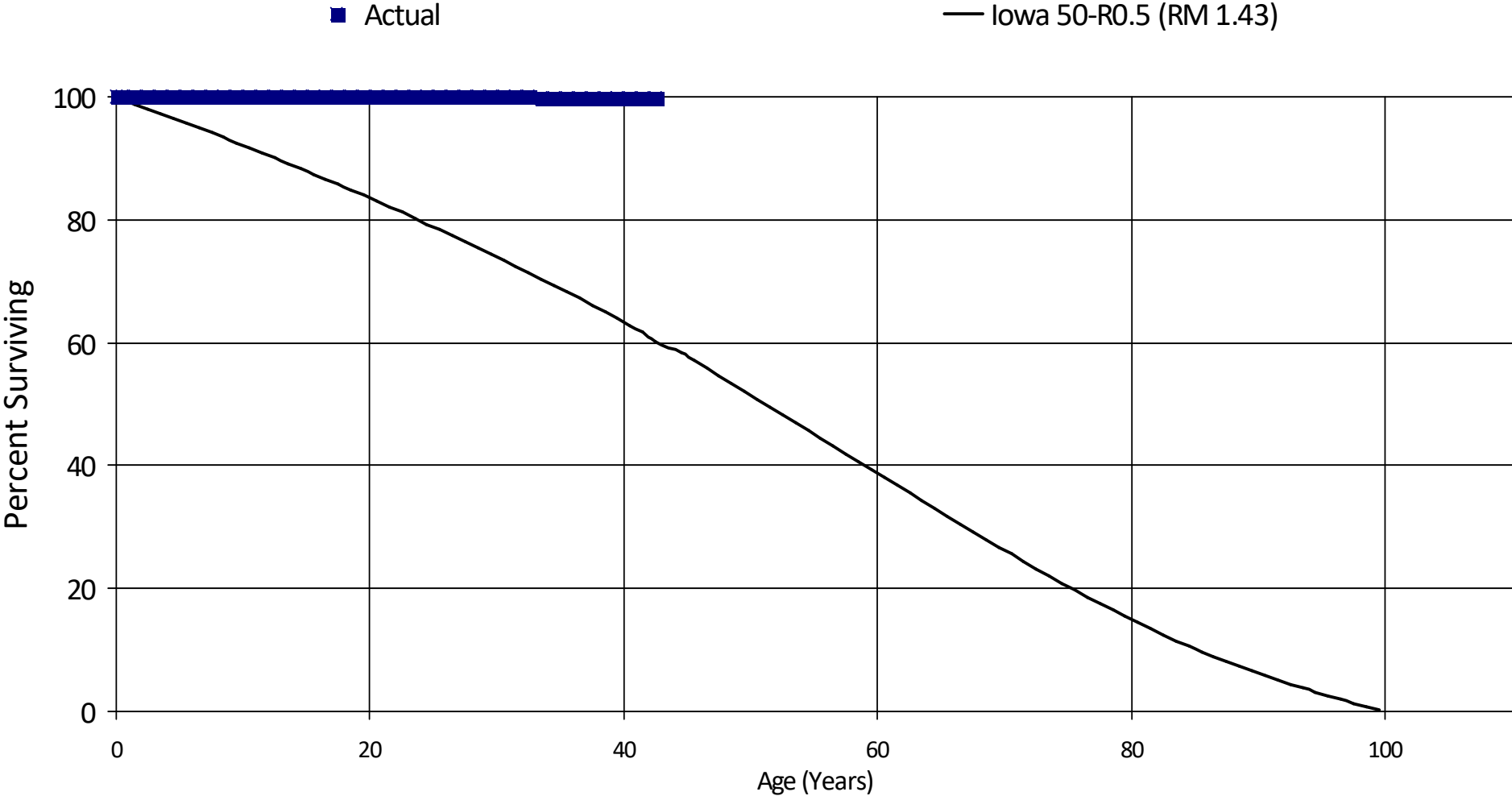
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	104,209,461	0	0.00000	1.00000	100.00
0.5	102,988,500	0	0.00000	1.00000	100.00
1.5	99,314,990	75,965	0.00076	0.99924	100.00
2.5	98,155,298	12,933	0.00013	0.99987	99.92
3.5	96,303,208	10,124	0.00011	0.99989	99.91
4.5	94,123,285	3,857	0.00004	0.99996	99.90
5.5	62,882,936	0	0.00000	1.00000	99.90
6.5	46,441,296	0	0.00000	1.00000	99.90
7.5	17,307,103	5,953	0.00034	0.99966	99.90
8.5	5,304,252	0	0.00000	1.00000	99.87
9.5	2,967,596	0	0.00000	1.00000	99.87
10.5	2,272,618	0	0.00000	1.00000	99.87
11.5	85,685	0	0.00000	1.00000	99.87
Totals:		108,832			

Toronto Hydro

Account 1131 - Buildings Substation Structure

Placement Band - 1979 - 2022 Experience Band - 2016 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1131 - Buildings Substation Structure

Placement Band - 1979 - 2022 Experience Band - 2016 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	18,947,027	0	0.00000	1.00000	100.00
0.5	18,947,027	0	0.00000	1.00000	100.00
1.5	18,947,027	0	0.00000	1.00000	100.00
2.5	18,947,027	0	0.00000	1.00000	100.00
3.5	18,947,027	0	0.00000	1.00000	100.00
4.5	18,947,027	0	0.00000	1.00000	100.00
5.5	18,947,027	0	0.00000	1.00000	100.00
6.5	18,947,027	0	0.00000	1.00000	100.00
7.5	18,947,027	2,280	0.00012	0.99988	100.00
8.5	18,944,747	0	0.00000	1.00000	99.99
9.5	18,944,747	0	0.00000	1.00000	99.99
10.5	18,944,747	12,033	0.00064	0.99936	99.99
11.5	18,932,714	0	0.00000	1.00000	99.93
12.5	18,892,937	76	0.00000	1.00000	99.93
13.5	18,892,861	0	0.00000	1.00000	99.93
14.5	17,393,429	150	0.00001	0.99999	99.93
15.5	16,473,759	0	0.00000	1.00000	99.93
16.5	15,317,094	0	0.00000	1.00000	99.93
17.5	14,140,687	0	0.00000	1.00000	99.93
18.5	13,780,251	0	0.00000	1.00000	99.93
19.5	13,746,855	0	0.00000	1.00000	99.93
20.5	13,534,314	0	0.00000	1.00000	99.93
21.5	12,942,270	0	0.00000	1.00000	99.93
22.5	12,168,621	0	0.00000	1.00000	99.93
23.5	10,563,473	0	0.00000	1.00000	99.93
24.5	9,972,806	0	0.00000	1.00000	99.93
25.5	8,447,470	0	0.00000	1.00000	99.93
26.5	7,645,103	2,568	0.00034	0.99966	99.93

Toronto Hydro

Account 1131 - Buildings Substation Structure

Placement Band - 1979 - 2022 Experience Band - 2016 - 2022

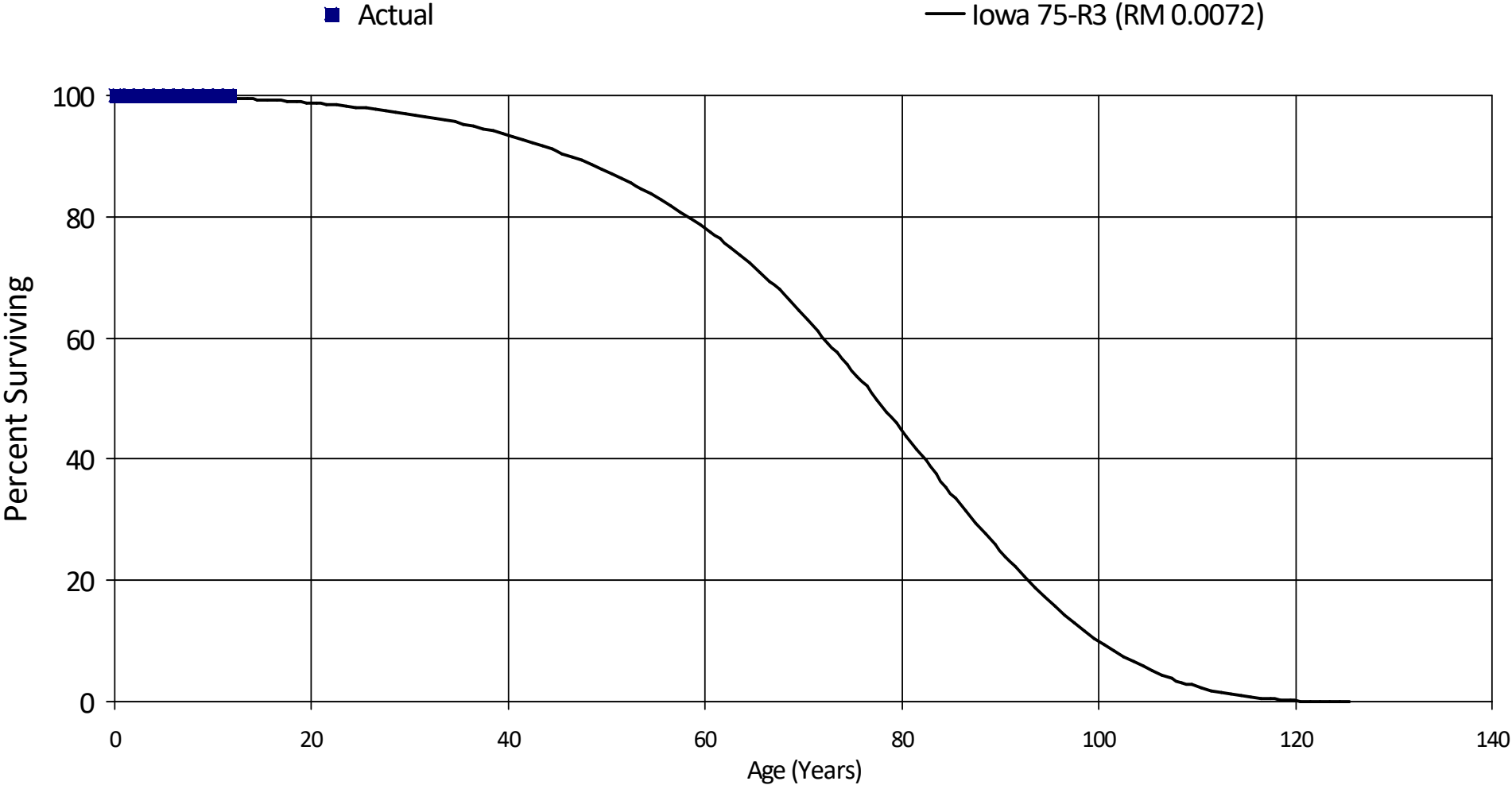
27.5	7,271,939	0	0.00000	1.00000	99.90
28.5	6,833,434	0	0.00000	1.00000	99.90
29.5	5,835,993	0	0.00000	1.00000	99.90
30.5	3,067,155	0	0.00000	1.00000	99.90
31.5	2,845,641	0	0.00000	1.00000	99.90
32.5	2,570,869	1,947	0.00076	0.99924	99.90
33.5	1,289,264	0	0.00000	1.00000	99.82
34.5	895,268	0	0.00000	1.00000	99.82
35.5	720,756	0	0.00000	1.00000	99.82
36.5	647,577	0	0.00000	1.00000	99.82
37.5	436,794	0	0.00000	1.00000	99.82
38.5	348,451	0	0.00000	1.00000	99.82
39.5	277,234	0	0.00000	1.00000	99.82
40.5	256,556	0	0.00000	1.00000	99.82
41.5	244,314	0	0.00000	1.00000	99.82
42.5	21,298	0	0.00000	1.00000	99.82
Totals:		19,054			

Toronto Hydro

Account 1133 - Buildings Substation Substructure

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1133 - Buildings Substation Substructure

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

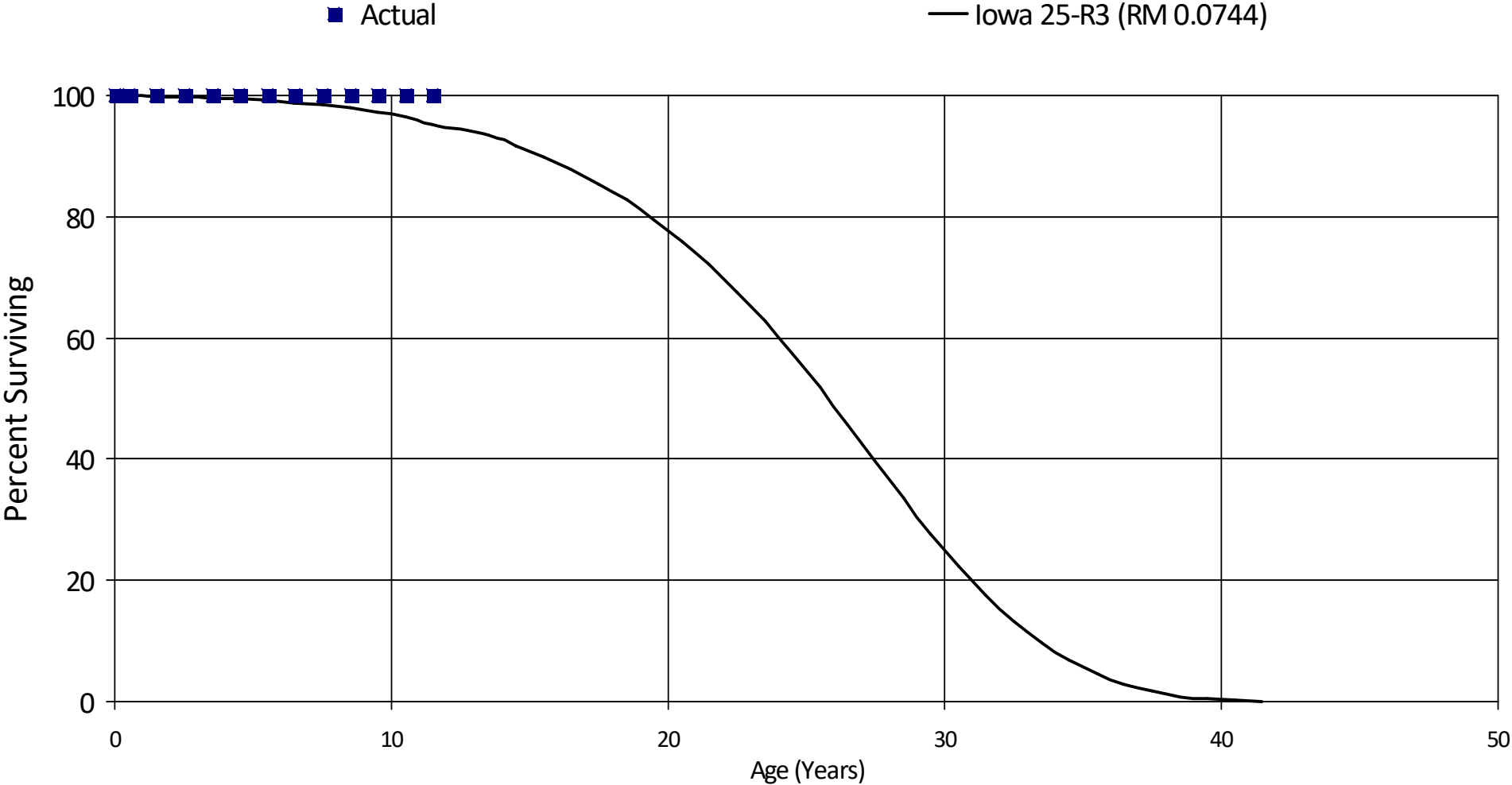
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	106,054,854	0	0.00000	1.00000	100.00
0.5	102,472,543	0	0.00000	1.00000	100.00
1.5	100,911,254	0	0.00000	1.00000	100.00
2.5	99,039,389	1,815	0.00002	0.99998	100.00
3.5	98,924,016	20,597	0.00021	0.99979	100.00
4.5	86,636,655	14,888	0.00017	0.99983	99.98
5.5	79,672,864	0	0.00000	1.00000	99.96
6.5	19,079,130	0	0.00000	1.00000	99.96
7.5	106,242	0	0.00000	1.00000	99.96
8.5	106,242	0	0.00000	1.00000	99.96
9.5	106,242	0	0.00000	1.00000	99.96
10.5	64,143	0	0.00000	1.00000	99.96
11.5	0	0	0.00000	0.00000	99.96
Totals:		37,300			

Toronto Hydro

Account 1135 - Buildings Substation Shell Site

Placement Band - 2010 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1135 - Buildings Substation Shell Site

Placement Band - 2010 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

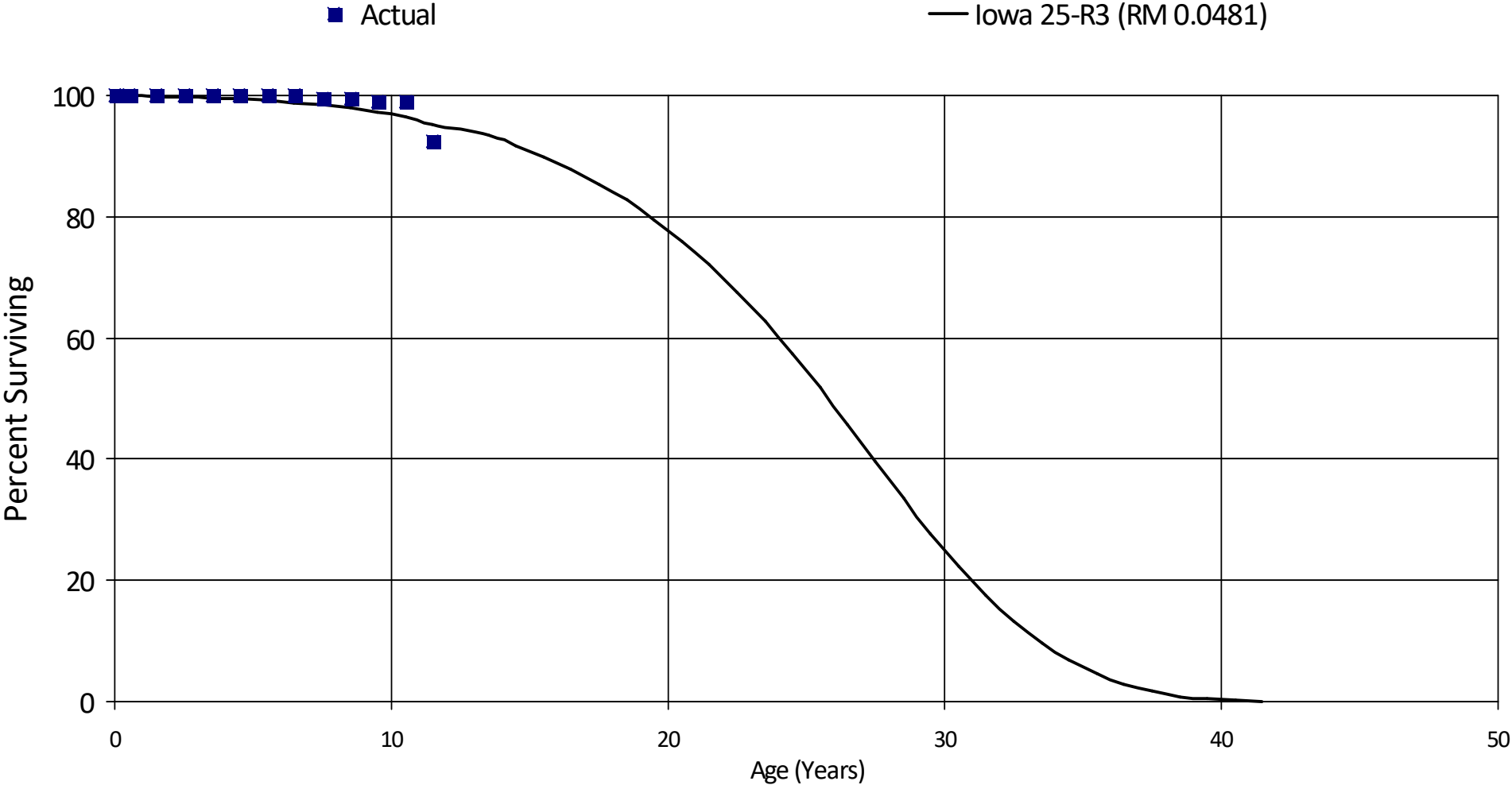
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	18,152,858	0	0.00000	1.00000	100.00
0.5	15,278,762	0	0.00000	1.00000	100.00
1.5	14,273,686	0	0.00000	1.00000	100.00
2.5	13,374,502	0	0.00000	1.00000	100.00
3.5	5,096,656	0	0.00000	1.00000	100.00
4.5	4,744,650	0	0.00000	1.00000	100.00
5.5	4,726,845	0	0.00000	1.00000	100.00
6.5	3,767,535	0	0.00000	1.00000	100.00
7.5	2,974,579	0	0.00000	1.00000	100.00
8.5	2,460,776	0	0.00000	1.00000	100.00
9.5	2,164,886	0	0.00000	1.00000	100.00
10.5	2,119,047	0	0.00000	1.00000	100.00
11.5	884,472	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 1137 - Buildings Substation Interior

Placement Band - 2010 - 2022 Experience Band - 2016 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1137 - Buildings Substation Interior

Placement Band - 2010 - 2022 Experience Band - 2016 - 2022

RETIREMENT RATE ANALYSIS

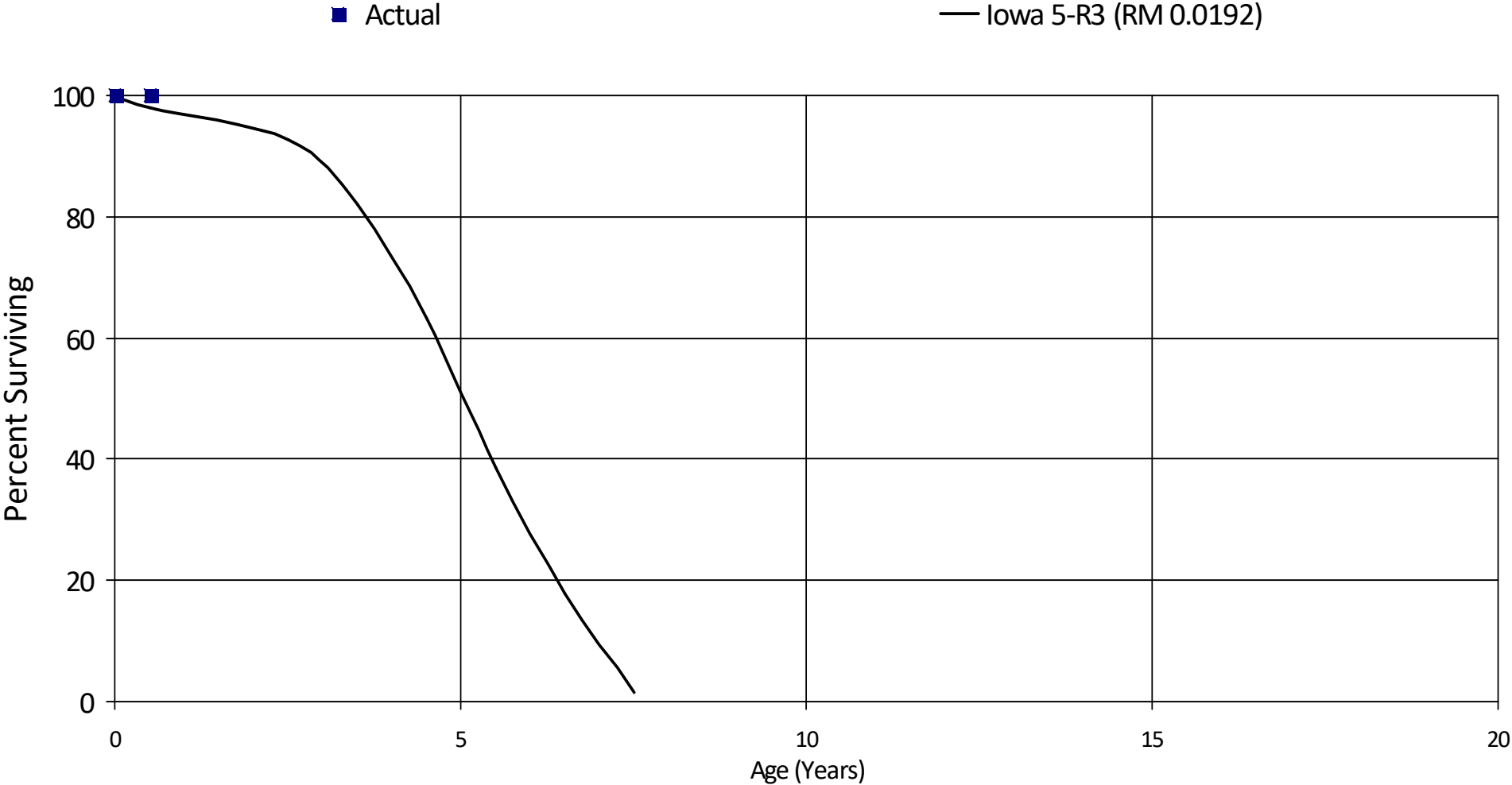
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	37,980,338	0	0.00000	1.00000	100.00
0.5	29,661,142	0	0.00000	1.00000	100.00
1.5	26,984,194	0	0.00000	1.00000	100.00
2.5	22,051,881	0	0.00000	1.00000	100.00
3.5	18,387,901	0	0.00000	1.00000	100.00
4.5	17,757,174	6,236	0.00035	0.99965	100.00
5.5	12,108,758	0	0.00000	1.00000	99.96
6.5	9,329,548	50,275	0.00539	0.99461	99.96
7.5	6,612,049	0	0.00000	1.00000	99.42
8.5	4,666,078	23,825	0.00511	0.99489	99.42
9.5	2,270,589	0	0.00000	1.00000	98.91
10.5	802,684	53,944	0.06720	0.93280	98.91
11.5	292,838	0	0.00000	1.00000	92.26
Totals:		134,280			

Toronto Hydro

Account 1171 - Leasehold Improvements - Admin

Placement Band - 2021 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1171 - Leasehold Improvements - Admin

Placement Band - 2021 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

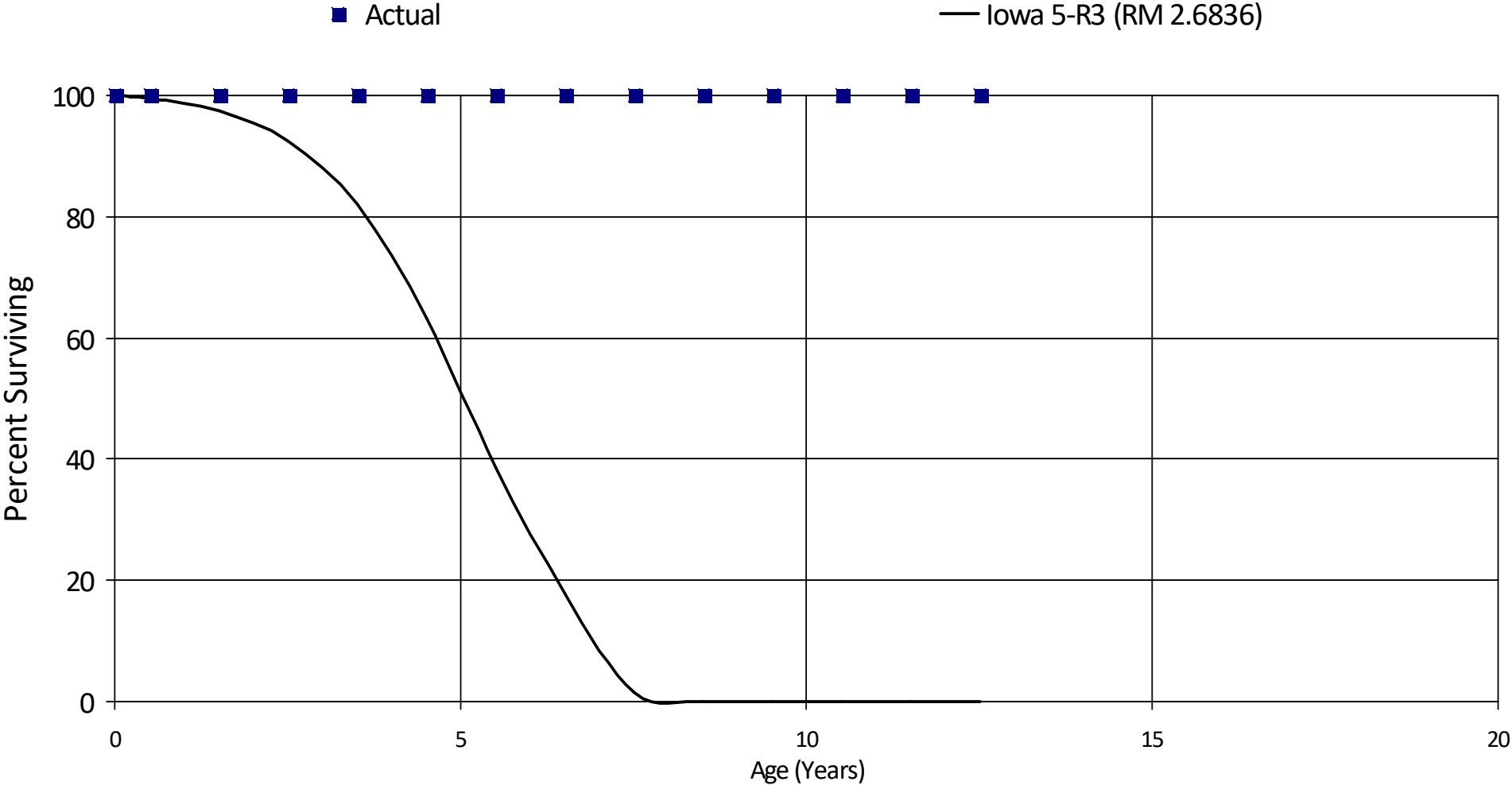
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	36,269	0	0.00000	1.00000	100.00
0.5	36,269	0	0.00000	1.00000	100.00
	Totals:	0			

Toronto Hydro

Account 1173 - Leasehold Improvements - Service Centres

Placement Band - 2009 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 1173 - Leasehold Improvements - Service Centres

Placement Band - 2009 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

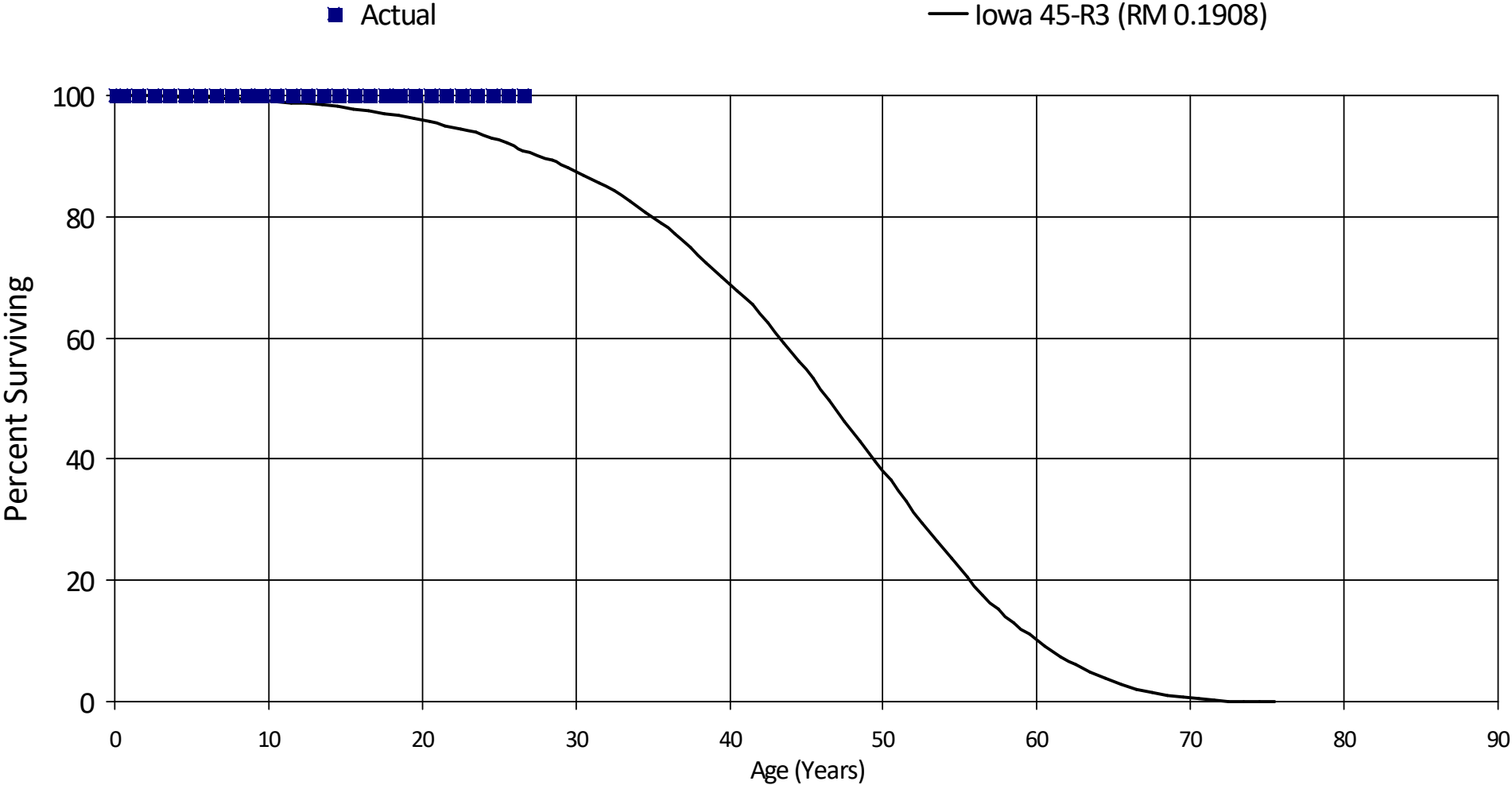
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	947,147	0	0.00000	1.00000	100.00
0.5	947,147	0	0.00000	1.00000	100.00
1.5	947,147	0	0.00000	1.00000	100.00
2.5	753,840	0	0.00000	1.00000	100.00
3.5	753,840	0	0.00000	1.00000	100.00
4.5	753,840	0	0.00000	1.00000	100.00
5.5	753,840	0	0.00000	1.00000	100.00
6.5	753,840	0	0.00000	1.00000	100.00
7.5	753,840	0	0.00000	1.00000	100.00
8.5	701,434	0	0.00000	1.00000	100.00
9.5	698,312	0	0.00000	1.00000	100.00
10.5	268,978	0	0.00000	1.00000	100.00
11.5	132,441	0	0.00000	1.00000	100.00
12.5	7,035	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2011 - Transformer Station Equip - Power Transformer

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2011 - Transformer Station Equip - Power Transformer

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	25,497,963	0	0.00000	1.00000	100.00
0.5	25,497,963	0	0.00000	1.00000	100.00
1.5	25,497,963	0	0.00000	1.00000	100.00
2.5	25,497,963	0	0.00000	1.00000	100.00
3.5	25,497,963	0	0.00000	1.00000	100.00
4.5	25,497,963	0	0.00000	1.00000	100.00
5.5	5,662,636	0	0.00000	1.00000	100.00
6.5	5,507,942	0	0.00000	1.00000	100.00
7.5	5,507,942	0	0.00000	1.00000	100.00
8.5	5,507,942	0	0.00000	1.00000	100.00
9.5	5,507,942	0	0.00000	1.00000	100.00
10.5	5,058,583	0	0.00000	1.00000	100.00
11.5	4,499,118	0	0.00000	1.00000	100.00
12.5	4,499,118	0	0.00000	1.00000	100.00
13.5	4,499,118	0	0.00000	1.00000	100.00
14.5	4,499,118	0	0.00000	1.00000	100.00
15.5	4,499,118	0	0.00000	1.00000	100.00
16.5	4,499,118	0	0.00000	1.00000	100.00
17.5	4,499,118	0	0.00000	1.00000	100.00
18.5	4,499,118	0	0.00000	1.00000	100.00
19.5	4,499,118	0	0.00000	1.00000	100.00
20.5	4,499,118	0	0.00000	1.00000	100.00
21.5	4,499,118	0	0.00000	1.00000	100.00
22.5	4,499,118	0	0.00000	1.00000	100.00
23.5	4,499,118	0	0.00000	1.00000	100.00
24.5	4,499,118	0	0.00000	1.00000	100.00
25.5	4,499,118	0	0.00000	1.00000	100.00
26.5	4,499,118	2,249,559	0.50000	0.50000	100.00

Toronto Hydro

Account 2011 - Transformer Station Equip - Power Transformer

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

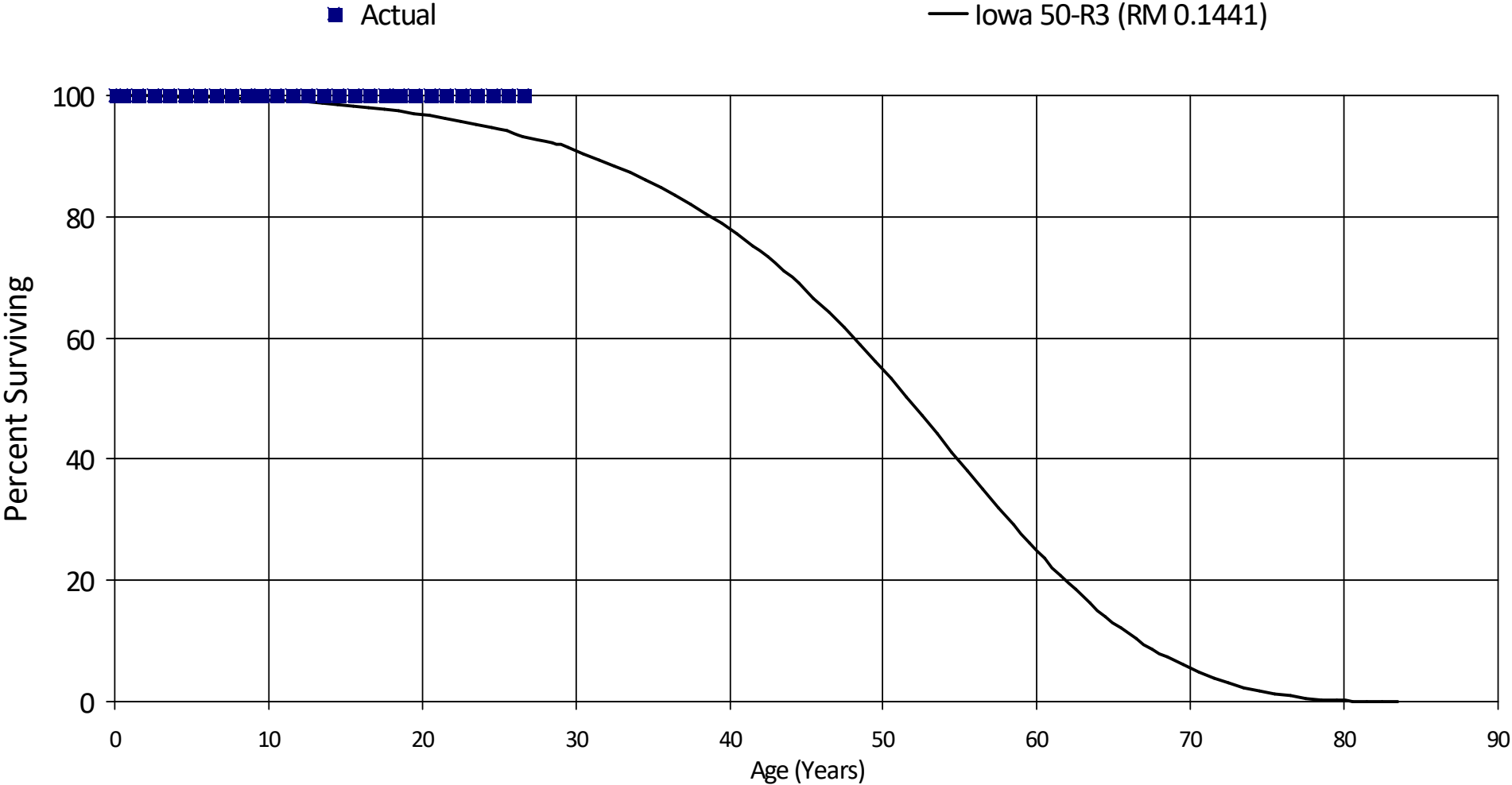
Totals:

Toronto Hydro

Account 2013 - Transformer Station Equip - Steel Struct Bus Work

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2013 - Transformer Station Equip - Steel Struct Bus Work

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	147,482	0	0.00000	1.00000	100.00
0.5	147,482	0	0.00000	1.00000	100.00
1.5	147,482	0	0.00000	1.00000	100.00
2.5	147,482	0	0.00000	1.00000	100.00
3.5	147,482	0	0.00000	1.00000	100.00
4.5	147,482	0	0.00000	1.00000	100.00
5.5	147,482	0	0.00000	1.00000	100.00
6.5	147,482	0	0.00000	1.00000	100.00
7.5	147,482	0	0.00000	1.00000	100.00
8.5	147,482	0	0.00000	1.00000	100.00
9.5	147,482	0	0.00000	1.00000	100.00
10.5	147,482	0	0.00000	1.00000	100.00
11.5	147,482	0	0.00000	1.00000	100.00
12.5	147,482	0	0.00000	1.00000	100.00
13.5	147,482	0	0.00000	1.00000	100.00
14.5	147,482	0	0.00000	1.00000	100.00
15.5	147,482	0	0.00000	1.00000	100.00
16.5	147,482	0	0.00000	1.00000	100.00
17.5	147,482	0	0.00000	1.00000	100.00
18.5	147,482	0	0.00000	1.00000	100.00
19.5	147,482	0	0.00000	1.00000	100.00
20.5	147,482	0	0.00000	1.00000	100.00
21.5	147,482	0	0.00000	1.00000	100.00
22.5	147,482	0	0.00000	1.00000	100.00
23.5	147,482	0	0.00000	1.00000	100.00
24.5	147,482	0	0.00000	1.00000	100.00
25.5	147,482	0	0.00000	1.00000	100.00
26.5	147,482	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2013 - Transformer Station Equip - Steel Struct Bus Work

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

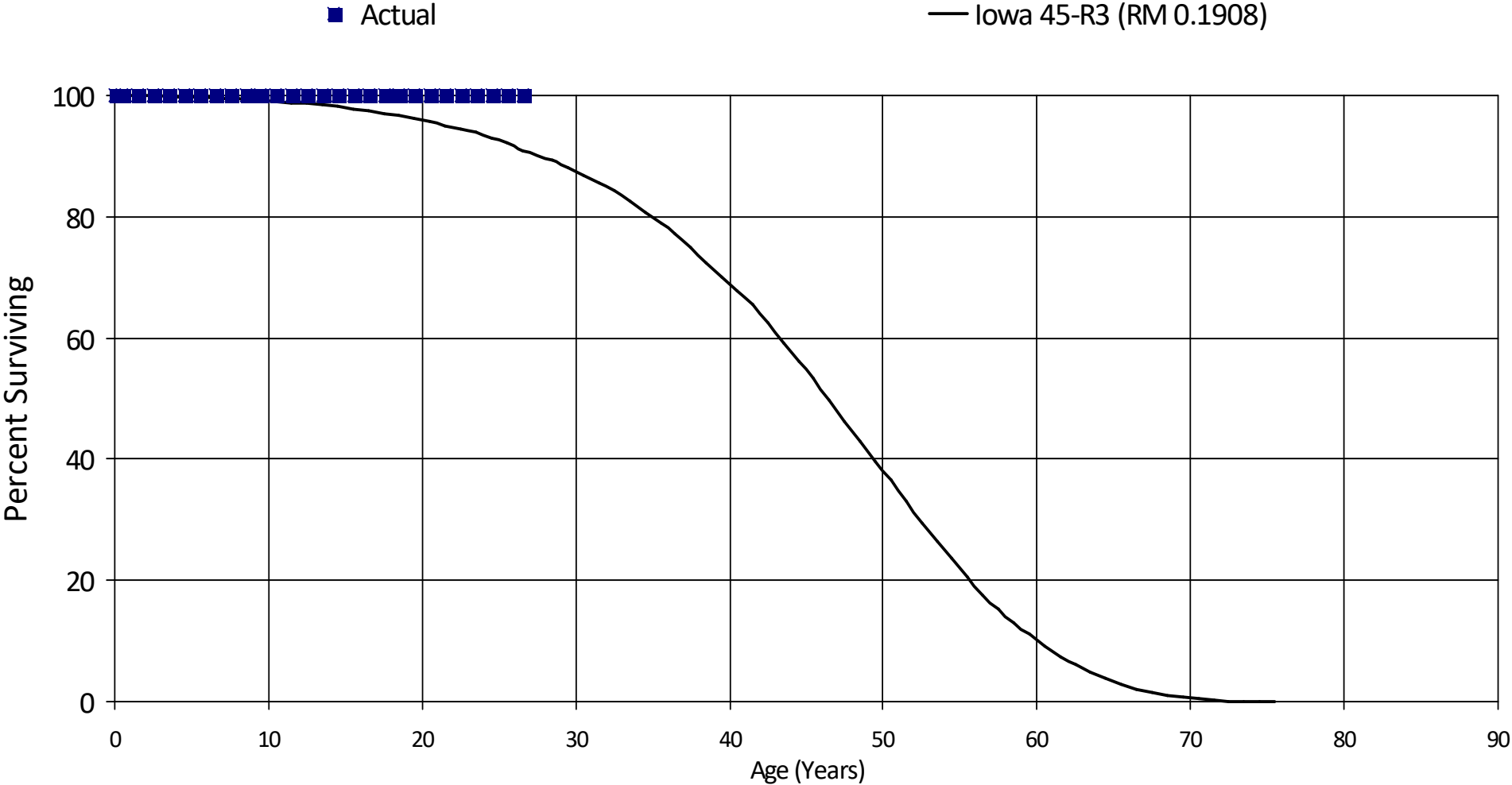
Totals:

Toronto Hydro

Account 2015 - Transformer Station Equip - Disconnect Switch

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2015 - Transformer Station Equip - Disconnect Switch

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	86,004	0	0.00000	1.00000	100.00
0.5	86,004	0	0.00000	1.00000	100.00
1.5	86,004	0	0.00000	1.00000	100.00
2.5	86,004	0	0.00000	1.00000	100.00
3.5	86,004	0	0.00000	1.00000	100.00
4.5	86,004	0	0.00000	1.00000	100.00
5.5	86,004	0	0.00000	1.00000	100.00
6.5	86,004	0	0.00000	1.00000	100.00
7.5	86,004	0	0.00000	1.00000	100.00
8.5	86,004	0	0.00000	1.00000	100.00
9.5	86,004	0	0.00000	1.00000	100.00
10.5	86,004	0	0.00000	1.00000	100.00
11.5	86,004	0	0.00000	1.00000	100.00
12.5	86,004	0	0.00000	1.00000	100.00
13.5	86,004	0	0.00000	1.00000	100.00
14.5	86,004	0	0.00000	1.00000	100.00
15.5	86,004	0	0.00000	1.00000	100.00
16.5	86,004	0	0.00000	1.00000	100.00
17.5	86,004	0	0.00000	1.00000	100.00
18.5	86,004	0	0.00000	1.00000	100.00
19.5	86,004	0	0.00000	1.00000	100.00
20.5	86,004	0	0.00000	1.00000	100.00
21.5	86,004	0	0.00000	1.00000	100.00
22.5	86,004	0	0.00000	1.00000	100.00
23.5	86,004	0	0.00000	1.00000	100.00
24.5	86,004	0	0.00000	1.00000	100.00
25.5	86,004	0	0.00000	1.00000	100.00
26.5	86,004	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2015 - Transformer Station Equip - Disconnect Switch

Placement Band - 1995 - 2022 Experience Band - 2022 - 2022

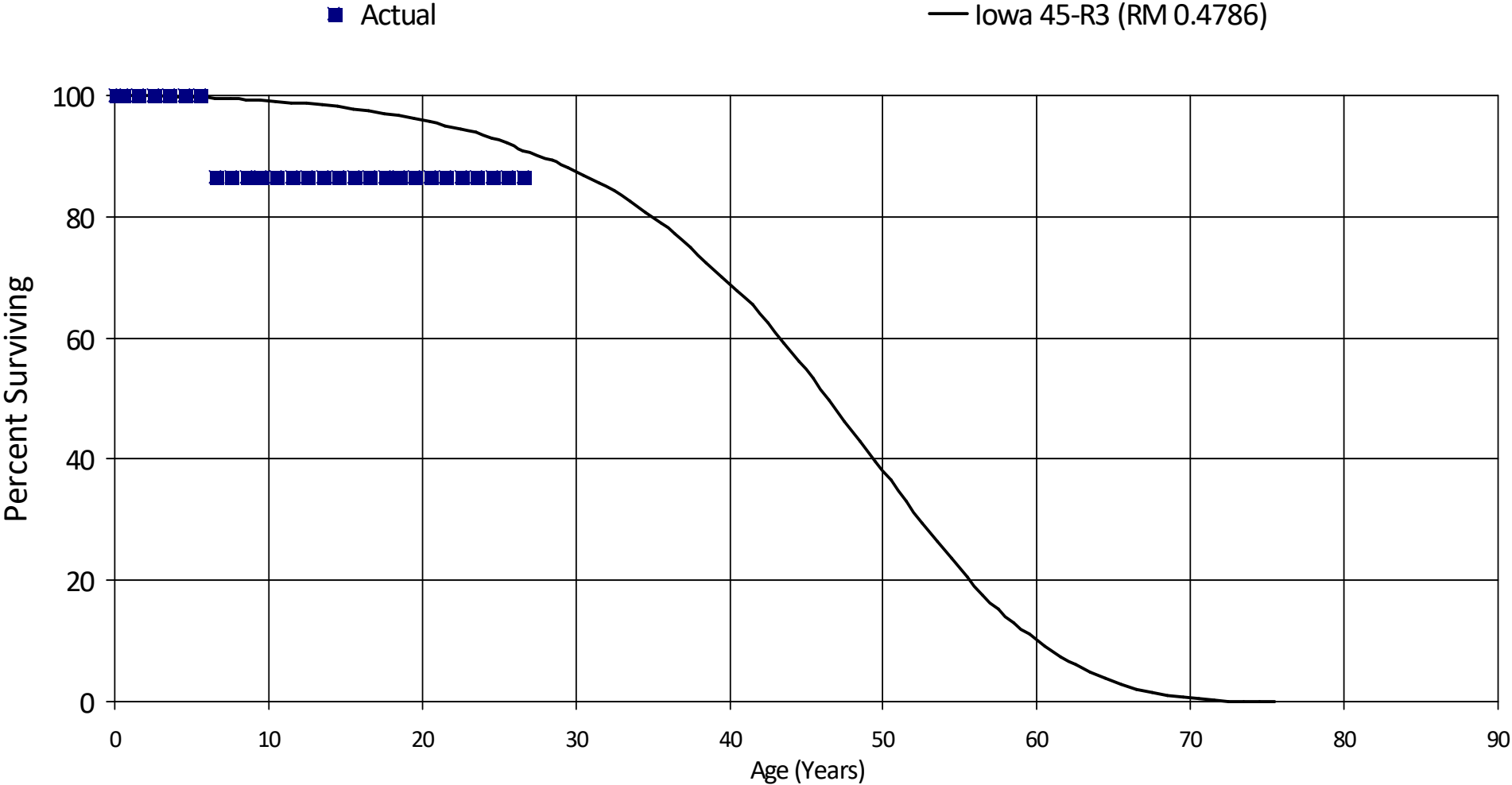
Totals:

Toronto Hydro

Account 2017 - Transformer Station Equip - Station Service

Placement Band - 1995 - 2022 Experience Band - 2017 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2017 - Transformer Station Equip - Station Service

Placement Band - 1995 - 2022 Experience Band - 2017 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	5,229,173	0	0.00000	1.00000	100.00
0.5	5,229,173	0	0.00000	1.00000	100.00
1.5	5,229,173	0	0.00000	1.00000	100.00
2.5	5,229,173	0	0.00000	1.00000	100.00
3.5	5,229,173	0	0.00000	1.00000	100.00
4.5	4,913,205	0	0.00000	1.00000	100.00
5.5	98,551	13,224	0.13418	0.86582	100.00
6.5	85,327	0	0.00000	1.00000	86.58
7.5	85,327	0	0.00000	1.00000	86.58
8.5	85,327	0	0.00000	1.00000	86.58
9.5	85,327	0	0.00000	1.00000	86.58
10.5	85,327	0	0.00000	1.00000	86.58
11.5	85,378	0	0.00000	1.00000	86.58
12.5	85,378	0	0.00000	1.00000	86.58
13.5	85,378	0	0.00000	1.00000	86.58
14.5	85,378	0	0.00000	1.00000	86.58
15.5	85,378	0	0.00000	1.00000	86.58
16.5	85,378	0	0.00000	1.00000	86.58
17.5	85,378	0	0.00000	1.00000	86.58
18.5	85,378	0	0.00000	1.00000	86.58
19.5	85,378	0	0.00000	1.00000	86.58
20.5	85,378	0	0.00000	1.00000	86.58
21.5	85,378	0	0.00000	1.00000	86.58
22.5	85,378	0	0.00000	1.00000	86.58
23.5	85,378	0	0.00000	1.00000	86.58
24.5	85,378	0	0.00000	1.00000	86.58
25.5	85,378	0	0.00000	1.00000	86.58
26.5	85,378	42,689	0.50000	0.50000	86.58

Toronto Hydro

Account 2017 - Transformer Station Equip - Station Service

Placement Band - 1995 - 2022 Experience Band - 2017 - 2022

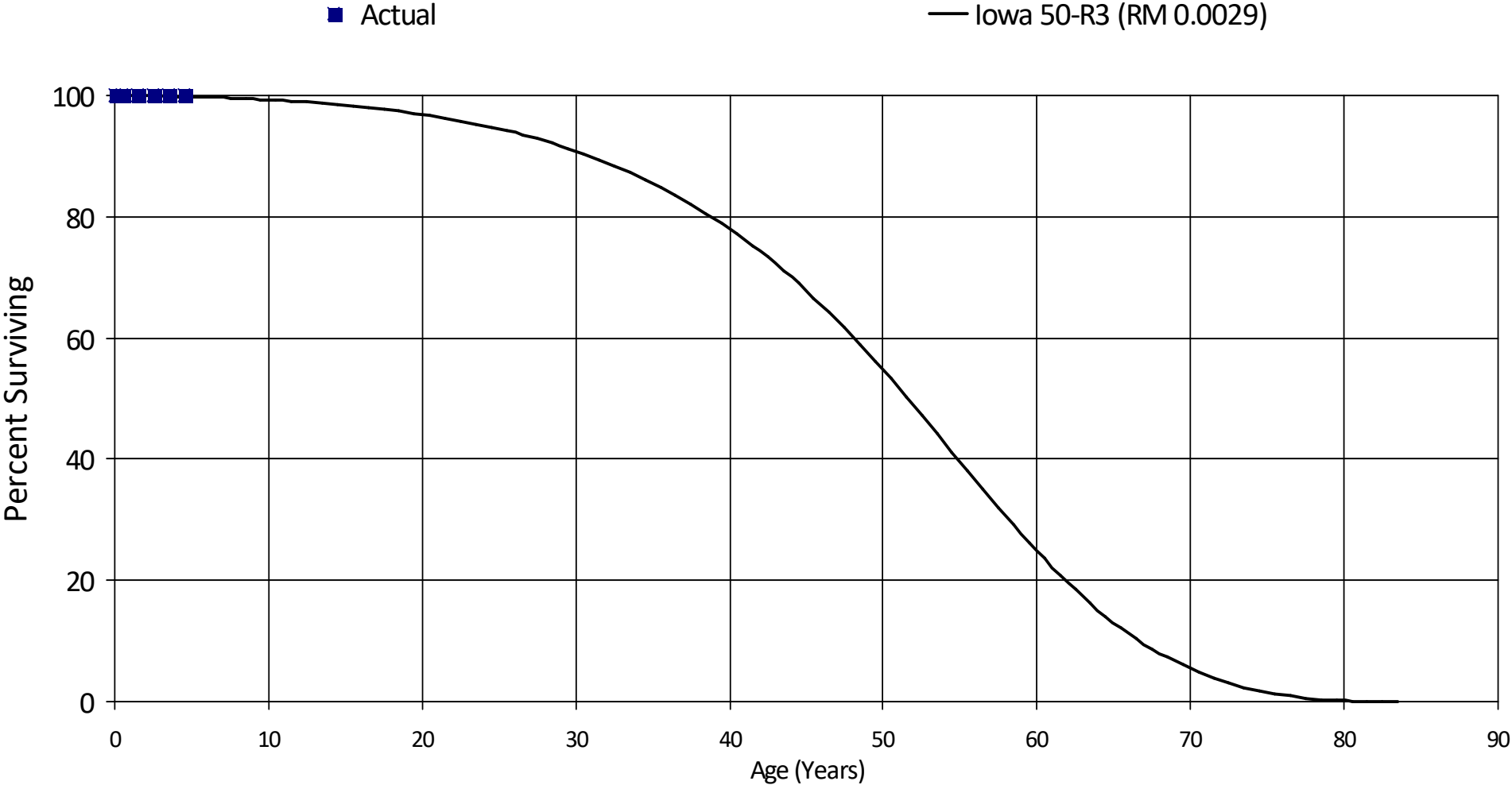
Totals:

Toronto Hydro

Account 2019 - Transformer Station Equip - High Voltage Switchgear

Placement Band - 2017 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2019 - Transformer Station Equip - High Voltage Switchgear

Placement Band - 2017 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

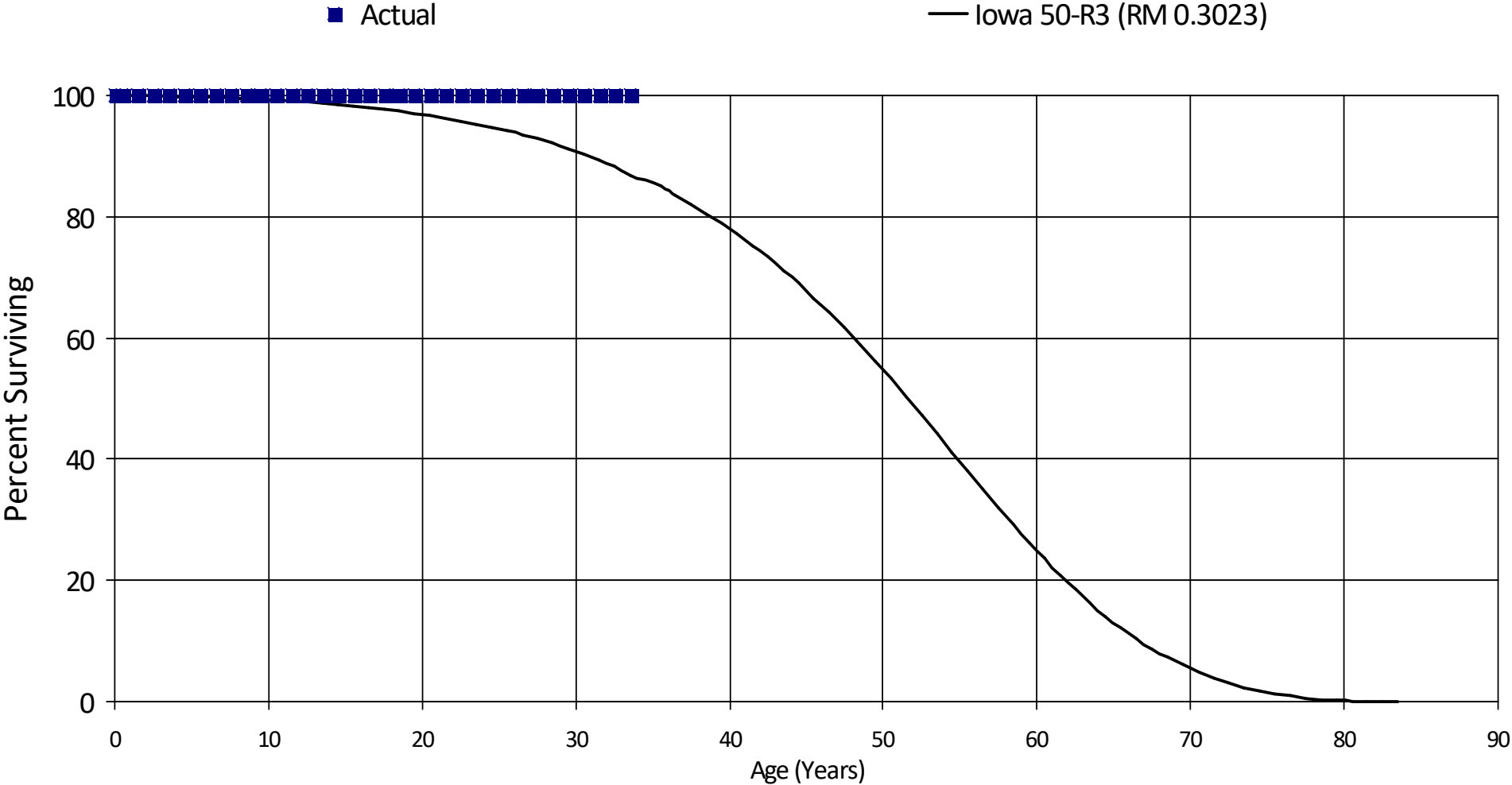
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	9,014,221	0	0.00000	1.00000	100.00
0.5	9,014,221	0	0.00000	1.00000	100.00
1.5	9,014,221	0	0.00000	1.00000	100.00
2.5	9,014,221	0	0.00000	1.00000	100.00
3.5	9,014,221	0	0.00000	1.00000	100.00
4.5	9,014,221	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2101 - Substation Equipment - Steel Structures Bus Work

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2101 - Substation Equipment - Steel Structures Bus Work

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	561,976	0	0.00000	1.00000	100.00
0.5	561,976	0	0.00000	1.00000	100.00
1.5	561,976	0	0.00000	1.00000	100.00
2.5	561,976	0	0.00000	1.00000	100.00
3.5	561,976	0	0.00000	1.00000	100.00
4.5	561,976	0	0.00000	1.00000	100.00
5.5	561,976	0	0.00000	1.00000	100.00
6.5	561,976	0	0.00000	1.00000	100.00
7.5	561,976	0	0.00000	1.00000	100.00
8.5	561,976	0	0.00000	1.00000	100.00
9.5	382,462	0	0.00000	1.00000	100.00
10.5	382,462	0	0.00000	1.00000	100.00
11.5	382,462	0	0.00000	1.00000	100.00
12.5	876	0	0.00000	1.00000	100.00
13.5	876	0	0.00000	1.00000	100.00
14.5	876	0	0.00000	1.00000	100.00
15.5	876	0	0.00000	1.00000	100.00
16.5	876	0	0.00000	1.00000	100.00
17.5	876	0	0.00000	1.00000	100.00
18.5	876	0	0.00000	1.00000	100.00
19.5	876	0	0.00000	1.00000	100.00
20.5	876	0	0.00000	1.00000	100.00
21.5	876	0	0.00000	1.00000	100.00
22.5	876	0	0.00000	1.00000	100.00
23.5	876	0	0.00000	1.00000	100.00
24.5	876	0	0.00000	1.00000	100.00
25.5	876	0	0.00000	1.00000	100.00
26.5	876	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2101 - Substation Equipment - Steel Structures Bus Work

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

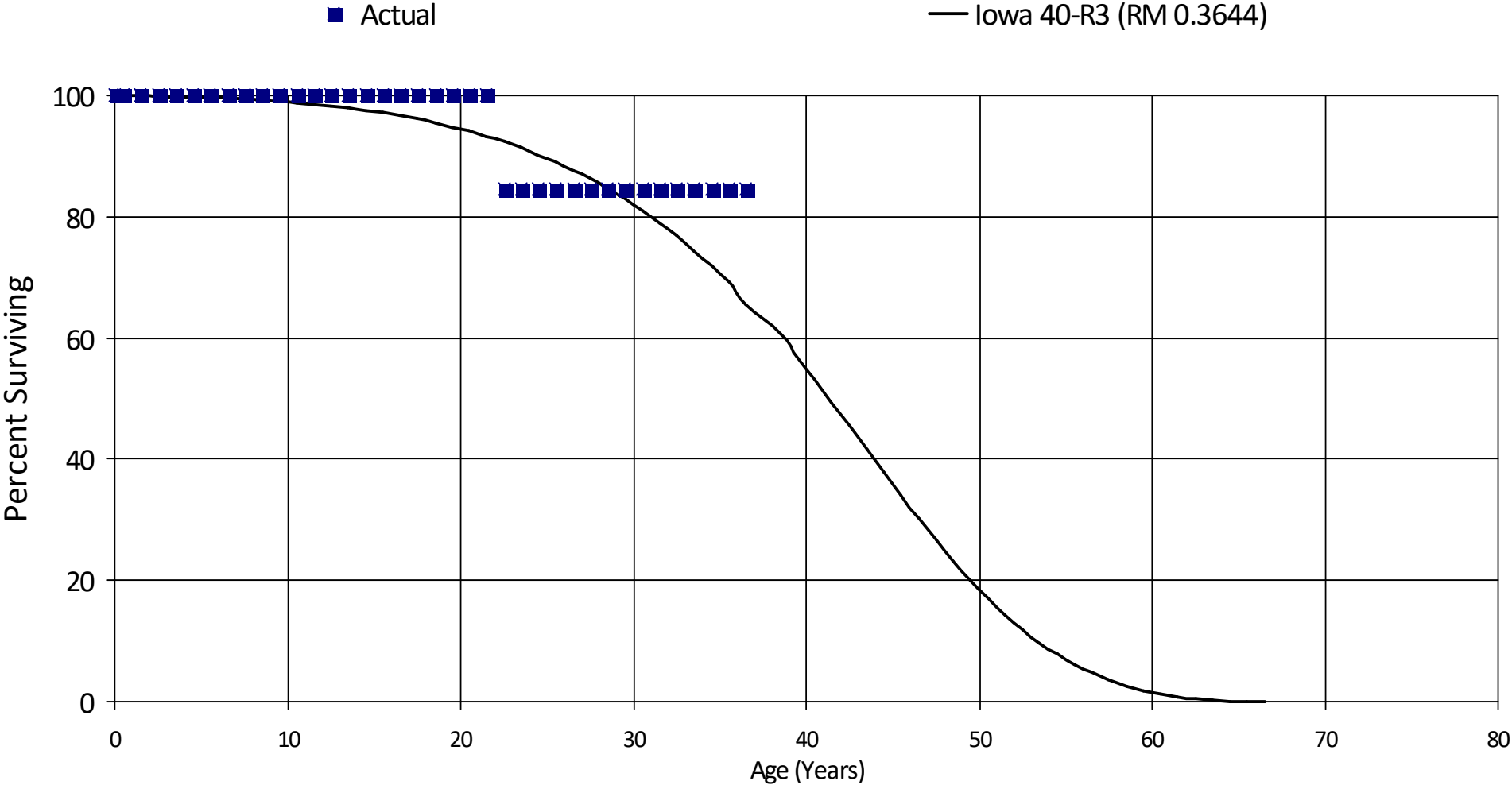
27.5	876	0	0.00000	1.00000	100.00
28.5	876	0	0.00000	1.00000	100.00
29.5	876	0	0.00000	1.00000	100.00
30.5	876	0	0.00000	1.00000	100.00
31.5	876	0	0.00000	1.00000	100.00
32.5	876	0	0.00000	1.00000	100.00
33.5	876	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2103 - Substation Equipment - Disconnect Switch

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2103 - Substation Equipment - Disconnect Switch

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	3,043,938	0	0.00000	1.00000	100.00
0.5	3,043,938	0	0.00000	1.00000	100.00
1.5	2,974,324	0	0.00000	1.00000	100.00
2.5	2,974,324	0	0.00000	1.00000	100.00
3.5	2,974,324	0	0.00000	1.00000	100.00
4.5	2,620,054	0	0.00000	1.00000	100.00
5.5	2,620,054	0	0.00000	1.00000	100.00
6.5	2,620,054	0	0.00000	1.00000	100.00
7.5	2,452,692	0	0.00000	1.00000	100.00
8.5	2,452,692	0	0.00000	1.00000	100.00
9.5	2,376,979	0	0.00000	1.00000	100.00
10.5	1,913,196	0	0.00000	1.00000	100.00
11.5	1,913,196	0	0.00000	1.00000	100.00
12.5	1,913,196	0	0.00000	1.00000	100.00
13.5	1,913,196	0	0.00000	1.00000	100.00
14.5	939,325	0	0.00000	1.00000	100.00
15.5	726,794	0	0.00000	1.00000	100.00
16.5	726,794	0	0.00000	1.00000	100.00
17.5	726,794	0	0.00000	1.00000	100.00
18.5	726,794	0	0.00000	1.00000	100.00
19.5	726,794	0	0.00000	1.00000	100.00
20.5	726,794	0	0.00000	1.00000	100.00
21.5	726,794	111,933	0.15401	0.84599	100.00
22.5	567,961	0	0.00000	1.00000	84.60
23.5	542,002	0	0.00000	1.00000	84.60
24.5	485,691	0	0.00000	1.00000	84.60
25.5	402,207	0	0.00000	1.00000	84.60
26.5	402,207	0	0.00000	1.00000	84.60

Toronto Hydro

Account 2103 - Substation Equipment - Disconnect Switch

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

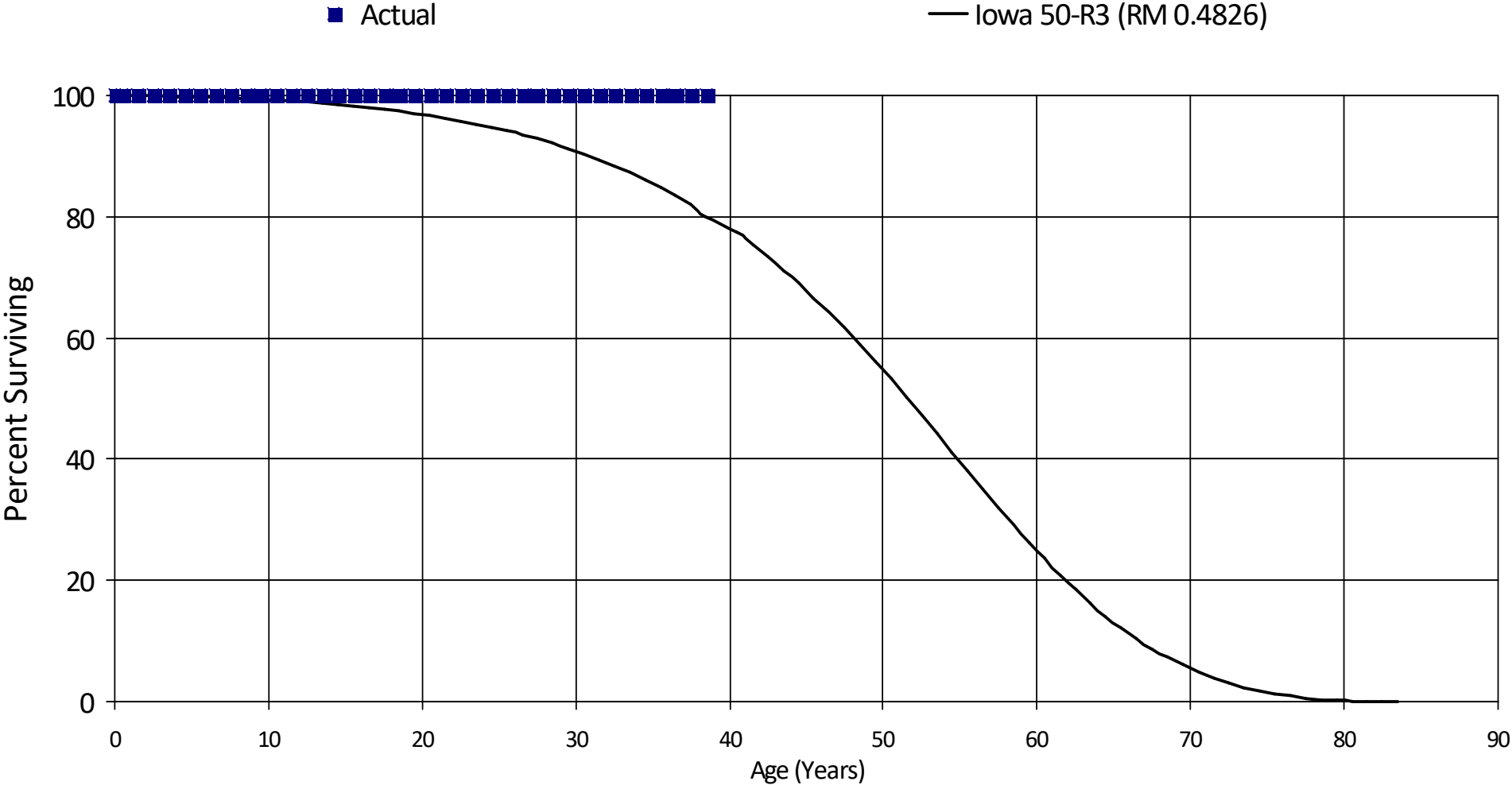
27.5	292,848	0	0.00000	1.00000	84.60
28.5	233,714	0	0.00000	1.00000	84.60
29.5	185,339	0	0.00000	1.00000	84.60
30.5	99,471	0	0.00000	1.00000	84.60
31.5	78,306	0	0.00000	1.00000	84.60
32.5	38,118	0	0.00000	1.00000	84.60
33.5	26,510	0	0.00000	1.00000	84.60
34.5	11,087	0	0.00000	1.00000	84.60
35.5	6,080	0	0.00000	1.00000	84.60
36.5	1,837	0	0.00000	1.00000	84.60
Totals:		111,933			

Toronto Hydro

Account 2105 - Substation Equipment - MS Station Service

Placement Band - 1983 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2105 - Substation Equipment - MS Station Service

Placement Band - 1983 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	73,004	0	0.00000	1.00000	100.00
0.5	73,004	0	0.00000	1.00000	100.00
1.5	69,487	0	0.00000	1.00000	100.00
2.5	69,487	0	0.00000	1.00000	100.00
3.5	69,487	0	0.00000	1.00000	100.00
4.5	69,487	0	0.00000	1.00000	100.00
5.5	69,487	0	0.00000	1.00000	100.00
6.5	69,487	0	0.00000	1.00000	100.00
7.5	69,487	0	0.00000	1.00000	100.00
8.5	69,487	0	0.00000	1.00000	100.00
9.5	69,487	0	0.00000	1.00000	100.00
10.5	69,487	0	0.00000	1.00000	100.00
11.5	60,449	0	0.00000	1.00000	100.00
12.5	60,449	0	0.00000	1.00000	100.00
13.5	60,449	0	0.00000	1.00000	100.00
14.5	60,449	0	0.00000	1.00000	100.00
15.5	60,449	0	0.00000	1.00000	100.00
16.5	60,449	0	0.00000	1.00000	100.00
17.5	60,449	0	0.00000	1.00000	100.00
18.5	60,449	0	0.00000	1.00000	100.00
19.5	60,449	0	0.00000	1.00000	100.00
20.5	60,449	0	0.00000	1.00000	100.00
21.5	60,449	0	0.00000	1.00000	100.00
22.5	60,449	0	0.00000	1.00000	100.00
23.5	60,449	0	0.00000	1.00000	100.00
24.5	60,449	0	0.00000	1.00000	100.00
25.5	60,449	0	0.00000	1.00000	100.00
26.5	48,460	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2105 - Substation Equipment - MS Station Service

Placement Band - 1983 - 2022 Experience Band - 2022 - 2022

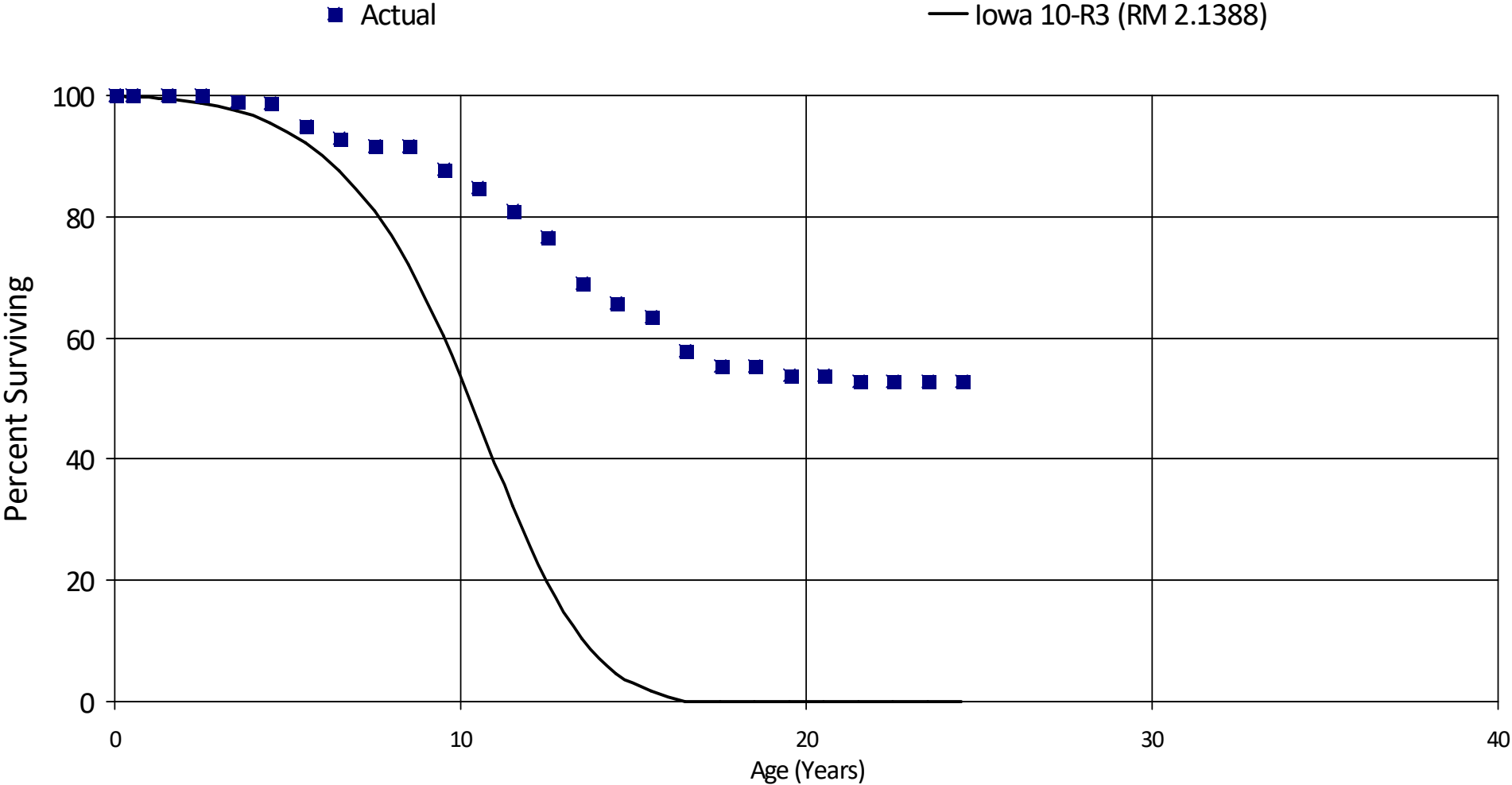
27.5	36,693	0	0.00000	1.00000	100.00
28.5	30,294	0	0.00000	1.00000	100.00
29.5	25,021	0	0.00000	1.00000	100.00
30.5	15,572	0	0.00000	1.00000	100.00
31.5	13,212	0	0.00000	1.00000	100.00
32.5	8,651	0	0.00000	1.00000	100.00
33.5	6,191	0	0.00000	1.00000	100.00
34.5	2,787	0	0.00000	1.00000	100.00
35.5	2,136	0	0.00000	1.00000	100.00
36.5	1,505	0	0.00000	1.00000	100.00
37.5	1,123	0	0.00000	1.00000	100.00
38.5	253	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2107 - Substation Equipment - DC Stn Service Batteries

Placement Band - 1997 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2107 - Substation Equipment - DC Stn Service Batteries

Placement Band - 1997 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

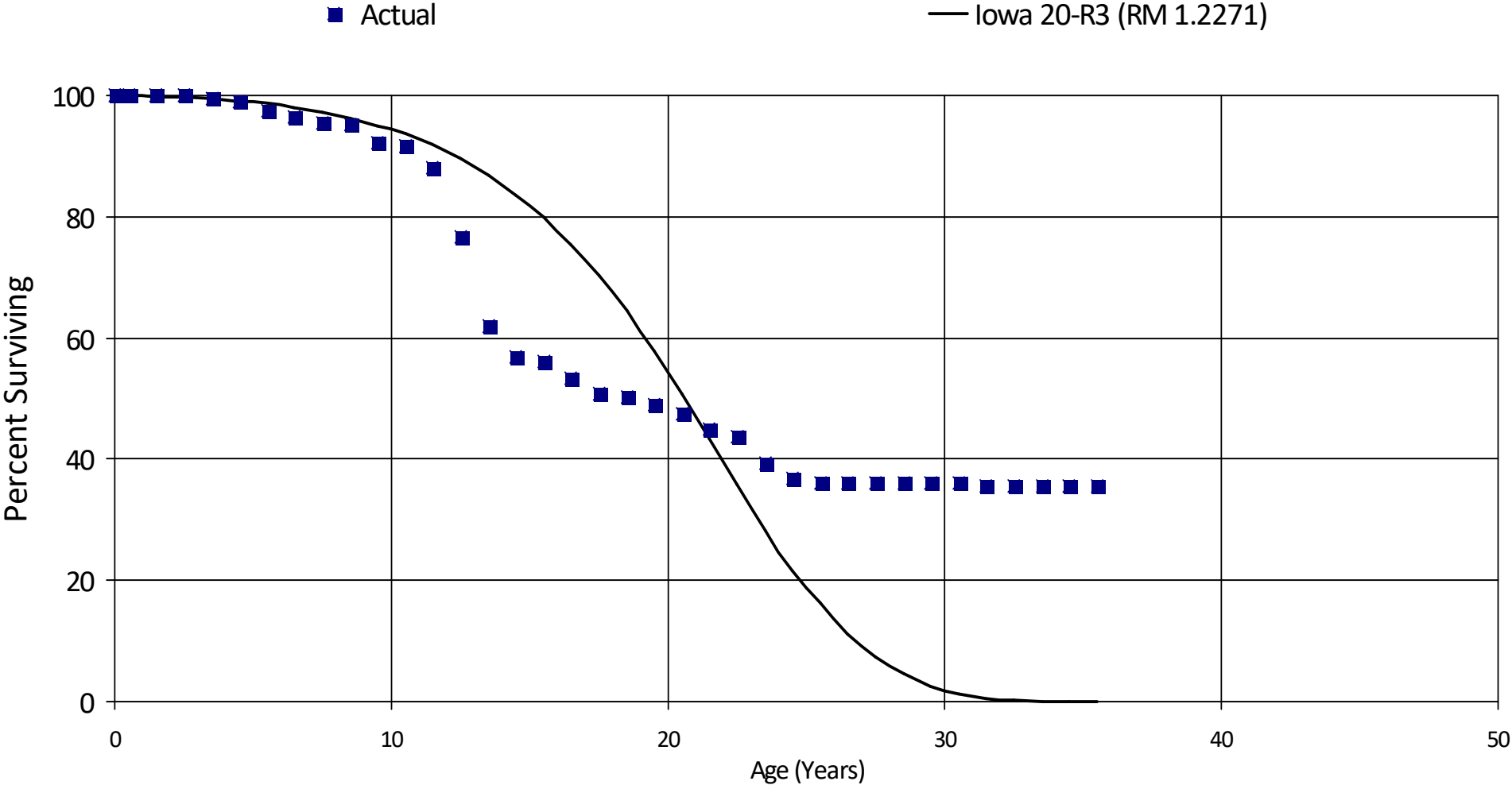
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	12,835,998	0	0.00000	1.00000	100.00
0.5	12,145,918	0	0.00000	1.00000	100.00
1.5	11,726,413	0	0.00000	1.00000	100.00
2.5	10,966,397	106,344	0.00970	0.99030	100.00
3.5	10,419,477	27,452	0.00263	0.99737	99.03
4.5	9,632,762	371,269	0.03854	0.96146	98.77
5.5	7,837,167	172,752	0.02204	0.97796	94.96
6.5	7,452,539	94,992	0.01275	0.98725	92.87
7.5	7,167,680	14,238	0.00199	0.99801	91.69
8.5	6,752,215	281,441	0.04168	0.95832	91.51
9.5	6,151,820	199,862	0.03249	0.96751	87.70
10.5	5,763,562	270,299	0.04690	0.95310	84.85
11.5	5,128,141	266,120	0.05189	0.94811	80.87
12.5	4,826,555	484,485	0.10038	0.89962	76.67
13.5	3,858,577	177,033	0.04588	0.95412	68.97
14.5	2,022,402	74,709	0.03694	0.96306	65.81
15.5	1,674,379	144,627	0.08638	0.91362	63.38
16.5	1,529,753	70,354	0.04599	0.95401	57.91
17.5	1,272,472	0	0.00000	1.00000	55.25
18.5	859,418	21,570	0.02510	0.97490	55.25
19.5	784,834	0	0.00000	1.00000	53.86
20.5	609,895	11,852	0.01943	0.98057	53.86
21.5	318,836	0	0.00000	1.00000	52.81
22.5	256,543	0	0.00000	1.00000	52.81
23.5	183,049	0	0.00000	1.00000	52.81
24.5	35,555	0	0.00000	1.00000	52.81
Totals:		2,789,399			

Toronto Hydro

Account 2109 - Substation Equipment - DC Stn Service Chargers

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2109 - Substation Equipment - DC Stn Service Chargers

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	11,054,591	0	0.00000	1.00000	100.00
0.5	10,700,649	0	0.00000	1.00000	100.00
1.5	10,304,653	0	0.00000	1.00000	100.00
2.5	9,346,518	59,217	0.00634	0.99366	100.00
3.5	8,863,005	24,811	0.00280	0.99720	99.37
4.5	8,264,975	132,442	0.01602	0.98398	99.09
5.5	7,436,517	75,992	0.01022	0.98978	97.50
6.5	7,283,645	82,784	0.01137	0.98863	96.50
7.5	6,985,938	22,814	0.00327	0.99673	95.40
8.5	6,862,201	210,038	0.03061	0.96939	95.09
9.5	6,536,147	45,673	0.00699	0.99301	92.18
10.5	6,381,138	240,302	0.03766	0.96234	91.54
11.5	6,081,254	793,666	0.13051	0.86949	88.09
12.5	5,262,875	1,007,885	0.19151	0.80849	76.59
13.5	4,254,990	349,831	0.08222	0.91778	61.92
14.5	2,549,722	38,453	0.01508	0.98492	56.83
15.5	2,511,269	125,077	0.04981	0.95019	55.97
16.5	2,386,192	111,247	0.04662	0.95338	53.18
17.5	2,176,336	20,242	0.00930	0.99070	50.70
18.5	1,832,976	45,923	0.02505	0.97495	50.23
19.5	1,787,053	57,174	0.03199	0.96801	48.97
20.5	1,603,055	85,761	0.05350	0.94650	47.40
21.5	1,263,127	36,661	0.02902	0.97098	44.86
22.5	1,226,466	118,110	0.09630	0.90370	43.56
23.5	1,029,243	66,048	0.06417	0.93583	39.37
24.5	816,098	20,271	0.02484	0.97516	36.84
25.5	702,537	0	0.00000	1.00000	35.92
26.5	514,916	0	0.00000	1.00000	35.92

Toronto Hydro

Account 2109 - Substation Equipment - DC Stn Service Chargers

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

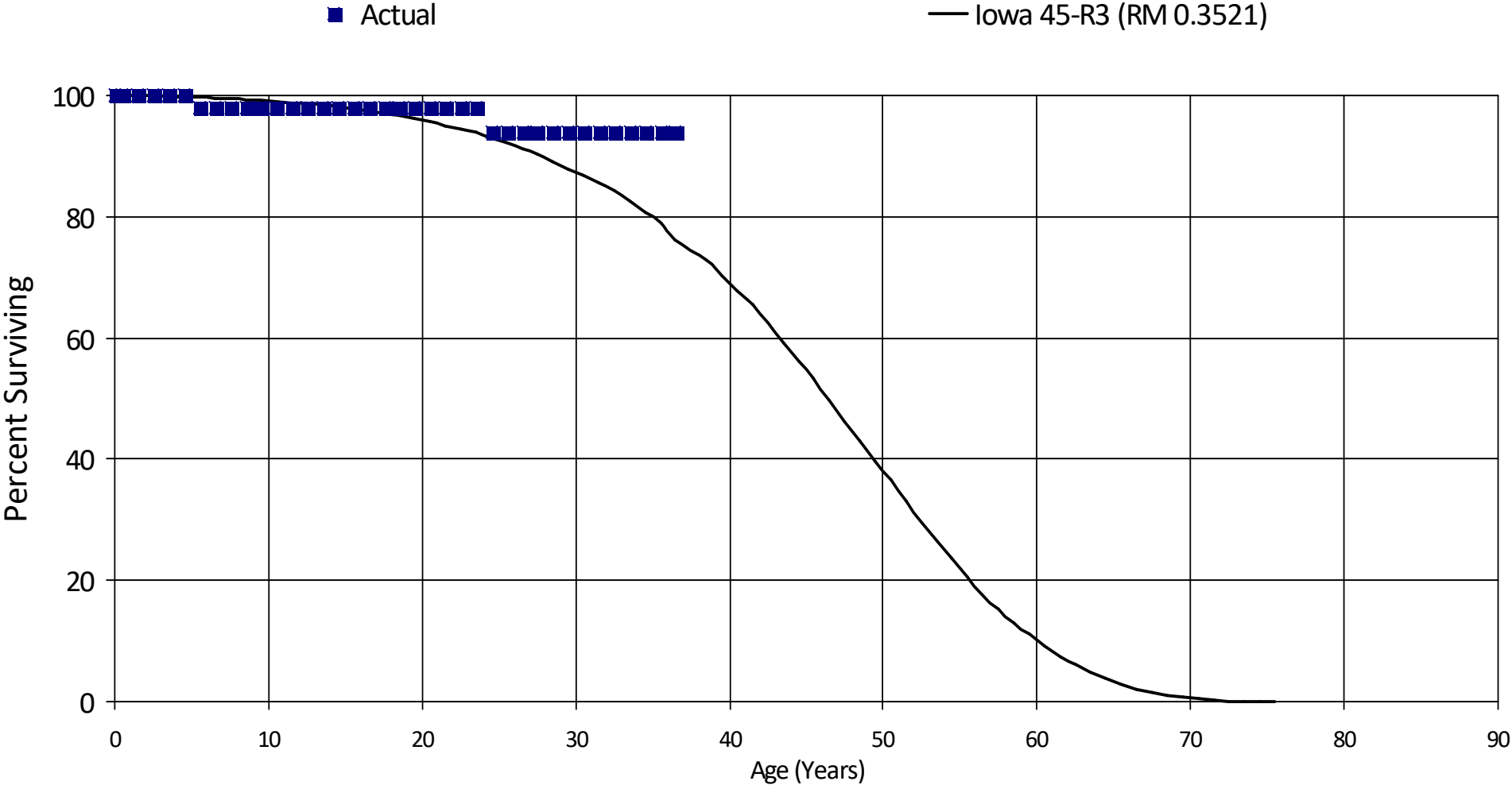
27.5	441,593	0	0.00000	1.00000	35.92
28.5	342,472	0	0.00000	1.00000	35.92
29.5	322,201	0	0.00000	1.00000	35.92
30.5	178,270	2,098	0.01177	0.98823	35.92
31.5	140,695	0	0.00000	1.00000	35.50
32.5	95,786	0	0.00000	1.00000	35.50
33.5	60,410	0	0.00000	1.00000	35.50
34.5	13,408	0	0.00000	1.00000	35.50
35.5	7,114	0	0.00000	1.00000	35.50
Totals:		3,772,520			

Toronto Hydro

Account 2111 - Substation Equipment - Outdoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2111 - Substation Equipment - Outdoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	32,382,008	0	0.00000	1.00000	100.00
0.5	30,476,046	0	0.00000	1.00000	100.00
1.5	29,725,485	0	0.00000	1.00000	100.00
2.5	26,884,896	0	0.00000	1.00000	100.00
3.5	23,072,226	0	0.00000	1.00000	100.00
4.5	19,506,596	384,628	0.01972	0.98028	100.00
5.5	18,368,893	0	0.00000	1.00000	98.03
6.5	17,312,172	0	0.00000	1.00000	98.03
7.5	16,600,995	0	0.00000	1.00000	98.03
8.5	16,434,730	0	0.00000	1.00000	98.03
9.5	15,513,311	0	0.00000	1.00000	98.03
10.5	14,421,686	0	0.00000	1.00000	98.03
11.5	14,409,672	0	0.00000	1.00000	98.03
12.5	14,254,316	0	0.00000	1.00000	98.03
13.5	12,715,804	0	0.00000	1.00000	98.03
14.5	8,711,080	0	0.00000	1.00000	98.03
15.5	7,833,965	0	0.00000	1.00000	98.03
16.5	6,899,824	0	0.00000	1.00000	98.03
17.5	6,220,021	0	0.00000	1.00000	98.03
18.5	4,982,480	0	0.00000	1.00000	98.03
19.5	4,749,902	0	0.00000	1.00000	98.03
20.5	4,203,451	0	0.00000	1.00000	98.03
21.5	3,529,520	0	0.00000	1.00000	98.03
22.5	3,177,593	0	0.00000	1.00000	98.03
23.5	2,982,808	121,602	0.04077	0.95923	98.03
24.5	2,438,672	0	0.00000	1.00000	94.03
25.5	2,215,735	0	0.00000	1.00000	94.03
26.5	1,753,786	0	0.00000	1.00000	94.03

Toronto Hydro

Account 2111 - Substation Equipment - Outdoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

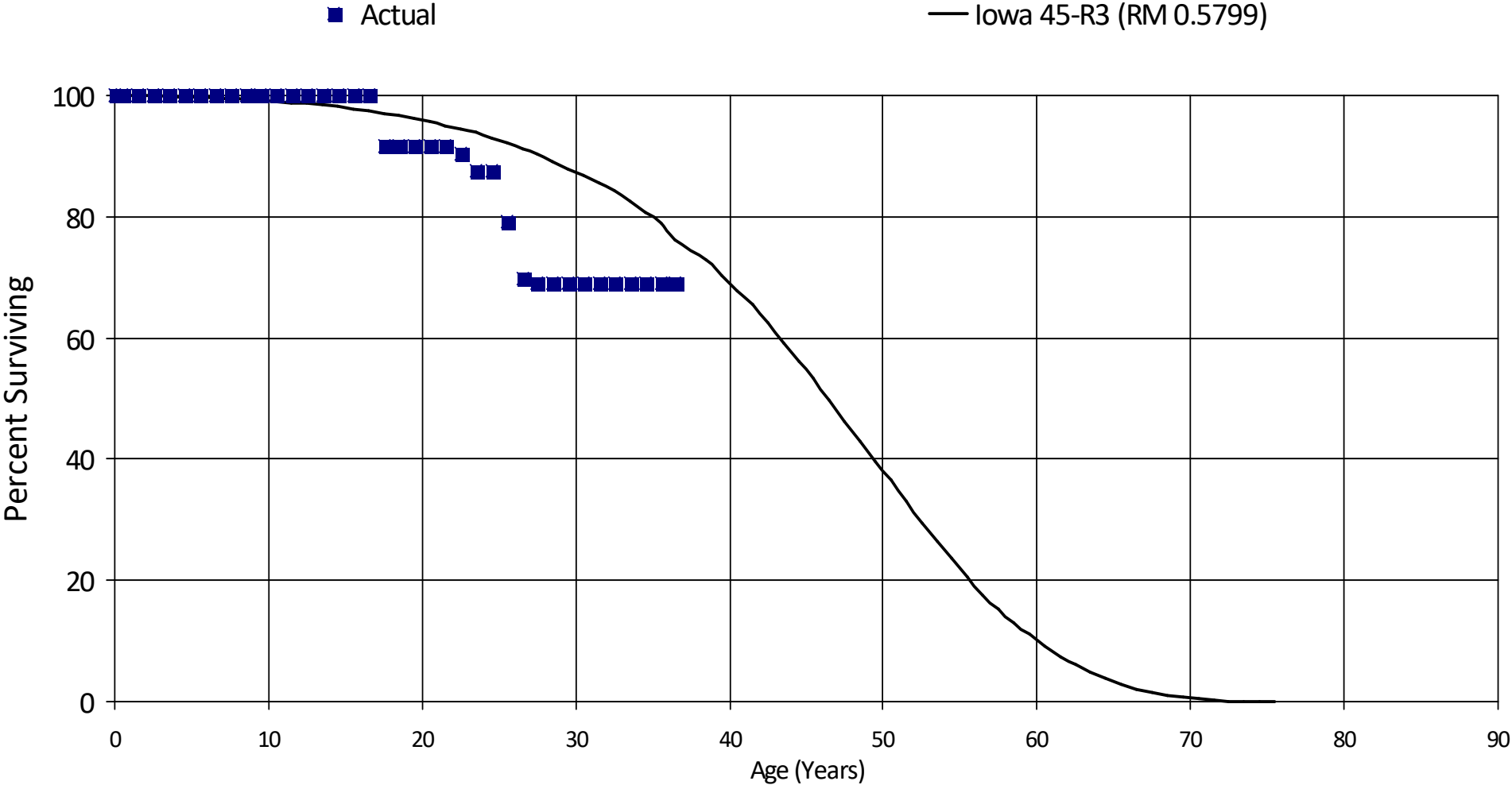
27.5	1,302,459	0	0.00000	1.00000	94.03
28.5	1,058,411	0	0.00000	1.00000	94.03
29.5	858,768	0	0.00000	1.00000	94.03
30.5	504,390	0	0.00000	1.00000	94.03
31.5	417,041	0	0.00000	1.00000	94.03
32.5	251,184	0	0.00000	1.00000	94.03
33.5	164,082	0	0.00000	1.00000	94.03
34.5	48,356	0	0.00000	1.00000	94.03
35.5	27,694	0	0.00000	1.00000	94.03
36.5	10,179	0	0.00000	1.00000	94.03
Totals:		506,230			

Toronto Hydro

Account 2113 - Substation Equipment - Indoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2113 - Substation Equipment - Indoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	22,315,084	0	0.00000	1.00000	100.00
0.5	22,315,084	0	0.00000	1.00000	100.00
1.5	22,294,843	0	0.00000	1.00000	100.00
2.5	22,294,843	0	0.00000	1.00000	100.00
3.5	22,109,860	0	0.00000	1.00000	100.00
4.5	20,630,724	0	0.00000	1.00000	100.00
5.5	19,980,218	0	0.00000	1.00000	100.00
6.5	19,610,976	0	0.00000	1.00000	100.00
7.5	19,211,927	0	0.00000	1.00000	100.00
8.5	18,899,485	0	0.00000	1.00000	100.00
9.5	18,898,664	0	0.00000	1.00000	100.00
10.5	18,898,664	0	0.00000	1.00000	100.00
11.5	16,620,231	0	0.00000	1.00000	100.00
12.5	16,620,231	0	0.00000	1.00000	100.00
13.5	14,096,423	0	0.00000	1.00000	100.00
14.5	9,649,137	0	0.00000	1.00000	100.00
15.5	8,677,570	0	0.00000	1.00000	100.00
16.5	7,642,835	632,901	0.08281	0.91719	100.00
17.5	6,256,926	0	0.00000	1.00000	91.72
18.5	5,519,021	0	0.00000	1.00000	91.72
19.5	5,261,397	0	0.00000	1.00000	91.72
20.5	4,656,102	0	0.00000	1.00000	91.72
21.5	3,909,598	60,199	0.01540	0.98460	91.72
22.5	3,459,575	101,534	0.02935	0.97065	90.31
23.5	3,243,814	0	0.00000	1.00000	87.66
24.5	2,775,779	269,393	0.09705	0.90295	87.66
25.5	2,394,139	285,250	0.11915	0.88085	79.15
26.5	1,687,494	19,627	0.01163	0.98837	69.72

Toronto Hydro

Account 2113 - Substation Equipment - Indoor Breaker

Placement Band - 1985 - 2022 Experience Band - 2018 - 2022

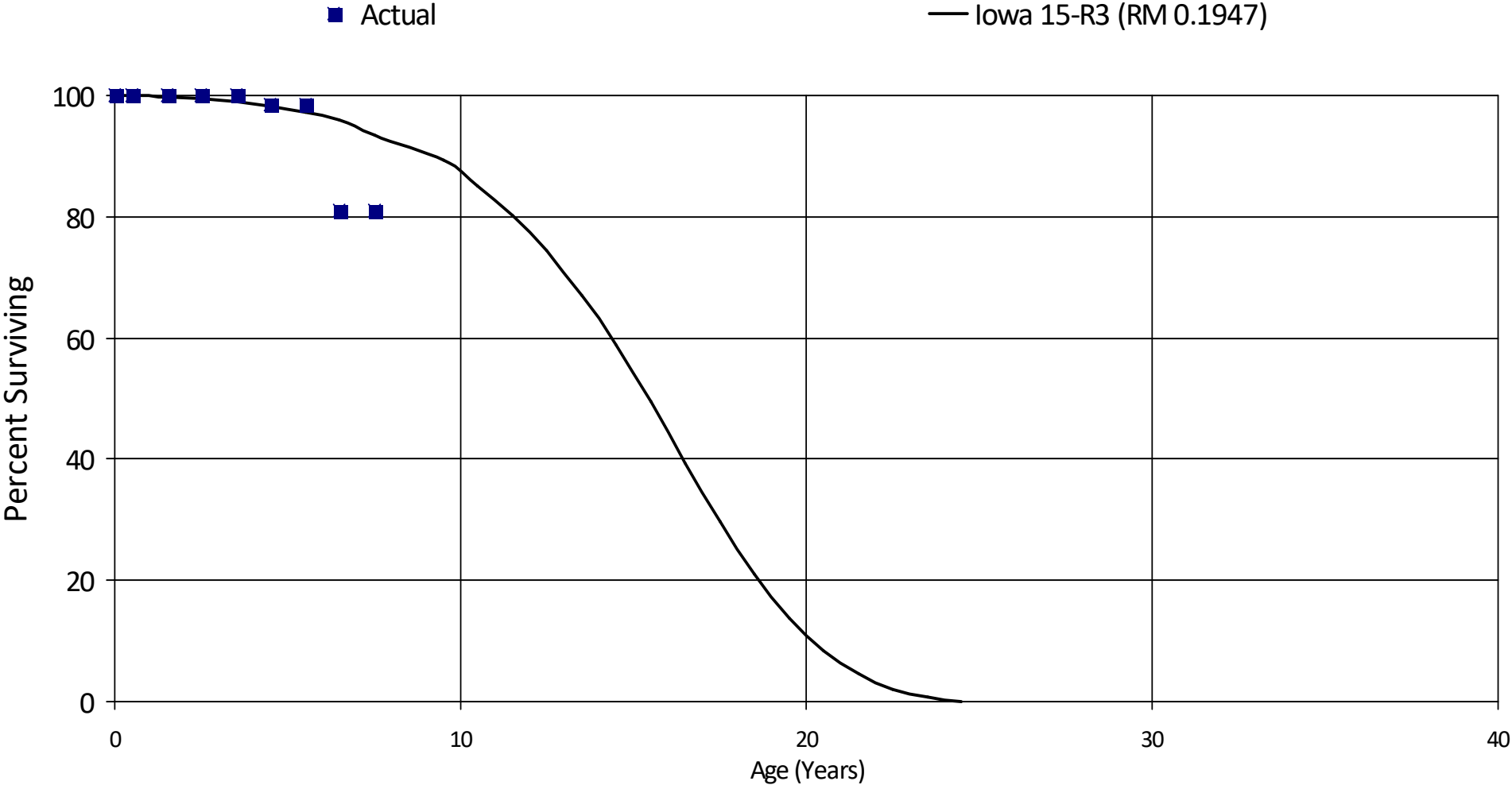
27.5	1,167,938	0	0.00000	1.00000	68.91
28.5	897,610	0	0.00000	1.00000	68.91
29.5	676,468	0	0.00000	1.00000	68.91
30.5	558,706	0	0.00000	1.00000	68.91
31.5	461,950	0	0.00000	1.00000	68.91
32.5	278,233	0	0.00000	1.00000	68.91
33.5	181,752	0	0.00000	1.00000	68.91
34.5	53,564	0	0.00000	1.00000	68.91
35.5	30,676	0	0.00000	1.00000	68.91
36.5	11,275	0	0.00000	1.00000	68.91
Totals:		1,368,904			

Toronto Hydro

Account 2115 - Substation Equipment - Station Relays

Placement Band - 2014 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2115 - Substation Equipment - Station Relays

Placement Band - 2014 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

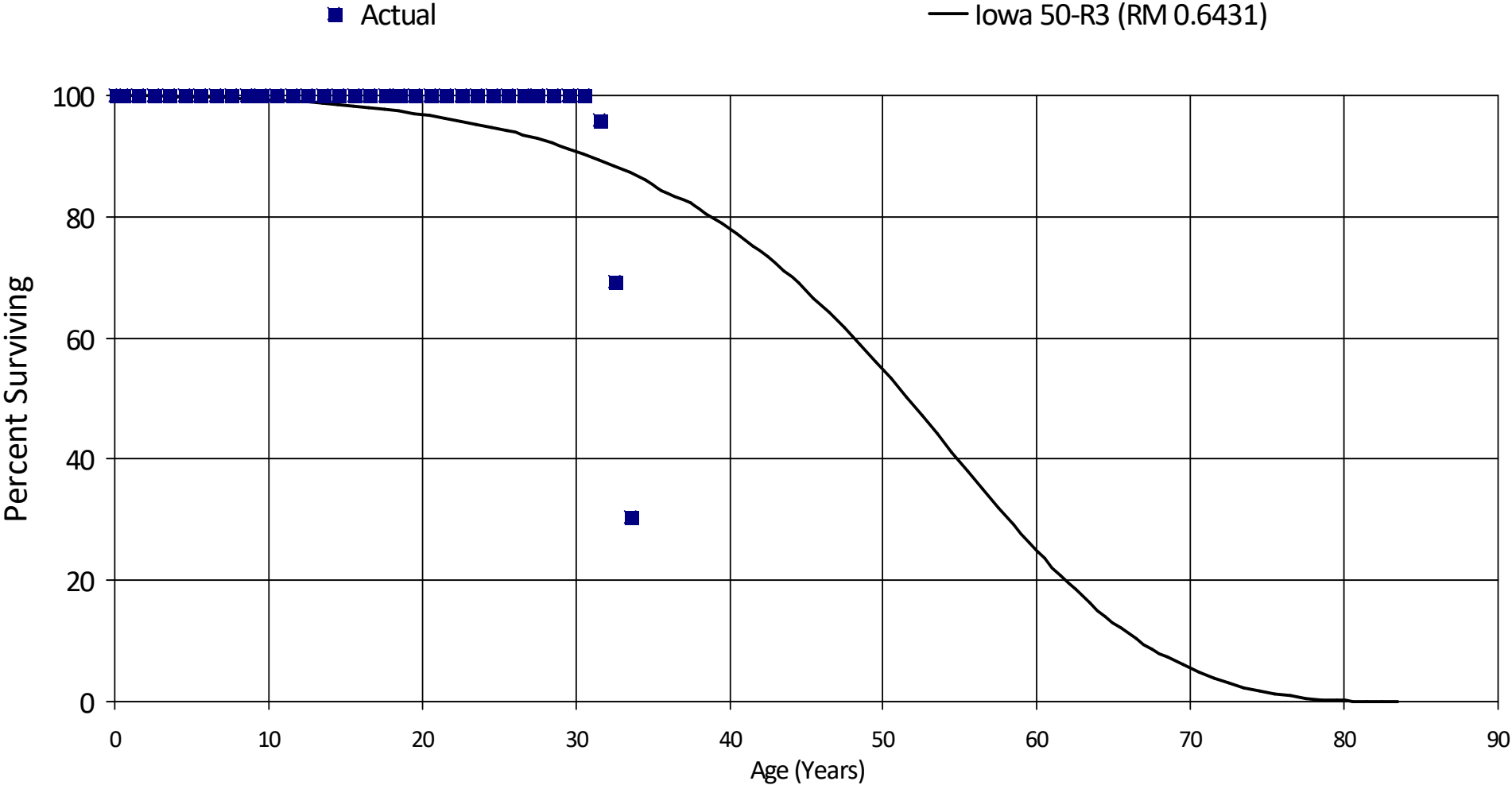
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	19,270,070	0	0.00000	1.00000	100.00
0.5	15,029,736	0	0.00000	1.00000	100.00
1.5	13,147,475	0	0.00000	1.00000	100.00
2.5	12,040,533	0	0.00000	1.00000	100.00
3.5	10,026,036	140,061	0.01397	0.98603	100.00
4.5	3,638,699	0	0.00000	1.00000	98.60
5.5	2,180,541	388,877	0.17834	0.82166	98.60
6.5	1,409,861	0	0.00000	1.00000	81.02
7.5	1,409,861	0	0.00000	1.00000	81.02
Totals:		528,938			

Toronto Hydro

Account 2117 - Substation Equipment - Switchgear Air

Placement Band - 1986 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2117 - Substation Equipment - Switchgear Air

Placement Band - 1986 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	73,809,262	0	0.00000	1.00000	100.00
0.5	70,981,358	0	0.00000	1.00000	100.00
1.5	51,683,158	0	0.00000	1.00000	100.00
2.5	49,444,421	0	0.00000	1.00000	100.00
3.5	49,444,421	0	0.00000	1.00000	100.00
4.5	35,331,572	0	0.00000	1.00000	100.00
5.5	24,087,682	0	0.00000	1.00000	100.00
6.5	21,243,014	0	0.00000	1.00000	100.00
7.5	19,840,672	0	0.00000	1.00000	100.00
8.5	16,419,022	0	0.00000	1.00000	100.00
9.5	16,413,060	0	0.00000	1.00000	100.00
10.5	16,413,060	0	0.00000	1.00000	100.00
11.5	5,005,258	0	0.00000	1.00000	100.00
12.5	5,005,258	0	0.00000	1.00000	100.00
13.5	5,005,258	0	0.00000	1.00000	100.00
14.5	2,307,062	0	0.00000	1.00000	100.00
15.5	2,307,062	0	0.00000	1.00000	100.00
16.5	2,307,062	0	0.00000	1.00000	100.00
17.5	2,307,062	0	0.00000	1.00000	100.00
18.5	1,814,429	0	0.00000	1.00000	100.00
19.5	1,814,429	0	0.00000	1.00000	100.00
20.5	1,595,172	0	0.00000	1.00000	100.00
21.5	1,595,172	0	0.00000	1.00000	100.00
22.5	1,452,506	0	0.00000	1.00000	100.00
23.5	1,373,040	0	0.00000	1.00000	100.00
24.5	1,199,385	0	0.00000	1.00000	100.00
25.5	1,056,552	0	0.00000	1.00000	100.00
26.5	863,067	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2117 - Substation Equipment - Switchgear Air

Placement Band - 1986 - 2022 Experience Band - 2018 - 2022

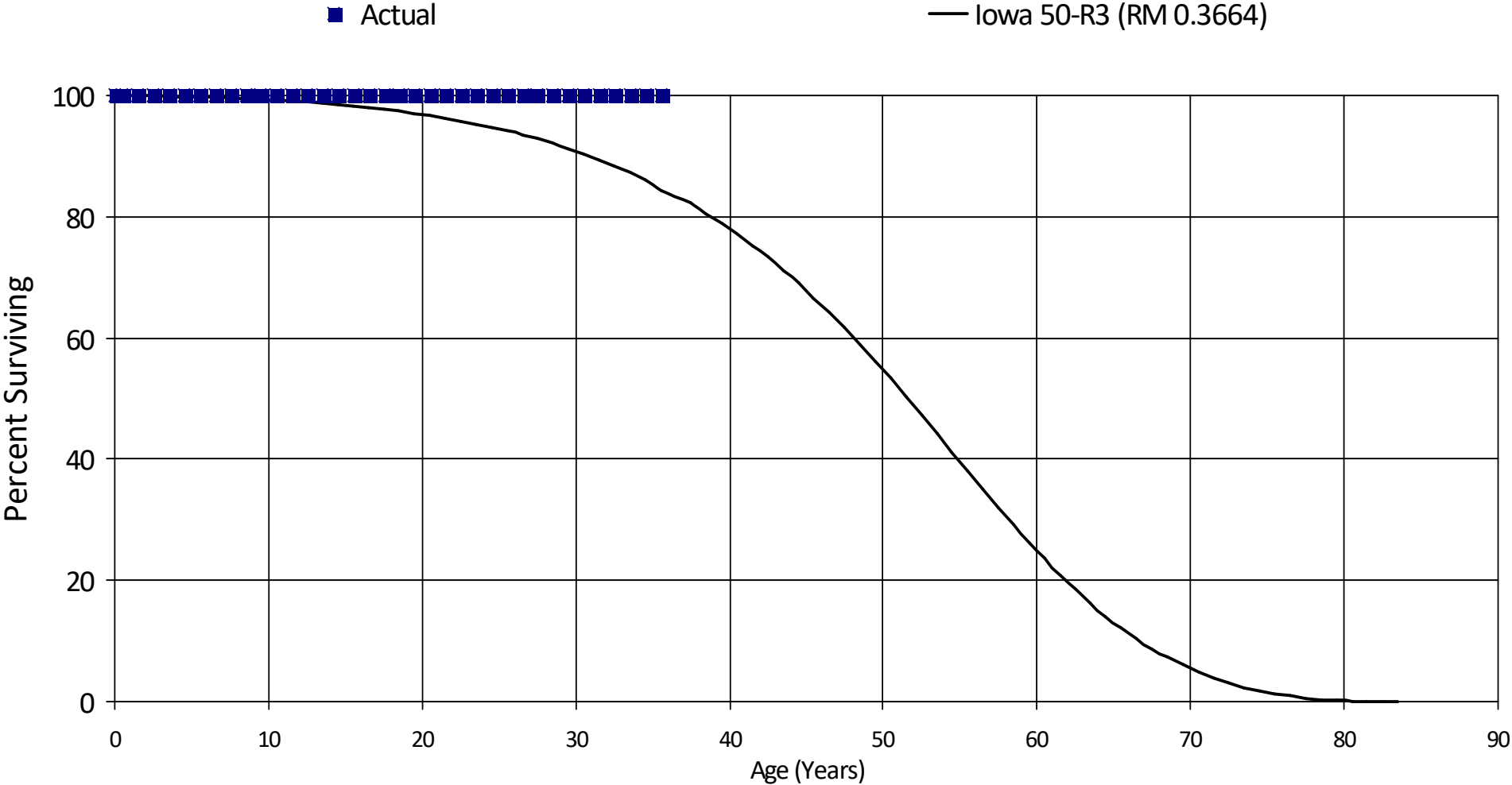
27.5	671,689	0	0.00000	1.00000	100.00
28.5	566,642	0	0.00000	1.00000	100.00
29.5	479,107	0	0.00000	1.00000	100.00
30.5	320,076	12,785	0.03994	0.96006	100.00
31.5	266,904	74,195	0.27798	0.72202	96.01
32.5	112,937	63,505	0.56230	0.43770	69.32
33.5	0	0	0.00000	0.00000	30.34
Totals:		150,485			

Toronto Hydro

Account 2119 - Substation Equipment - Switchgear GIS

Placement Band - 1986 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2119 - Substation Equipment - Switchgear GIS

Placement Band - 1986 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	43,464,897	0	0.00000	1.00000	100.00
0.5	28,497,166	0	0.00000	1.00000	100.00
1.5	28,497,166	0	0.00000	1.00000	100.00
2.5	16,915,785	0	0.00000	1.00000	100.00
3.5	16,915,785	0	0.00000	1.00000	100.00
4.5	16,915,785	0	0.00000	1.00000	100.00
5.5	6,527,928	0	0.00000	1.00000	100.00
6.5	6,527,928	0	0.00000	1.00000	100.00
7.5	6,527,928	0	0.00000	1.00000	100.00
8.5	6,527,928	0	0.00000	1.00000	100.00
9.5	6,527,928	0	0.00000	1.00000	100.00
10.5	6,527,928	0	0.00000	1.00000	100.00
11.5	6,528,679	0	0.00000	1.00000	100.00
12.5	6,528,679	0	0.00000	1.00000	100.00
13.5	6,528,679	0	0.00000	1.00000	100.00
14.5	3,734,988	0	0.00000	1.00000	100.00
15.5	3,734,988	0	0.00000	1.00000	100.00
16.5	3,734,988	0	0.00000	1.00000	100.00
17.5	3,734,988	0	0.00000	1.00000	100.00
18.5	2,913,933	0	0.00000	1.00000	100.00
19.5	2,913,933	0	0.00000	1.00000	100.00
20.5	2,548,505	0	0.00000	1.00000	100.00
21.5	2,548,505	0	0.00000	1.00000	100.00
22.5	2,310,728	0	0.00000	1.00000	100.00
23.5	2,178,285	0	0.00000	1.00000	100.00
24.5	1,888,859	0	0.00000	1.00000	100.00
25.5	1,650,804	0	0.00000	1.00000	100.00
26.5	1,328,330	0	0.00000	1.00000	100.00

Toronto Hydro

Account 2119 - Substation Equipment - Switchgear GIS

Placement Band - 1986 - 2022 Experience Band - 2022 - 2022

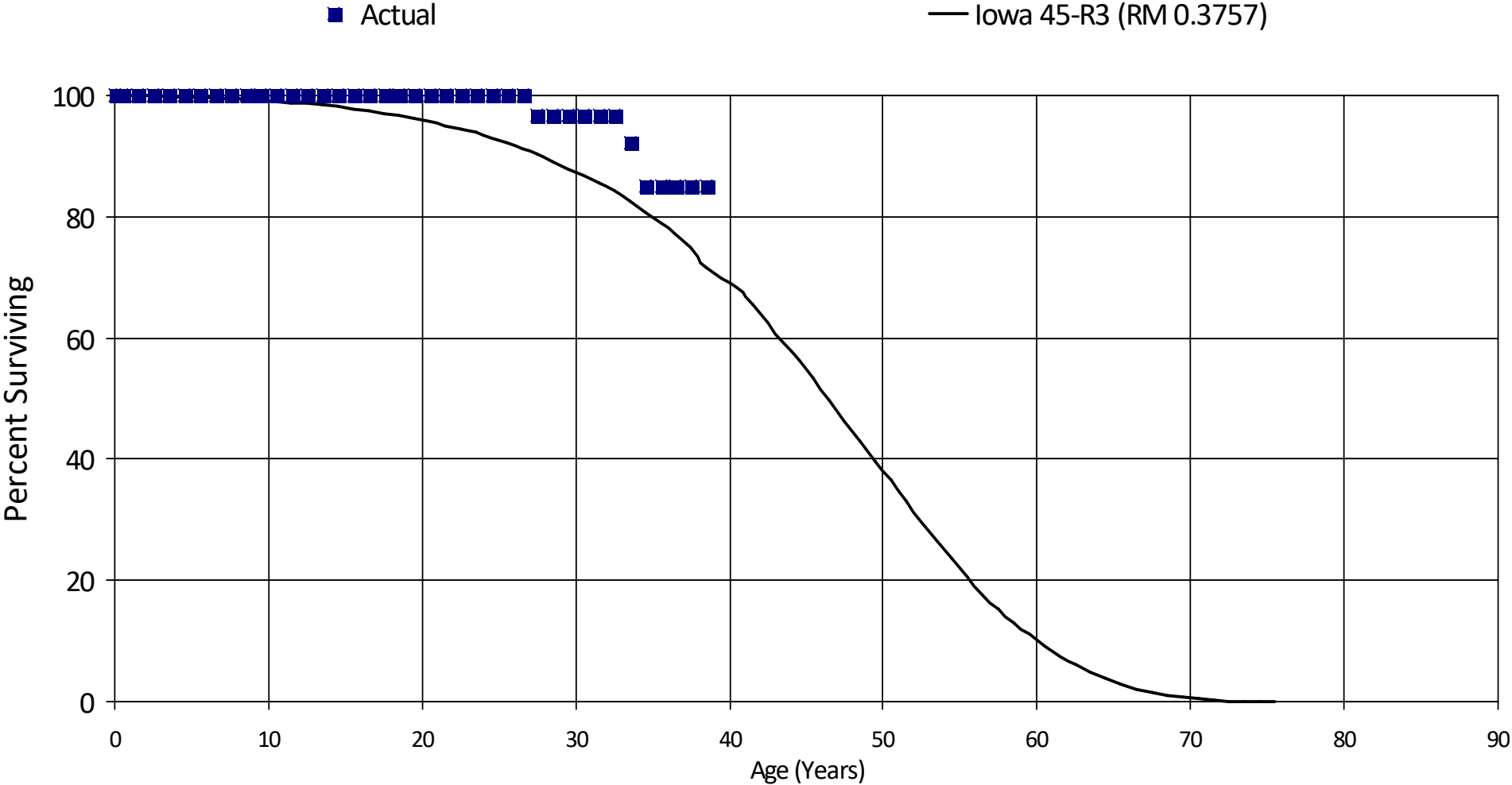
27.5	1,009,366	0	0.00000	1.00000	100.00
28.5	834,289	0	0.00000	1.00000	100.00
29.5	688,396	0	0.00000	1.00000	100.00
30.5	423,345	0	0.00000	1.00000	100.00
31.5	356,033	0	0.00000	1.00000	100.00
32.5	223,081	0	0.00000	1.00000	100.00
33.5	149,379	0	0.00000	1.00000	100.00
34.5	43,538	0	0.00000	1.00000	100.00
35.5	22,230	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2123 - Substation Equipment - Power Transformers

Placement Band - 1983 - 2022 Experience Band - 2017 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2123 - Substation Equipment - Power Transformers

Placement Band - 1983 - 2022 Experience Band - 2017 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	43,277,836	0	0.00000	1.00000	100.00
0.5	43,277,836	0	0.00000	1.00000	100.00
1.5	43,277,836	0	0.00000	1.00000	100.00
2.5	43,277,836	0	0.00000	1.00000	100.00
3.5	43,277,836	0	0.00000	1.00000	100.00
4.5	42,358,615	0	0.00000	1.00000	100.00
5.5	41,101,553	0	0.00000	1.00000	100.00
6.5	41,101,553	0	0.00000	1.00000	100.00
7.5	39,006,244	0	0.00000	1.00000	100.00
8.5	36,679,905	0	0.00000	1.00000	100.00
9.5	36,117,587	0	0.00000	1.00000	100.00
10.5	32,226,980	0	0.00000	1.00000	100.00
11.5	31,860,696	0	0.00000	1.00000	100.00
12.5	31,860,696	0	0.00000	1.00000	100.00
13.5	27,294,422	0	0.00000	1.00000	100.00
14.5	16,757,829	0	0.00000	1.00000	100.00
15.5	14,493,006	0	0.00000	1.00000	100.00
16.5	12,551,354	0	0.00000	1.00000	100.00
17.5	11,137,024	0	0.00000	1.00000	100.00
18.5	11,137,024	0	0.00000	1.00000	100.00
19.5	10,652,138	0	0.00000	1.00000	100.00
20.5	10,652,138	0	0.00000	1.00000	100.00
21.5	8,900,365	0	0.00000	1.00000	100.00
22.5	8,207,159	0	0.00000	1.00000	100.00
23.5	7,798,322	0	0.00000	1.00000	100.00
24.5	6,909,238	0	0.00000	1.00000	100.00
25.5	6,005,206	0	0.00000	1.00000	100.00
26.5	4,788,647	154,294	0.03222	0.96778	100.00

Toronto Hydro

Account 2123 - Substation Equipment - Power Transformers

Placement Band - 1983 - 2022 Experience Band - 2017 - 2022

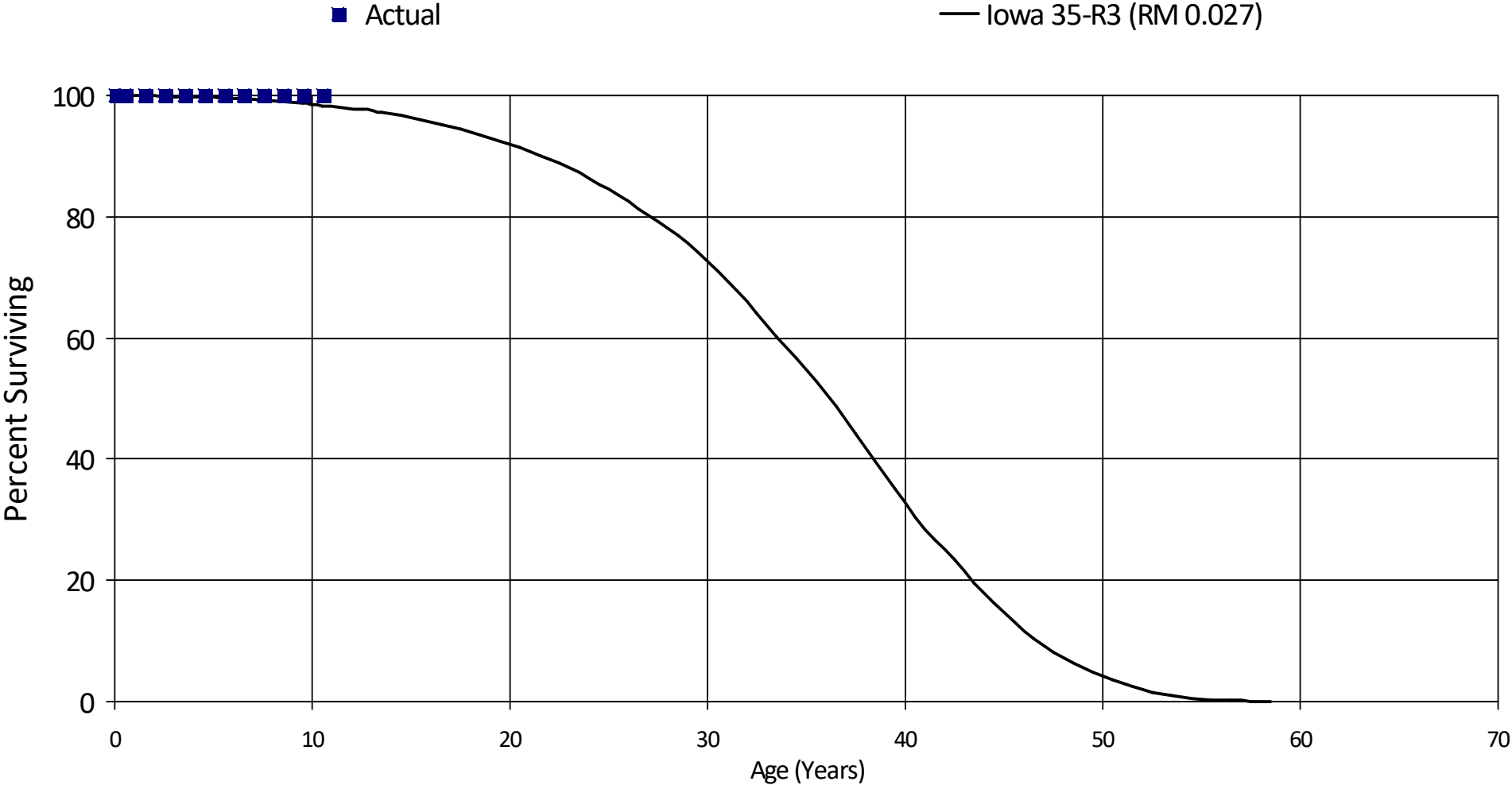
27.5	3,440,365	0	0.00000	1.00000	96.78
28.5	2,791,044	0	0.00000	1.00000	96.78
29.5	2,255,977	0	0.00000	1.00000	96.78
30.5	1,297,072	0	0.00000	1.00000	96.78
31.5	1,057,644	0	0.00000	1.00000	96.78
32.5	749,055	35,508	0.04740	0.95260	96.78
33.5	512,805	40,447	0.07887	0.92113	92.19
34.5	194,533	0	0.00000	1.00000	84.92
35.5	128,457	0	0.00000	1.00000	84.92
36.5	64,447	0	0.00000	1.00000	84.92
37.5	25,665	0	0.00000	1.00000	84.92
38.5	25,665	0	0.00000	1.00000	84.92
Totals:		230,249			

Toronto Hydro

Account 2125 - Substation Equipment - Grounding System

Placement Band - 2011 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2125 - Substation Equipment - Grounding System

Placement Band - 2011 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

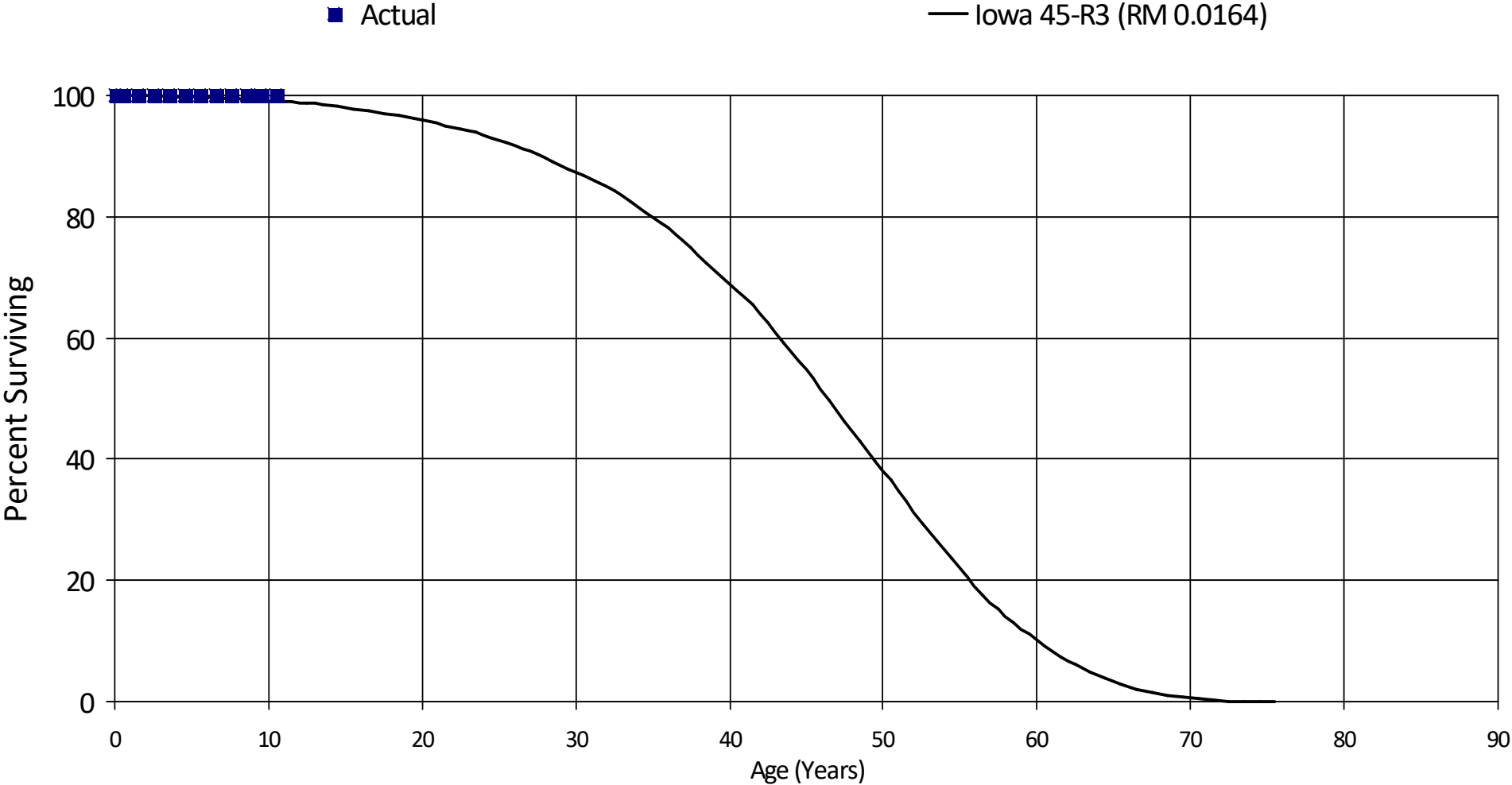
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,426,374	0	0.00000	1.00000	100.00
0.5	1,426,374	0	0.00000	1.00000	100.00
1.5	1,426,374	0	0.00000	1.00000	100.00
2.5	1,426,374	0	0.00000	1.00000	100.00
3.5	1,426,374	0	0.00000	1.00000	100.00
4.5	1,426,374	0	0.00000	1.00000	100.00
5.5	96,745	0	0.00000	1.00000	100.00
6.5	96,745	0	0.00000	1.00000	100.00
7.5	96,745	0	0.00000	1.00000	100.00
8.5	96,745	0	0.00000	1.00000	100.00
9.5	96,695	0	0.00000	1.00000	100.00
10.5	96,695	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 2127 - Substation Equipment - Grounding Transformer

Placement Band - 2011 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 2127 - Substation Equipment - Grounding Transformer

Placement Band - 2011 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

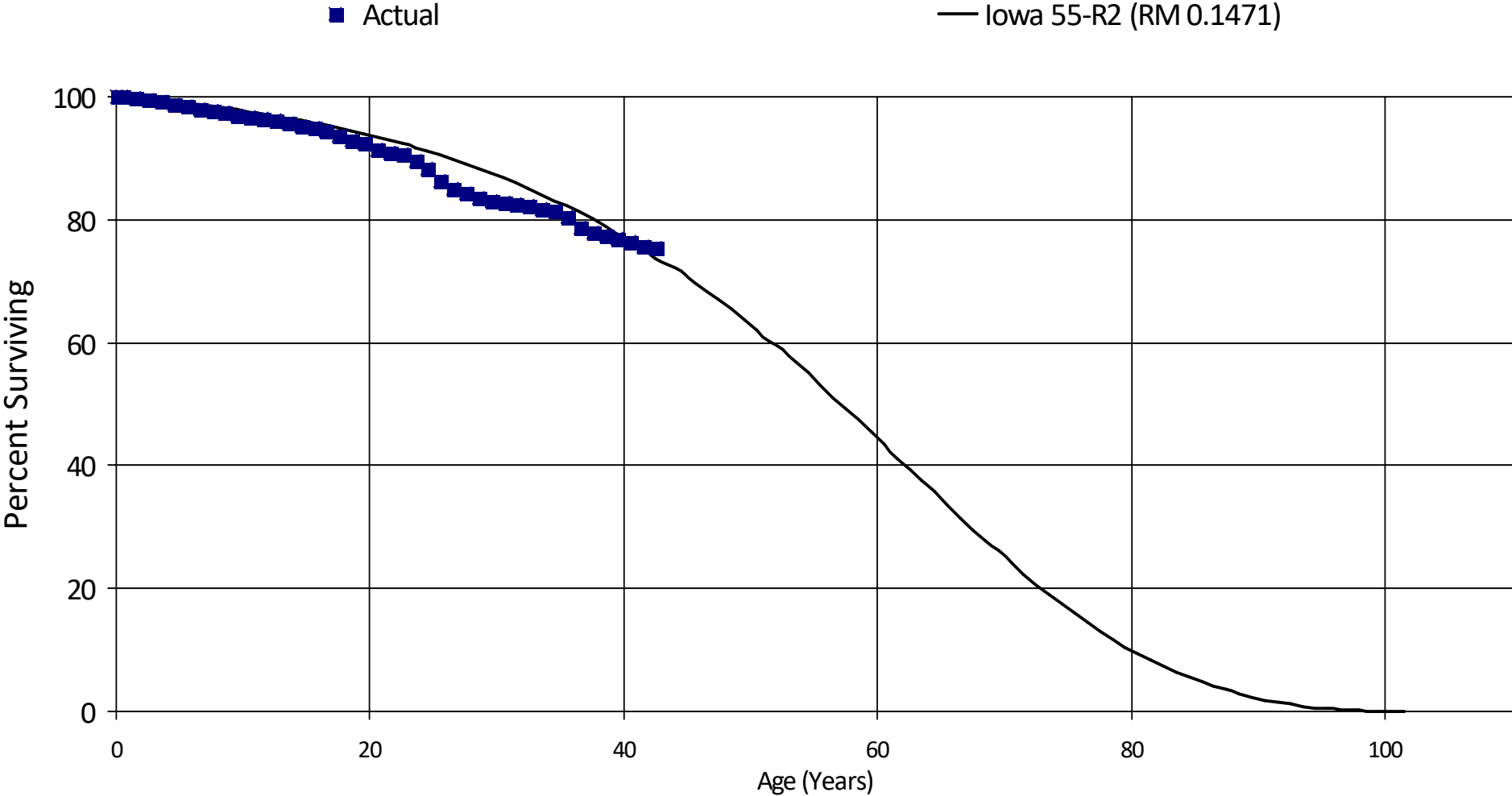
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	410,715	0	0.00000	1.00000	100.00
0.5	410,715	0	0.00000	1.00000	100.00
1.5	410,715	0	0.00000	1.00000	100.00
2.5	410,715	0	0.00000	1.00000	100.00
3.5	410,715	0	0.00000	1.00000	100.00
4.5	410,715	0	0.00000	1.00000	100.00
5.5	410,715	0	0.00000	1.00000	100.00
6.5	410,715	0	0.00000	1.00000	100.00
7.5	410,715	0	0.00000	1.00000	100.00
8.5	410,715	0	0.00000	1.00000	100.00
9.5	410,481	0	0.00000	1.00000	100.00
10.5	410,481	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3011 - O/H - Poles Concrete legacy

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3011 - O/H - Poles Concrete legacy

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	57,269,274	27,419	0.00048	0.99952	100.00
0.5	56,240,506	90,930	0.00162	0.99838	99.95
1.5	54,507,545	179,799	0.00330	0.99670	99.79
2.5	53,464,453	173,984	0.00325	0.99675	99.46
3.5	51,442,071	186,481	0.00363	0.99637	99.14
4.5	50,857,488	211,875	0.00417	0.99583	98.78
5.5	49,713,240	151,961	0.00306	0.99694	98.37
6.5	48,736,250	125,723	0.00258	0.99742	98.07
7.5	47,309,863	174,066	0.00368	0.99632	97.82
8.5	46,162,438	251,645	0.00545	0.99455	97.46
9.5	43,995,344	120,619	0.00274	0.99726	96.93
10.5	43,368,615	144,952	0.00334	0.99666	96.66
11.5	41,913,701	109,123	0.00260	0.99740	96.34
12.5	40,639,803	133,809	0.00329	0.99671	96.09
13.5	38,351,999	236,797	0.00617	0.99383	95.77
14.5	35,120,720	129,871	0.00370	0.99630	95.18
15.5	31,764,995	152,972	0.00482	0.99518	94.83
16.5	30,170,760	236,839	0.00785	0.99215	94.37
17.5	28,961,178	261,341	0.00902	0.99098	93.63
18.5	26,765,894	142,895	0.00534	0.99466	92.79
19.5	22,035,550	220,429	0.01000	0.99000	92.29
20.5	21,199,499	103,465	0.00488	0.99512	91.37
21.5	17,600,780	77,469	0.00440	0.99560	90.92
22.5	12,070,067	112,094	0.00929	0.99071	90.52
23.5	7,254,275	112,435	0.01550	0.98450	89.68
24.5	6,058,654	133,756	0.02208	0.97792	88.29
25.5	4,546,204	69,830	0.01536	0.98464	86.34
26.5	3,898,661	36,554	0.00938	0.99062	85.01

Toronto Hydro

Account 3011 - O/H - Poles Concrete legacy

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

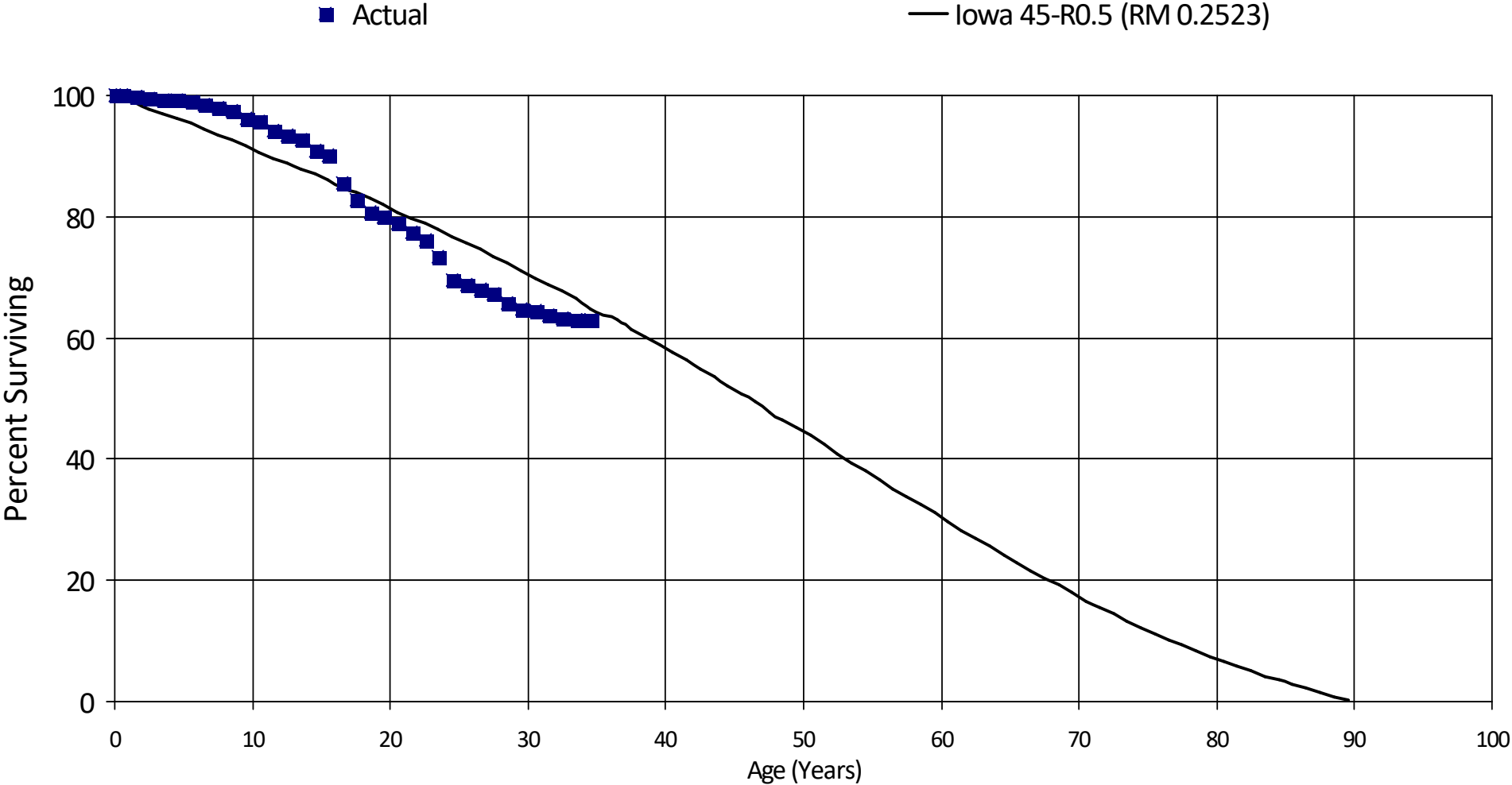
27.5	3,011,278	25,382	0.00843	0.99157	84.21
28.5	2,383,148	16,630	0.00698	0.99302	83.50
29.5	1,679,999	3,017	0.00180	0.99820	82.92
30.5	1,210,834	4,312	0.00356	0.99644	82.77
31.5	898,982	3,886	0.00432	0.99568	82.48
32.5	671,181	2,739	0.00408	0.99592	82.12
33.5	501,658	2,595	0.00517	0.99483	81.78
34.5	466,391	4,707	0.01009	0.98991	81.36
35.5	441,647	10,870	0.02461	0.97539	80.54
36.5	430,777	4,032	0.00936	0.99064	78.56
37.5	426,746	2,629	0.00616	0.99384	77.82
38.5	424,116	2,444	0.00576	0.99424	77.34
39.5	421,672	2,366	0.00561	0.99439	76.89
40.5	419,306	4,640	0.01107	0.98893	76.46
41.5	414,666	1,594	0.00384	0.99616	75.61
42.5	413,073	356	0.00086	0.99914	75.32
Totals:		4,201,332			

Toronto Hydro

Account 3013 - O/H - Poles Wood

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3013 - O/H - Poles Wood

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	429,193,473	308,943	0.00072	0.99928	100.00
0.5	401,952,850	555,937	0.00138	0.99862	99.93
1.5	371,741,385	963,551	0.00259	0.99741	99.79
2.5	341,080,556	811,331	0.00238	0.99762	99.53
3.5	313,920,420	430,496	0.00137	0.99863	99.29
4.5	294,889,531	535,951	0.00182	0.99818	99.15
5.5	271,319,860	1,531,761	0.00565	0.99435	98.97
6.5	240,134,099	1,239,132	0.00516	0.99484	98.41
7.5	202,368,642	767,467	0.00379	0.99621	97.90
8.5	174,679,907	2,192,692	0.01255	0.98745	97.53
9.5	145,911,350	1,021,823	0.00700	0.99300	96.31
10.5	137,318,954	2,087,308	0.01520	0.98480	95.64
11.5	113,278,556	1,001,401	0.00884	0.99116	94.19
12.5	99,847,816	767,019	0.00768	0.99232	93.36
13.5	92,613,198	1,894,981	0.02046	0.97954	92.64
14.5	84,356,224	693,054	0.00822	0.99178	90.74
15.5	76,373,613	3,835,154	0.05022	0.94978	89.99
16.5	70,919,818	2,220,231	0.03131	0.96869	85.47
17.5	66,047,093	1,658,453	0.02511	0.97489	82.79
18.5	61,042,705	607,352	0.00995	0.99005	80.71
19.5	48,711,897	535,110	0.01099	0.98901	79.91
20.5	48,121,433	986,992	0.02051	0.97949	79.03
21.5	38,274,731	676,858	0.01768	0.98232	77.41
22.5	25,627,342	905,957	0.03535	0.96465	76.04
23.5	15,617,489	809,882	0.05186	0.94814	73.35
24.5	12,611,334	128,601	0.01020	0.98980	69.55
25.5	9,936,672	135,346	0.01362	0.98638	68.84
26.5	9,573,995	86,461	0.00903	0.99097	67.90

Toronto Hydro

Account 3013 - O/H - Poles Wood

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

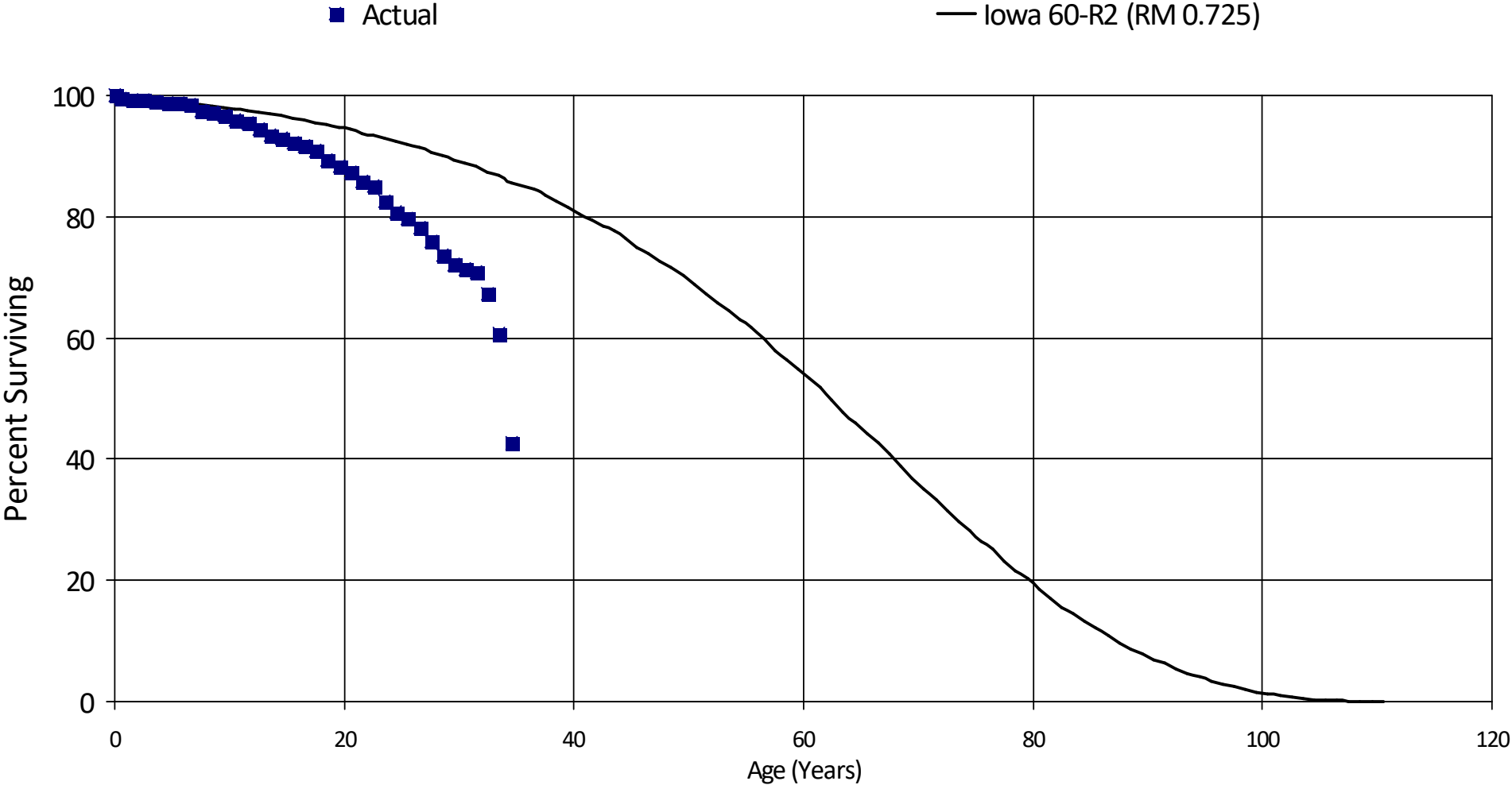
27.5	7,222,548	176,439	0.02443	0.97557	67.29
28.5	5,426,296	69,300	0.01277	0.98723	65.65
29.5	3,582,927	16,037	0.00448	0.99552	64.81
30.5	2,238,886	28,936	0.01292	0.98708	64.52
31.5	1,047,043	7,829	0.00748	0.99252	63.69
32.5	447,864	2,081	0.00465	0.99535	63.21
33.5	12	0	0.00000	1.00000	62.92
34.5	12	0	0.00000	1.00000	62.92
Totals:		29,689,866			

Toronto Hydro

Account 3051 - O/H - Conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3051 - O/H - Conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	148,837,427	667,147	0.00448	0.99552	100.00
0.5	136,324,407	284,088	0.00208	0.99792	99.55
1.5	125,238,304	110,382	0.00088	0.99912	99.34
2.5	117,562,636	256,308	0.00218	0.99782	99.25
3.5	110,816,122	196,693	0.00177	0.99823	99.03
4.5	102,677,671	138,060	0.00134	0.99866	98.85
5.5	91,526,976	148,497	0.00162	0.99838	98.72
6.5	77,159,979	810,732	0.01051	0.98949	98.56
7.5	62,699,387	237,077	0.00378	0.99622	97.52
8.5	51,434,211	267,688	0.00520	0.99480	97.15
9.5	42,363,940	268,116	0.00633	0.99367	96.64
10.5	40,024,372	296,998	0.00742	0.99258	96.03
11.5	32,458,668	308,974	0.00952	0.99048	95.32
12.5	29,176,332	282,276	0.00967	0.99033	94.41
13.5	26,579,259	202,234	0.00761	0.99239	93.50
14.5	23,876,066	181,870	0.00762	0.99238	92.79
15.5	21,528,910	118,147	0.00549	0.99451	92.08
16.5	19,599,301	129,697	0.00662	0.99338	91.57
17.5	18,277,951	311,288	0.01703	0.98297	90.96
18.5	16,675,916	188,235	0.01129	0.98871	89.41
19.5	10,785,183	127,329	0.01181	0.98819	88.40
20.5	10,705,251	182,894	0.01708	0.98292	87.36
21.5	10,343,888	104,582	0.01011	0.98989	85.87
22.5	10,239,306	298,712	0.02917	0.97083	85.00
23.5	9,940,594	221,636	0.02230	0.97770	82.52
24.5	8,437,279	107,365	0.01273	0.98727	80.68
25.5	7,527,186	143,785	0.01910	0.98090	79.65
26.5	6,407,854	177,178	0.02765	0.97235	78.13

Toronto Hydro

Account 3051 - O/H - Conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

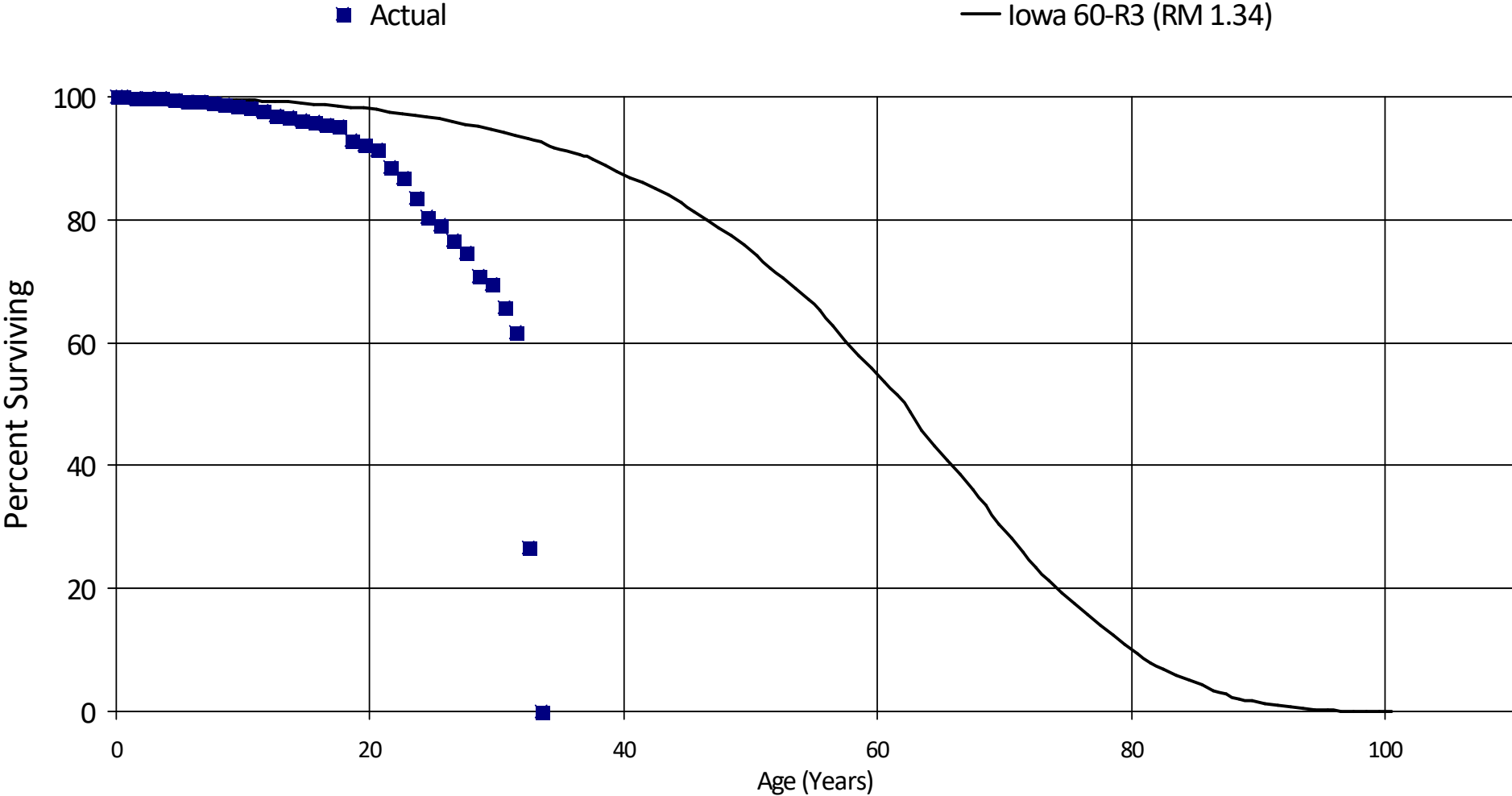
27.5	5,414,350	163,426	0.03018	0.96982	75.97
28.5	4,748,255	111,017	0.02338	0.97662	73.68
29.5	1,981,220	19,251	0.00972	0.99028	71.96
30.5	1,219,449	9,823	0.00806	0.99194	71.26
31.5	708,045	35,544	0.05020	0.94980	70.69
32.5	326,278	30,898	0.09470	0.90530	67.14
33.5	125,310	37,399	0.29845	0.70155	60.78
34.5	0	0	0.00000	0.00000	42.64
Totals:		7,175,346			

Toronto Hydro

Account 3053 - O/H - Secondary conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3053 - O/H - Secondary conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	259,943,478	130,868	0.00050	0.99950	100.00
0.5	243,707,788	187,923	0.00077	0.99923	99.95
1.5	226,498,659	209,116	0.00092	0.99908	99.87
2.5	213,175,690	184,648	0.00087	0.99913	99.78
3.5	199,777,824	485,628	0.00243	0.99757	99.69
4.5	178,775,985	242,062	0.00135	0.99865	99.45
5.5	157,892,264	175,595	0.00111	0.99889	99.32
6.5	141,375,872	297,085	0.00210	0.99790	99.21
7.5	120,677,254	293,637	0.00243	0.99757	99.00
8.5	101,655,809	280,339	0.00276	0.99724	98.76
9.5	86,491,898	224,923	0.00260	0.99740	98.49
10.5	82,445,257	368,730	0.00447	0.99553	98.23
11.5	67,418,275	496,961	0.00737	0.99263	97.79
12.5	54,105,886	195,306	0.00361	0.99639	97.07
13.5	48,519,833	316,207	0.00652	0.99348	96.72
14.5	43,530,810	123,042	0.00283	0.99717	96.09
15.5	39,491,209	133,656	0.00338	0.99662	95.82
16.5	36,208,515	162,601	0.00449	0.99551	95.50
17.5	33,497,756	741,339	0.02213	0.97787	95.07
18.5	29,952,681	234,047	0.00781	0.99219	92.97
19.5	19,564,506	196,540	0.01005	0.98995	92.24
20.5	19,450,911	565,052	0.02905	0.97095	91.31
21.5	18,897,536	379,334	0.02007	0.97993	88.66
22.5	18,518,202	728,767	0.03935	0.96065	86.88
23.5	17,789,435	626,952	0.03524	0.96476	83.46
24.5	15,079,380	267,136	0.01772	0.98228	80.52
25.5	13,462,597	424,882	0.03156	0.96844	79.09
26.5	11,465,013	297,353	0.02594	0.97406	76.59

Toronto Hydro

Account 3053 - O/H - Secondary conductors

Placement Band - 1987 - 2022 Experience Band - 2014 - 2022

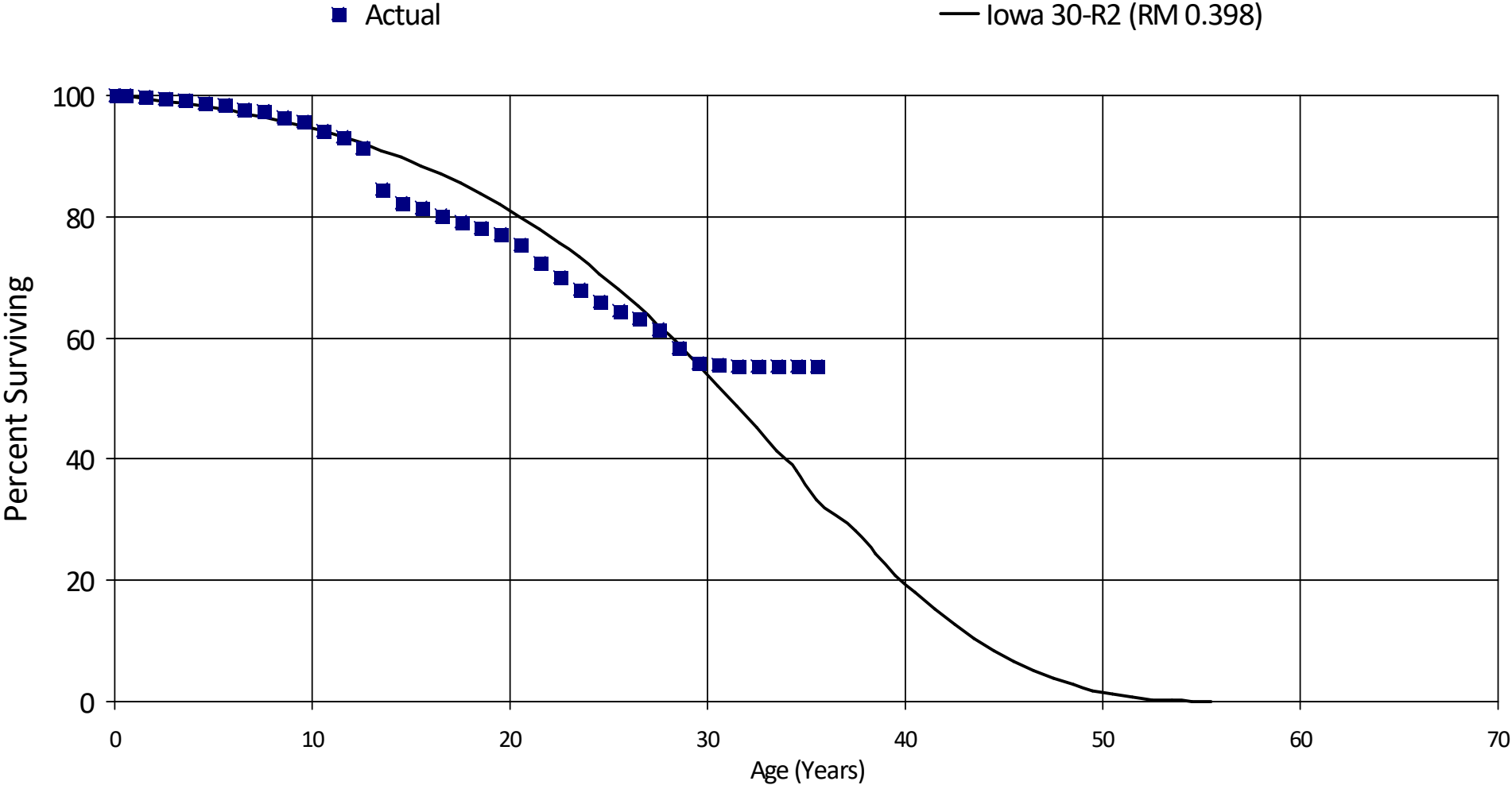
27.5	9,807,346	487,822	0.04974	0.95026	74.60
28.5	8,532,173	169,416	0.01986	0.98014	70.89
29.5	3,429,201	186,796	0.05447	0.94553	69.48
30.5	2,098,240	128,509	0.06125	0.93875	65.70
31.5	1,209,582	686,463	0.56752	0.43248	61.68
32.5	1,345	1,345	1.00004	-0.00004	26.68
33.5	0	0	0.00000	0.00000	0.00
Totals:		10,630,080			

Toronto Hydro

Account 3057 - O/H - Switches

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3057 - O/H - Switches

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	160,726,808	88,986	0.00055	0.99945	100.00
0.5	144,884,017	224,454	0.00155	0.99845	99.94
1.5	129,749,692	387,519	0.00299	0.99701	99.79
2.5	118,590,248	419,255	0.00354	0.99646	99.49
3.5	109,681,181	377,178	0.00344	0.99656	99.14
4.5	99,278,027	399,363	0.00402	0.99598	98.80
5.5	90,354,891	637,526	0.00706	0.99294	98.40
6.5	76,534,059	276,613	0.00361	0.99639	97.71
7.5	65,395,883	647,533	0.00990	0.99010	97.36
8.5	55,201,692	428,589	0.00776	0.99224	96.40
9.5	38,741,528	653,442	0.01687	0.98313	95.65
10.5	32,230,278	327,928	0.01017	0.98983	94.04
11.5	22,702,952	427,534	0.01883	0.98117	93.08
12.5	11,605,004	857,104	0.07386	0.92614	91.33
13.5	9,189,355	250,321	0.02724	0.97276	84.58
14.5	8,016,850	67,996	0.00848	0.99152	82.28
15.5	7,252,139	123,684	0.01705	0.98295	81.58
16.5	6,534,213	83,639	0.01280	0.98720	80.19
17.5	6,128,695	82,673	0.01349	0.98651	79.16
18.5	5,784,190	75,523	0.01306	0.98694	78.09
19.5	4,291,297	97,976	0.02283	0.97717	77.07
20.5	4,211,095	163,949	0.03893	0.96107	75.31
21.5	4,199,067	130,233	0.03101	0.96899	72.38
22.5	4,068,834	125,902	0.03094	0.96906	70.14
23.5	3,942,932	112,157	0.02845	0.97155	67.97
24.5	3,354,603	80,201	0.02391	0.97609	66.04
25.5	2,928,334	56,504	0.01930	0.98070	64.46
26.5	2,525,034	71,146	0.02818	0.97182	63.22

Toronto Hydro

Account 3057 - O/H - Switches

Placement Band - 1986 - 2022 Experience Band - 2014 - 2022

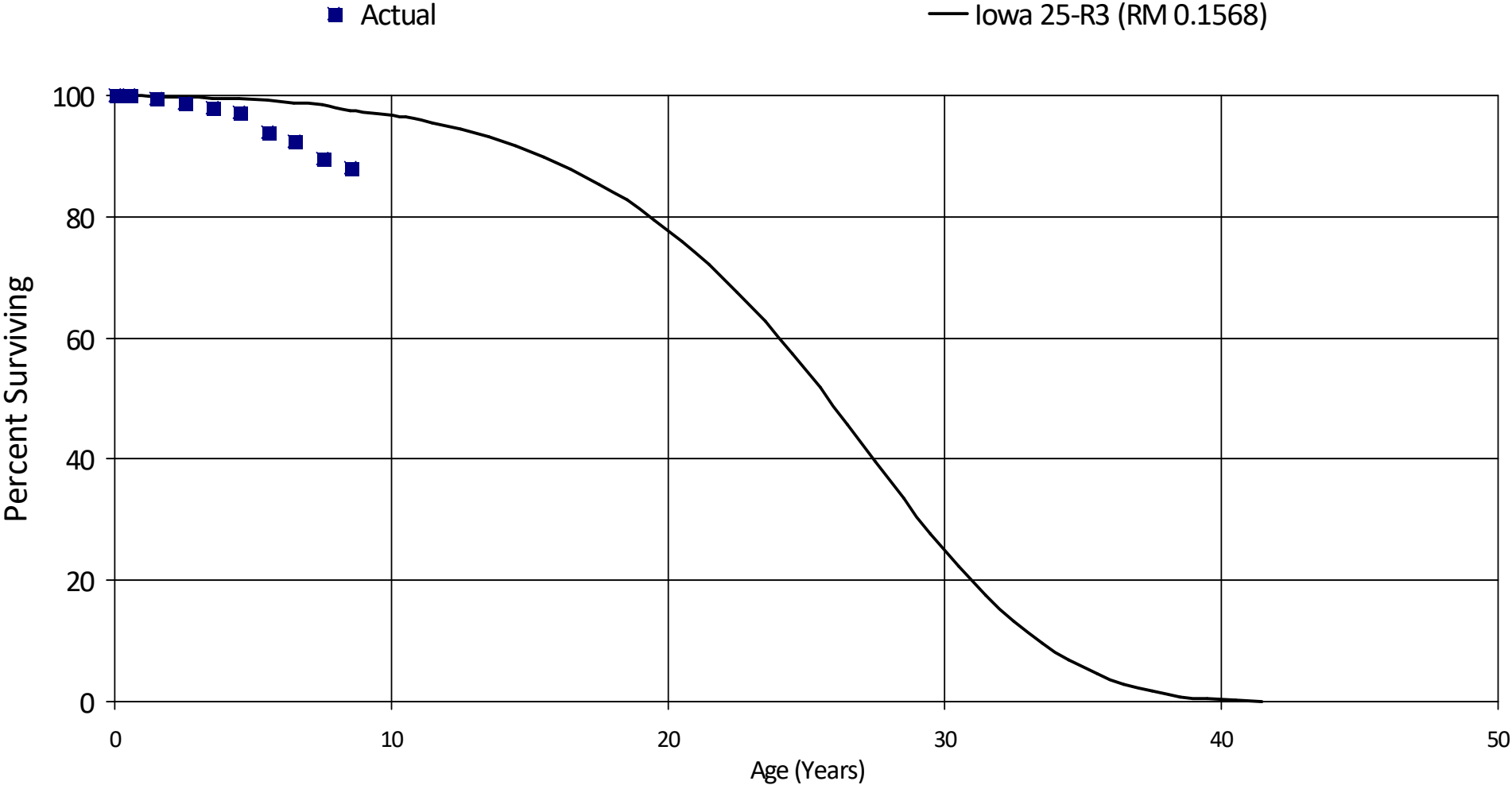
27.5	2,141,621	107,916	0.05039	0.94961	61.44
28.5	1,826,468	81,768	0.04477	0.95523	58.34
29.5	725,767	3,136	0.00432	0.99568	55.73
30.5	444,222	395	0.00089	0.99911	55.49
31.5	289,144	0	0.00000	1.00000	55.44
32.5	101,543	0	0.00000	1.00000	55.44
33.5	46,471	0	0.00000	1.00000	55.44
34.5	654	0	0.00000	1.00000	55.44
35.5	0	0	0.00000	0.00000	55.44
Totals:		7,868,143			

Toronto Hydro

Account 3061 - O/H - SMD-20 Switches

Placement Band - 2013 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3061 - O/H - SMD-20 Switches

Placement Band - 2013 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

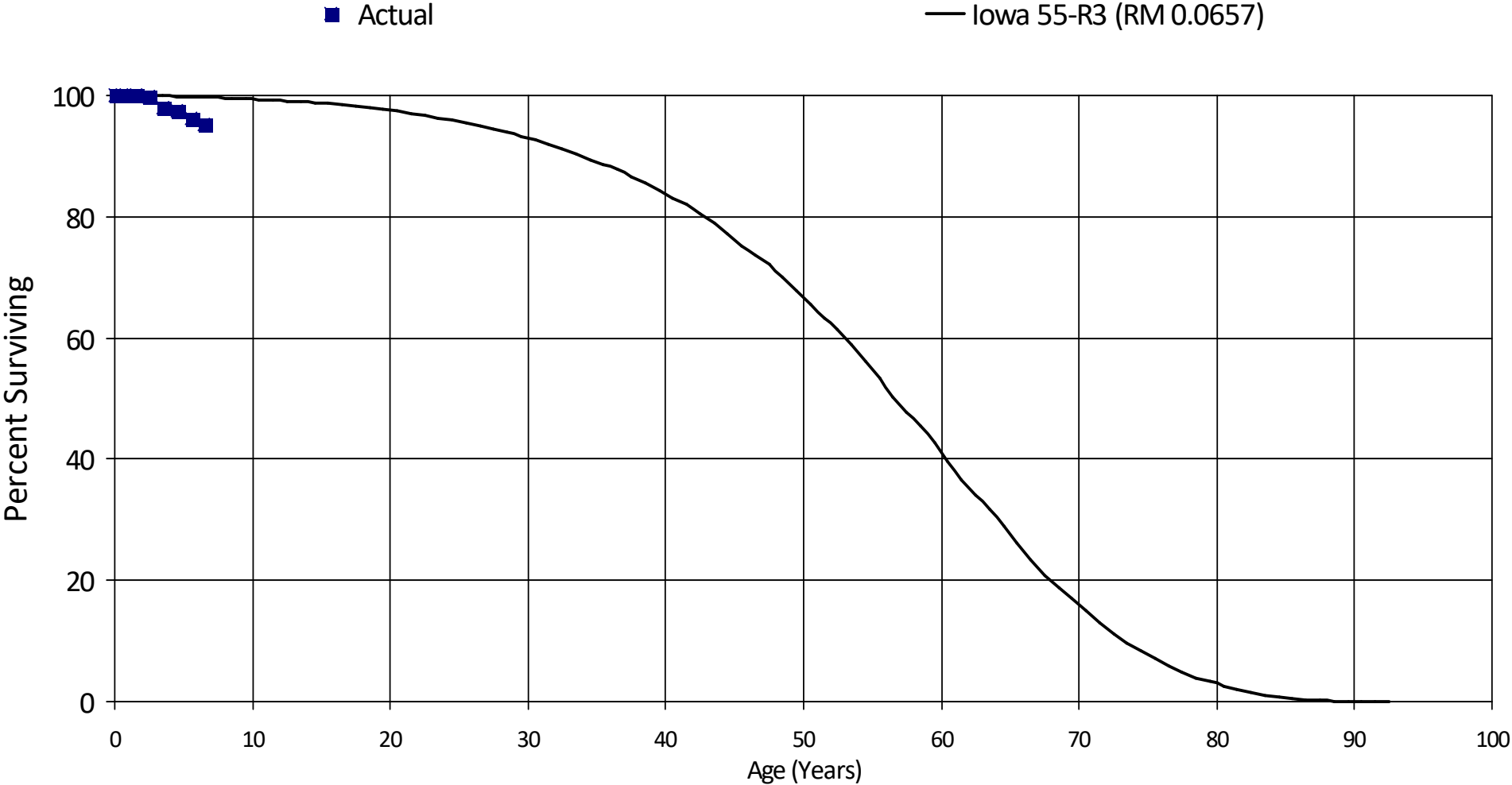
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	31,854,761	3,549	0.00011	0.99989	100.00
0.5	27,781,760	122,258	0.00440	0.99560	99.99
1.5	23,144,539	199,424	0.00862	0.99138	99.55
2.5	21,117,749	137,880	0.00653	0.99347	98.69
3.5	17,756,994	165,965	0.00935	0.99065	98.05
4.5	15,444,640	503,439	0.03260	0.96740	97.13
5.5	12,937,087	231,401	0.01789	0.98211	93.96
6.5	8,658,619	258,647	0.02987	0.97013	92.28
7.5	5,143,029	81,146	0.01578	0.98422	89.52
8.5	2,261,264	63,366	0.02802	0.97198	88.11
Totals:		1,767,075			

Toronto Hydro

Account 3411 - O/H - Poles STL Conventional Legacy

Placement Band - 2015 - 2022 Experience Band - 2019 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3411 - O/H - Poles STL Conventional Legacy

Placement Band - 2015 - 2022 Experience Band - 2019 - 2022

RETIREMENT RATE ANALYSIS

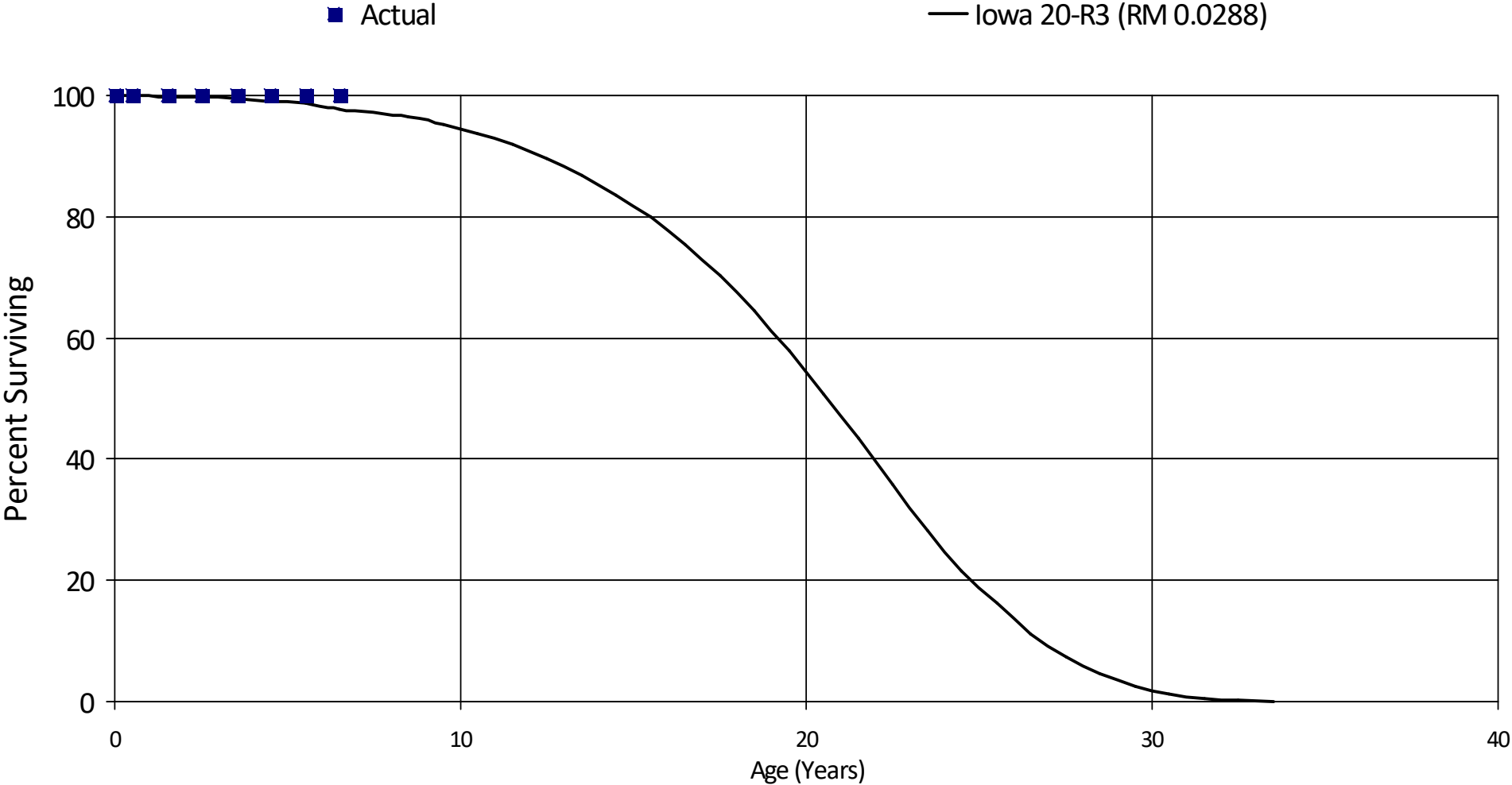
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	48,217,660	10,165	0.00021	0.99979	100.00
0.5	47,166,595	42,330	0.00090	0.99910	99.98
1.5	45,671,543	49,733	0.00109	0.99891	99.89
2.5	43,616,946	767,053	0.01759	0.98241	99.78
3.5	37,625,279	253,066	0.00673	0.99327	98.02
4.5	35,912,715	470,065	0.01309	0.98691	97.36
5.5	33,465,155	308,382	0.00922	0.99078	96.09
6.5	274,038	27,392	0.09996	0.90004	95.20
Totals:		1,928,186			

Toronto Hydro

Account 3427 - O/H - Poles Handwell

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3427 - O/H - Poles Handwell

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

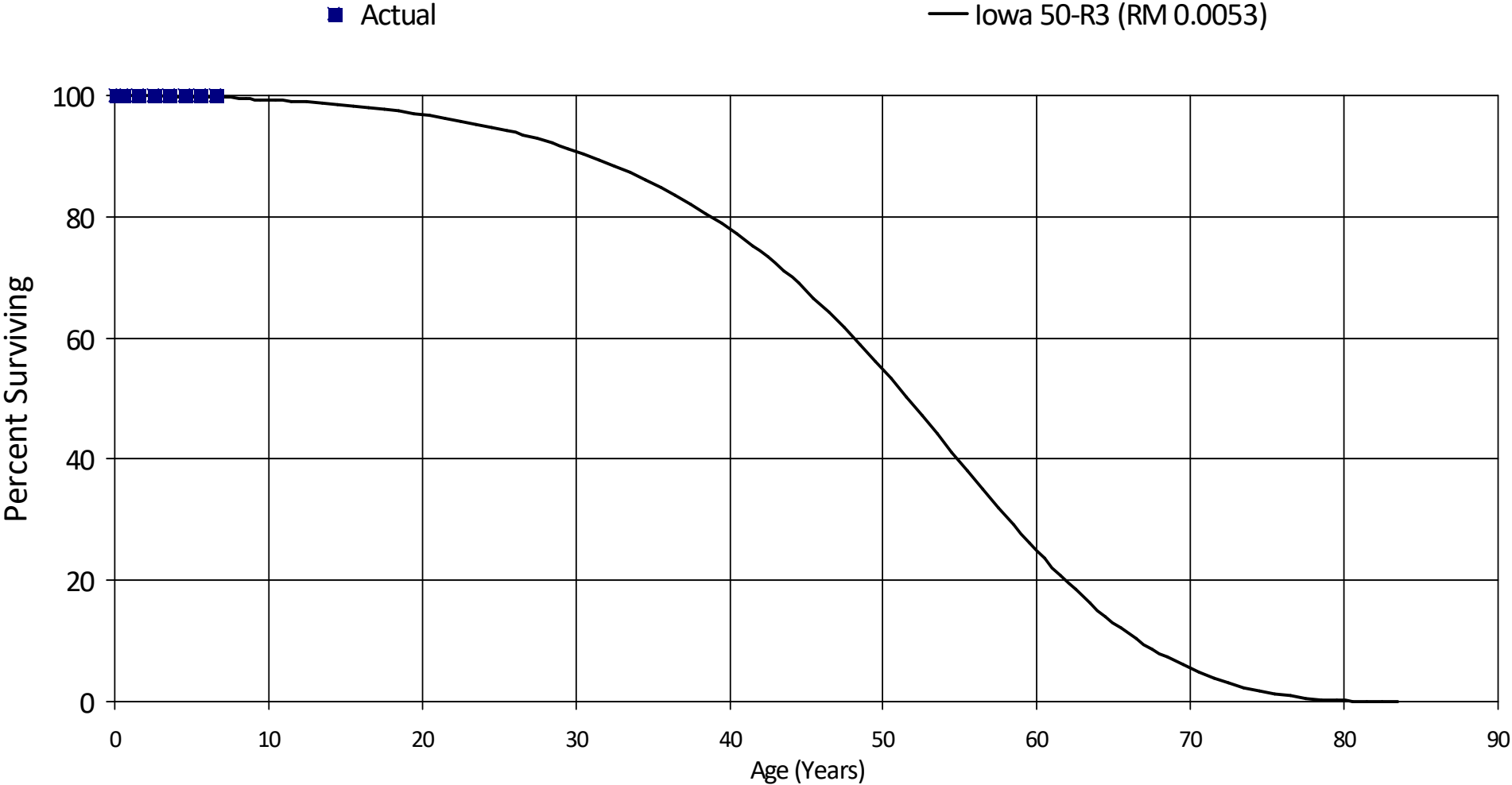
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,105,991	0	0.00000	1.00000	100.00
0.5	1,094,364	0	0.00000	1.00000	100.00
1.5	1,001,623	0	0.00000	1.00000	100.00
2.5	881,653	0	0.00000	1.00000	100.00
3.5	608,996	0	0.00000	1.00000	100.00
4.5	594,955	0	0.00000	1.00000	100.00
5.5	430,965	0	0.00000	1.00000	100.00
6.5	109,801	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3451 - O/H - Street Lighting Cable

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3451 - O/H - Street Lighting Cable

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

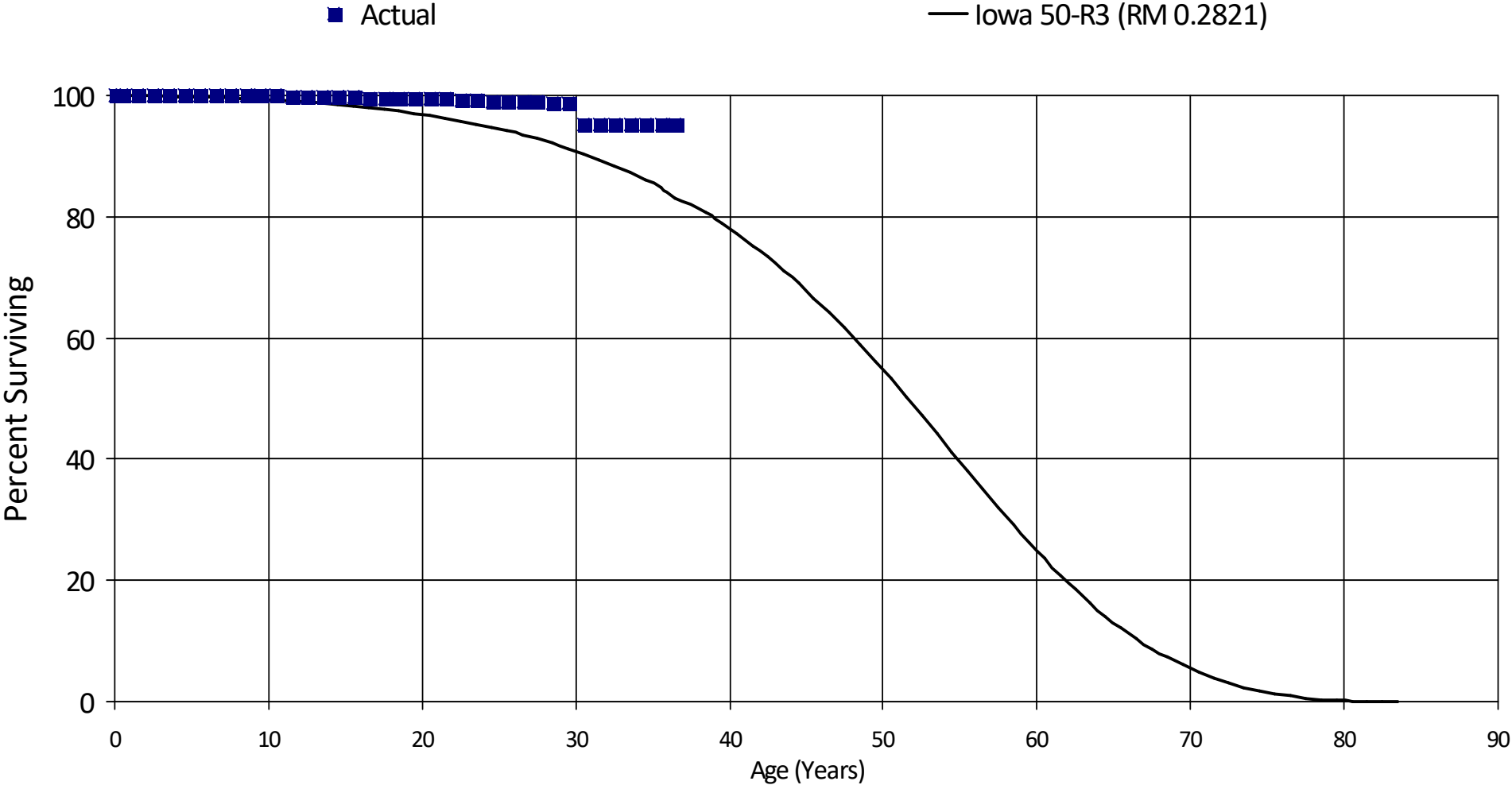
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	6,459,708	0	0.00000	1.00000	100.00
0.5	5,582,879	0	0.00000	1.00000	100.00
1.5	4,596,010	0	0.00000	1.00000	100.00
2.5	3,592,201	0	0.00000	1.00000	100.00
3.5	2,070,371	0	0.00000	1.00000	100.00
4.5	2,009,577	0	0.00000	1.00000	100.00
5.5	1,395,863	0	0.00000	1.00000	100.00
6.5	325,050	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3511 - U/G Conduit - Duct Bank

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3511 - U/G Conduit - Duct Bank

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,239,135,524	14,798	0.00001	0.99999	100.00
0.5	1,139,278,411	20,634	0.00002	0.99998	100.00
1.5	1,050,648,787	101,192	0.00010	0.99990	100.00
2.5	965,945,387	150,618	0.00016	0.99984	99.99
3.5	878,080,052	20,882	0.00002	0.99998	99.97
4.5	809,342,350	40,492	0.00005	0.99995	99.97
5.5	747,146,191	24,781	0.00003	0.99997	99.97
6.5	674,930,343	250,084	0.00037	0.99963	99.97
7.5	591,025,779	90,607	0.00015	0.99985	99.93
8.5	470,517,430	65,528	0.00014	0.99986	99.92
9.5	395,549,401	65,107	0.00016	0.99984	99.91
10.5	356,589,450	77,079	0.00022	0.99978	99.89
11.5	252,201,503	92,136	0.00037	0.99963	99.87
12.5	191,261,705	71,023	0.00037	0.99963	99.83
13.5	163,954,030	59,459	0.00036	0.99964	99.79
14.5	134,399,478	166,496	0.00124	0.99876	99.75
15.5	120,780,008	31,166	0.00026	0.99974	99.63
16.5	109,965,054	41,467	0.00038	0.99962	99.60
17.5	107,593,669	8,259	0.00008	0.99992	99.56
18.5	96,922,874	55,114	0.00057	0.99943	99.55
19.5	79,959,586	21,759	0.00027	0.99973	99.49
20.5	84,963,759	49,167	0.00058	0.99942	99.46
21.5	79,476,690	91,939	0.00116	0.99884	99.40
22.5	64,289,468	52,753	0.00082	0.99918	99.28
23.5	49,958,159	44,923	0.00090	0.99910	99.20
24.5	41,956,653	16,777	0.00040	0.99960	99.11
25.5	34,957,250	19,132	0.00055	0.99945	99.07
26.5	30,673,703	23,432	0.00076	0.99924	99.02

Toronto Hydro

Account 3511 - U/G Conduit - Duct Bank

Placement Band - 1985 - 2022 Experience Band - 2014 - 2022

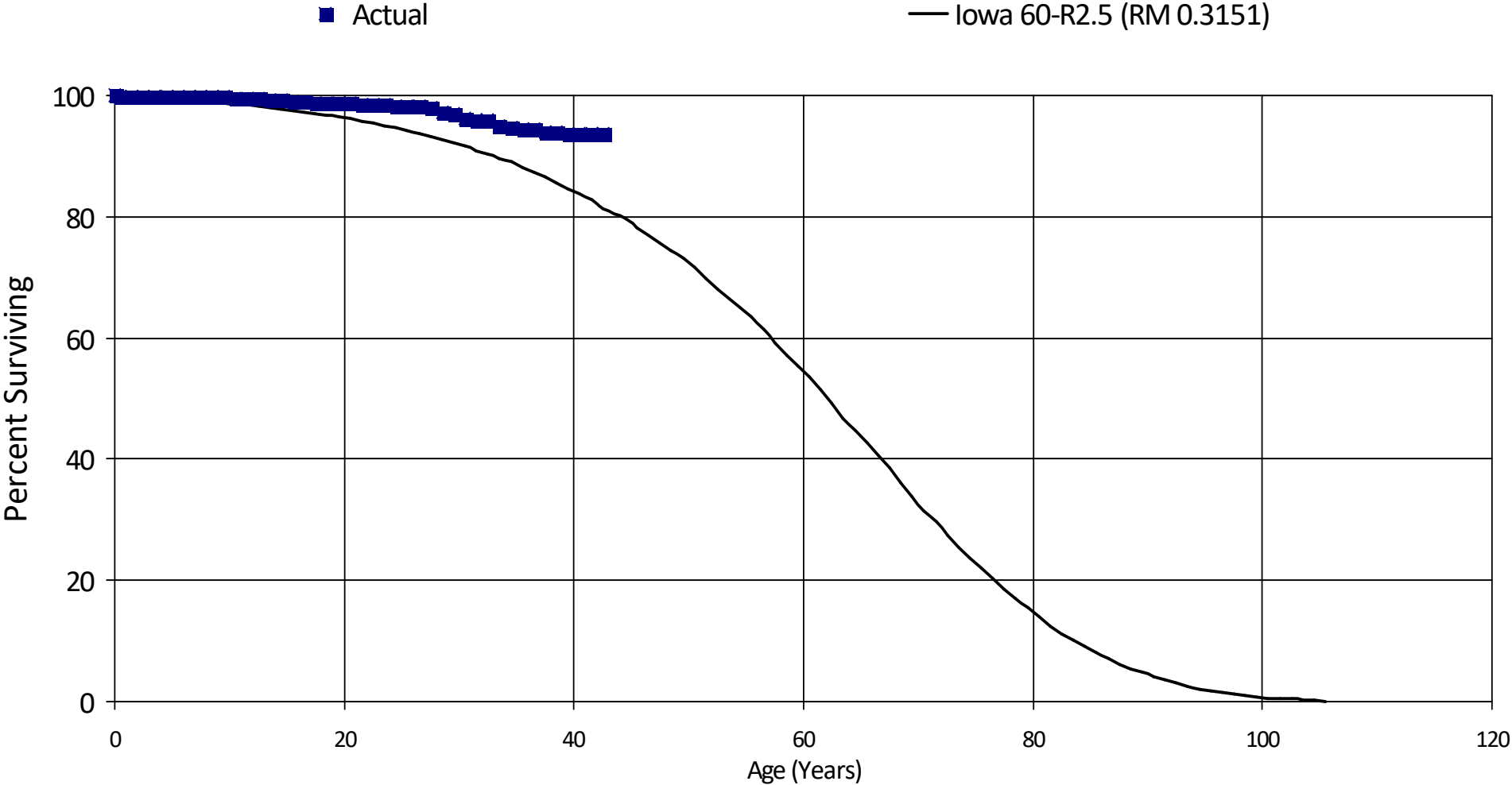
27.5	23,924,956	21,728	0.00091	0.99909	98.94
28.5	17,308,419	5,185	0.00030	0.99970	98.85
29.5	11,653,223	425,744	0.03653	0.96347	98.82
30.5	4,965,113	0	0.00000	1.00000	95.21
31.5	2,716,868	43	0.00002	0.99998	95.21
32.5	1,259,994	0	0.00000	1.00000	95.21
33.5	668,813	0	0.00000	1.00000	95.21
34.5	668,813	0	0.00000	1.00000	95.21
35.5	489,933	0	0.00000	1.00000	95.21
36.5	481,500	0	0.00000	1.00000	95.21
Totals:		2,219,504			

Toronto Hydro

Account 3513 - U/G Conduit - Vault

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3513 - U/G Conduit - Vault

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	163,311,823	218,328	0.00134	0.99866	100.00
0.5	153,274,499	0	0.00000	1.00000	99.87
1.5	146,660,977	48,448	0.00033	0.99967	99.87
2.5	138,066,828	832	0.00001	0.99999	99.84
3.5	132,972,728	0	0.00000	1.00000	99.84
4.5	130,695,978	32,748	0.00025	0.99975	99.84
5.5	127,307,335	179,647	0.00141	0.99859	99.82
6.5	123,318,926	0	0.00000	1.00000	99.68
7.5	120,668,406	0	0.00000	1.00000	99.68
8.5	117,232,812	3,858	0.00003	0.99997	99.68
9.5	112,622,158	176,026	0.00156	0.99844	99.68
10.5	112,008,594	40,186	0.00036	0.99964	99.52
11.5	109,577,502	0	0.00000	1.00000	99.48
12.5	107,530,859	212,492	0.00198	0.99802	99.48
13.5	96,005,227	17,621	0.00018	0.99982	99.28
14.5	80,195,717	262,491	0.00327	0.99673	99.26
15.5	72,794,802	50,960	0.00070	0.99930	98.94
16.5	66,927,416	49,332	0.00074	0.99926	98.87
17.5	65,475,847	65,116	0.00099	0.99901	98.80
18.5	59,538,496	0	0.00000	1.00000	98.70
19.5	50,169,504	35,568	0.00071	0.99929	98.70
20.5	52,779,371	57,770	0.00109	0.99891	98.63
21.5	49,625,948	19,184	0.00039	0.99961	98.52
22.5	41,064,902	0	0.00000	1.00000	98.48
23.5	32,973,268	60,365	0.00183	0.99817	98.48
24.5	28,570,258	18,948	0.00066	0.99934	98.30
25.5	24,503,229	0	0.00000	1.00000	98.24
26.5	22,090,288	49,807	0.00225	0.99775	98.24

Toronto Hydro

Account 3513 - U/G Conduit - Vault

Placement Band - 1979 - 2022 Experience Band - 2014 - 2022

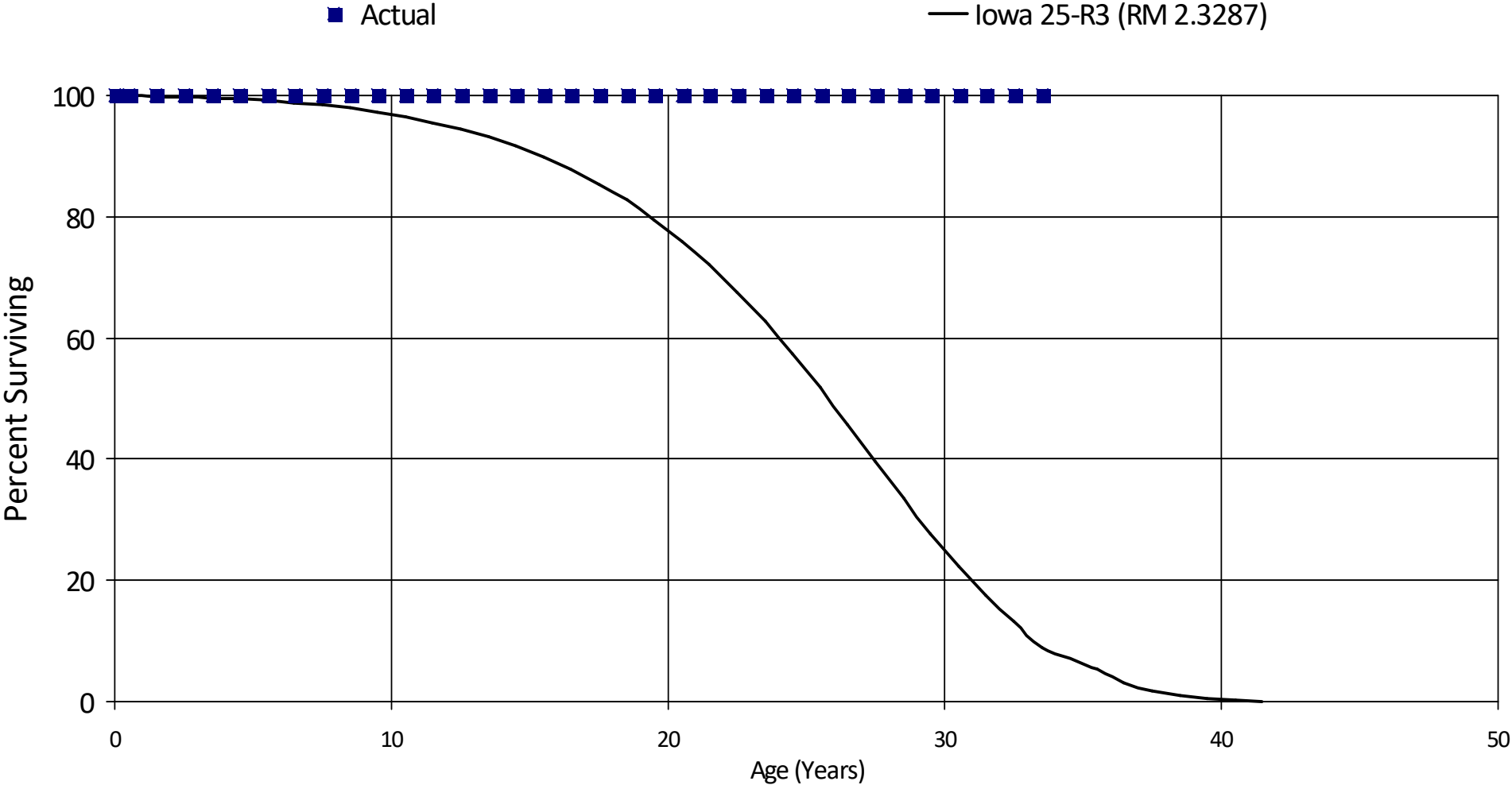
27.5	18,086,521	169,951	0.00940	0.99060	98.02
28.5	13,955,805	26,836	0.00192	0.99808	97.10
29.5	10,691,551	77,705	0.00727	0.99273	96.91
30.5	6,726,261	14,821	0.00220	0.99780	96.21
31.5	5,291,845	7,756	0.00147	0.99853	96.00
32.5	4,317,951	43,452	0.01006	0.98994	95.86
33.5	3,862,814	9,416	0.00244	0.99756	94.90
34.5	3,536,266	7,583	0.00214	0.99786	94.67
35.5	3,463,216	5,255	0.00152	0.99848	94.47
36.5	3,452,143	11,214	0.00325	0.99675	94.33
37.5	2,690,526	0	0.00000	1.00000	94.02
38.5	2,156,485	7,736	0.00359	0.99641	94.02
39.5	1,609,643	0	0.00000	1.00000	93.68
40.5	995,657	0	0.00000	1.00000	93.68
41.5	649,280	0	0.00000	1.00000	93.68
42.5	445,454	0	0.00000	1.00000	93.68
Totals:		1,981,452			

Toronto Hydro

Account 3515 - U/G Conduit - Vault Roof

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3515 - U/G Conduit - Vault Roof

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	30,249,381	0	0.00000	1.00000	100.00
0.5	28,934,783	0	0.00000	1.00000	100.00
1.5	27,447,707	0	0.00000	1.00000	100.00
2.5	25,445,416	0	0.00000	1.00000	100.00
3.5	23,865,890	0	0.00000	1.00000	100.00
4.5	22,614,616	0	0.00000	1.00000	100.00
5.5	20,806,017	0	0.00000	1.00000	100.00
6.5	20,180,147	0	0.00000	1.00000	100.00
7.5	19,631,209	0	0.00000	1.00000	100.00
8.5	18,988,360	0	0.00000	1.00000	100.00
9.5	18,508,330	0	0.00000	1.00000	100.00
10.5	18,358,534	0	0.00000	1.00000	100.00
11.5	18,303,797	0	0.00000	1.00000	100.00
12.5	18,303,797	0	0.00000	1.00000	100.00
13.5	16,083,175	0	0.00000	1.00000	100.00
14.5	12,977,138	0	0.00000	1.00000	100.00
15.5	11,593,083	0	0.00000	1.00000	100.00
16.5	10,470,585	0	0.00000	1.00000	100.00
17.5	10,218,244	0	0.00000	1.00000	100.00
18.5	9,090,638	0	0.00000	1.00000	100.00
19.5	7,328,283	0	0.00000	1.00000	100.00
20.5	7,925,804	0	0.00000	1.00000	100.00
21.5	7,408,823	0	0.00000	1.00000	100.00
22.5	5,828,660	0	0.00000	1.00000	100.00
23.5	4,358,163	0	0.00000	1.00000	100.00
24.5	3,551,381	0	0.00000	1.00000	100.00
25.5	2,848,000	0	0.00000	1.00000	100.00
26.5	2,428,652	0	0.00000	1.00000	100.00

Toronto Hydro

Account 3515 - U/G Conduit - Vault Roof

Placement Band - 1988 - 2022 Experience Band - 2022 - 2022

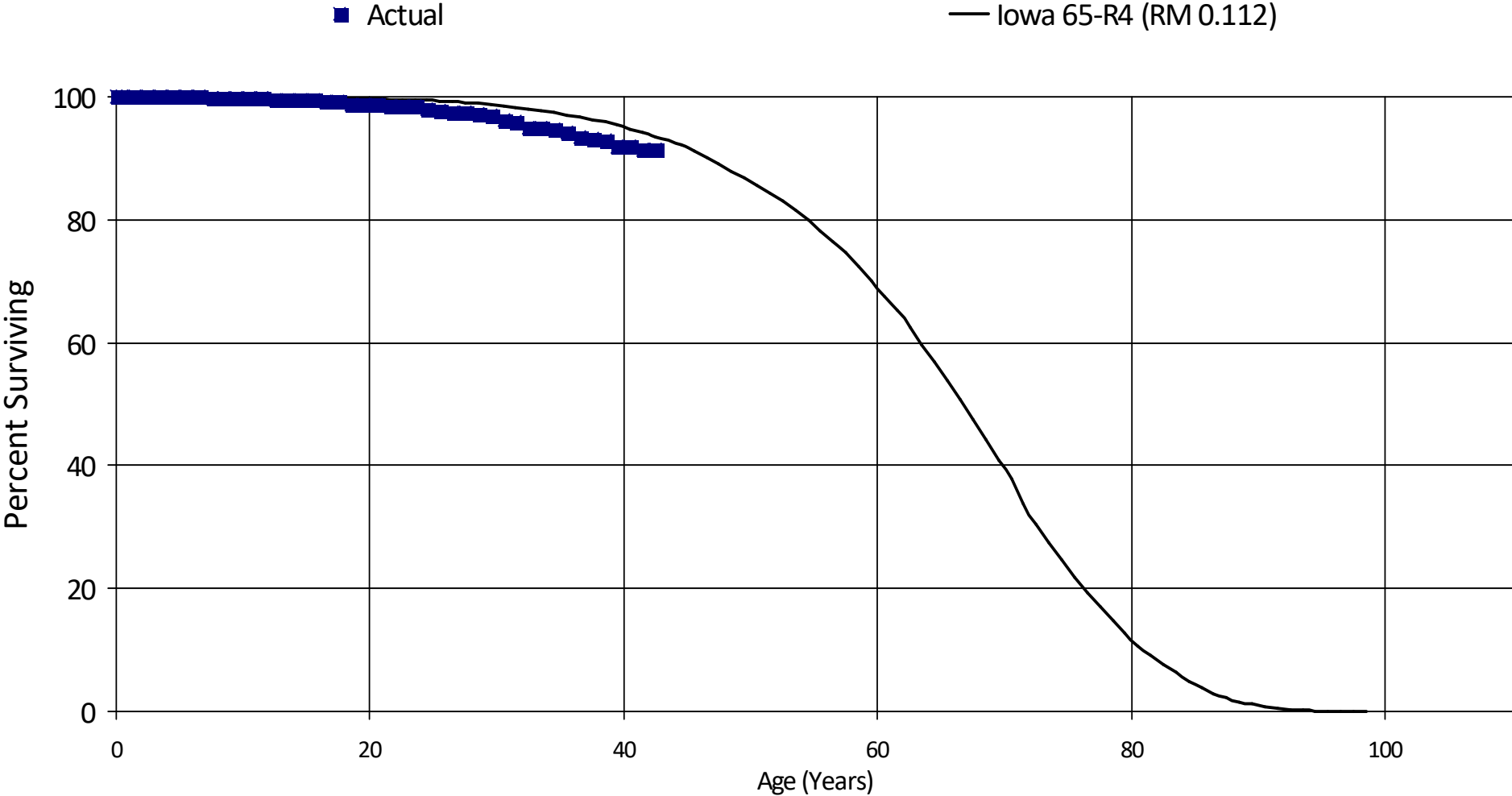
27.5	1,788,863	0	0.00000	1.00000	100.00
28.5	1,189,905	0	0.00000	1.00000	100.00
29.5	709,514	0	0.00000	1.00000	100.00
30.5	230,552	0	0.00000	1.00000	100.00
31.5	87,466	0	0.00000	1.00000	100.00
32.5	1,111	0	0.00000	1.00000	100.00
33.5	1,111	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3517 - U/G Conduit - Cable Chamber

Placement Band - 1979 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3517 - U/G Conduit - Cable Chamber

Placement Band - 1979 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	262,037,175	0	0.00000	1.00000	100.00
0.5	238,114,410	68,358	0.00029	0.99971	100.00
1.5	209,645,052	7,994	0.00004	0.99996	99.97
2.5	180,824,375	15,788	0.00009	0.99991	99.97
3.5	156,223,447	0	0.00000	1.00000	99.96
4.5	146,144,517	0	0.00000	1.00000	99.96
5.5	138,901,121	0	0.00000	1.00000	99.96
6.5	125,011,876	241,354	0.00193	0.99807	99.96
7.5	116,287,197	41,828	0.00036	0.99964	99.77
8.5	86,211,446	26,264	0.00030	0.99970	99.73
9.5	75,646,489	6,396	0.00008	0.99992	99.70
10.5	68,872,754	24,648	0.00036	0.99964	99.69
11.5	63,316,469	66,022	0.00104	0.99896	99.65
12.5	56,471,294	53,819	0.00095	0.99905	99.55
13.5	50,532,277	24,137	0.00048	0.99952	99.46
14.5	42,339,963	0	0.00000	1.00000	99.41
15.5	38,524,764	58,099	0.00151	0.99849	99.41
16.5	35,402,050	4,663	0.00013	0.99987	99.26
17.5	34,643,864	192,057	0.00554	0.99446	99.25
18.5	31,366,966	0	0.00000	1.00000	98.70
19.5	26,622,826	7,963	0.00030	0.99970	98.70
20.5	27,834,209	45,923	0.00165	0.99835	98.67
21.5	26,089,999	22,001	0.00084	0.99916	98.51
22.5	21,665,799	3,520	0.00016	0.99984	98.43
23.5	17,487,227	70,990	0.00406	0.99594	98.41
24.5	15,112,535	25,649	0.00170	0.99830	98.01
25.5	12,996,964	41,814	0.00322	0.99678	97.84
26.5	11,554,014	8,555	0.00074	0.99926	97.52

Toronto Hydro

Account 3517 - U/G Conduit - Cable Chamber

Placement Band - 1979 - 2022 Experience Band - 2015 - 2022

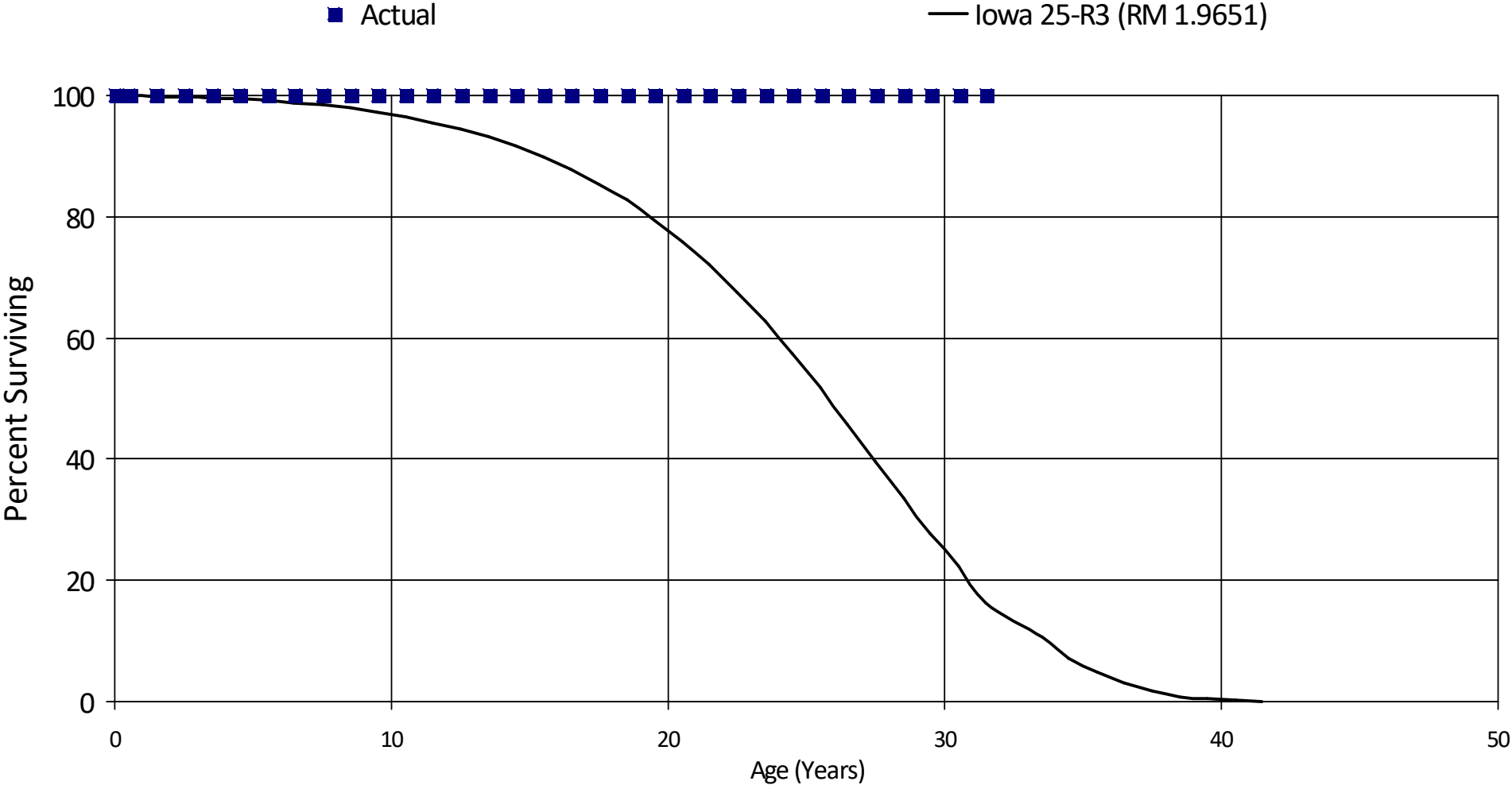
27.5	9,516,802	16,514	0.00174	0.99826	97.45
28.5	7,430,791	22,184	0.00299	0.99701	97.28
29.5	5,608,853	43,901	0.00783	0.99217	96.99
30.5	3,567,058	6,286	0.00176	0.99824	96.23
31.5	2,819,800	31,815	0.01128	0.98872	96.06
32.5	2,273,336	0	0.00000	1.00000	94.98
33.5	2,059,361	4,109	0.00200	0.99800	94.98
34.5	1,883,958	10,090	0.00536	0.99464	94.79
35.5	1,827,561	15,376	0.00841	0.99159	94.28
36.5	1,812,185	4,351	0.00240	0.99760	93.49
37.5	1,375,542	6,185	0.00450	0.99550	93.27
38.5	1,343,277	12,535	0.00933	0.99067	92.85
39.5	1,030,559	2,492	0.00242	0.99758	91.98
40.5	631,427	3,328	0.00527	0.99473	91.76
41.5	421,566	0	0.00000	1.00000	91.28
42.5	291,421	0	0.00000	1.00000	91.28
Totals:		1,237,008			

Toronto Hydro

Account 3521 - U/G Conduit - Cable Chamber Roof

Placement Band - 1990 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3521 - U/G Conduit - Cable Chamber Roof

Placement Band - 1990 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	16,866,333	0	0.00000	1.00000	100.00
0.5	15,287,039	0	0.00000	1.00000	100.00
1.5	13,753,442	0	0.00000	1.00000	100.00
2.5	12,597,197	0	0.00000	1.00000	100.00
3.5	12,318,043	0	0.00000	1.00000	100.00
4.5	12,225,916	0	0.00000	1.00000	100.00
5.5	12,090,932	0	0.00000	1.00000	100.00
6.5	11,946,926	0	0.00000	1.00000	100.00
7.5	11,867,597	0	0.00000	1.00000	100.00
8.5	11,651,703	0	0.00000	1.00000	100.00
9.5	11,622,514	0	0.00000	1.00000	100.00
10.5	11,620,550	0	0.00000	1.00000	100.00
11.5	11,390,062	0	0.00000	1.00000	100.00
12.5	11,390,062	0	0.00000	1.00000	100.00
13.5	10,015,362	0	0.00000	1.00000	100.00
14.5	8,084,156	0	0.00000	1.00000	100.00
15.5	7,182,378	0	0.00000	1.00000	100.00
16.5	6,447,781	0	0.00000	1.00000	100.00
17.5	6,274,434	0	0.00000	1.00000	100.00
18.5	5,572,519	0	0.00000	1.00000	100.00
19.5	4,463,060	0	0.00000	1.00000	100.00
20.5	4,745,446	0	0.00000	1.00000	100.00
21.5	4,462,669	0	0.00000	1.00000	100.00
22.5	3,507,417	0	0.00000	1.00000	100.00
23.5	2,618,462	0	0.00000	1.00000	100.00
24.5	2,130,740	0	0.00000	1.00000	100.00
25.5	1,705,527	0	0.00000	1.00000	100.00
26.5	1,452,020	0	0.00000	1.00000	100.00

Toronto Hydro

Account 3521 - U/G Conduit - Cable Chamber Roof

Placement Band - 1990 - 2022 Experience Band - 2022 - 2022

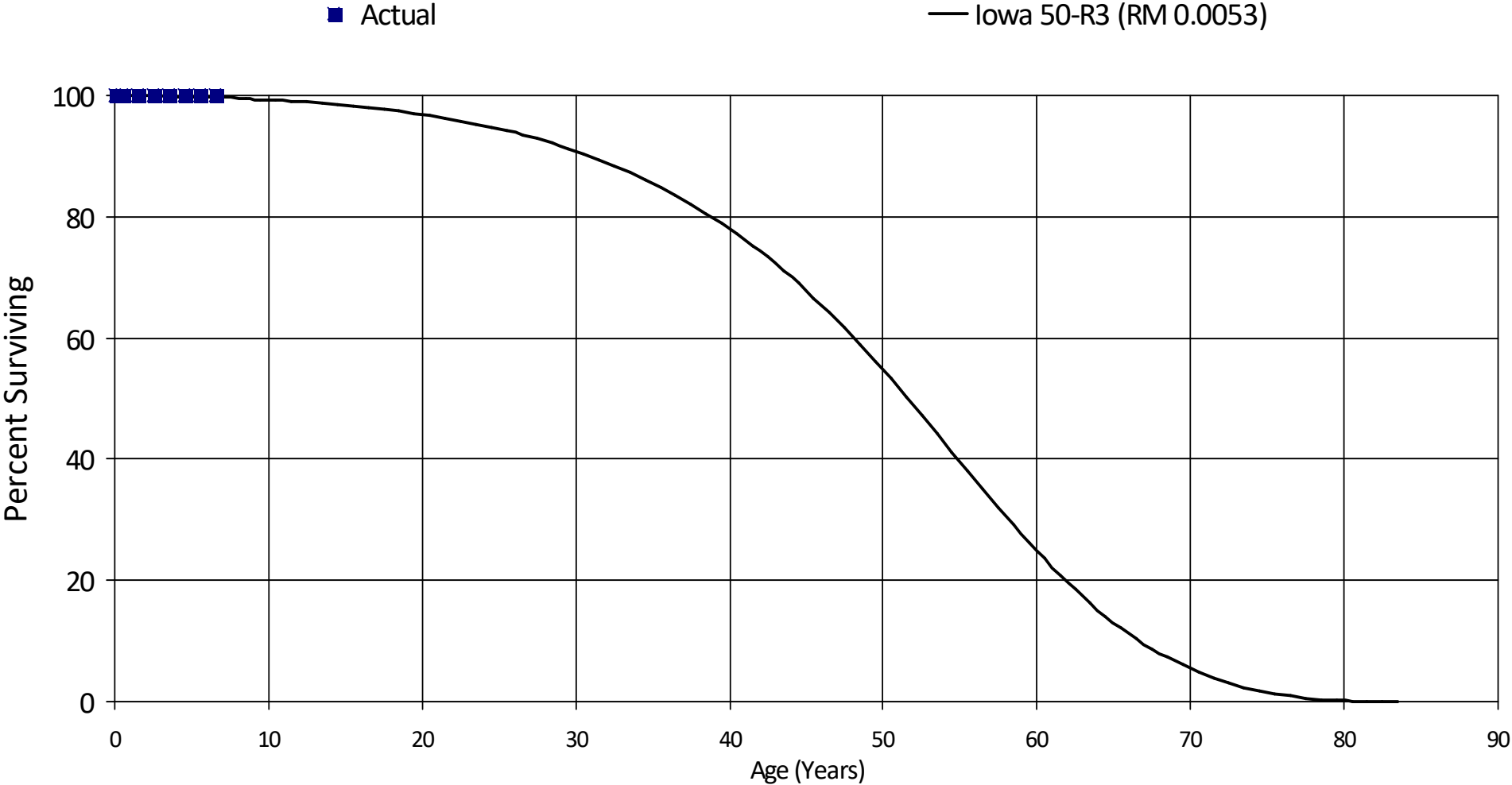
27.5	1,065,250	0	0.00000	1.00000	100.00
28.5	703,164	0	0.00000	1.00000	100.00
29.5	412,755	0	0.00000	1.00000	100.00
30.5	123,209	0	0.00000	1.00000	100.00
31.5	36,710	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3523 - U/G Conduit - Civil Street Lighting

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3523 - U/G Conduit - Civil Street Lighting

Placement Band - 2015 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

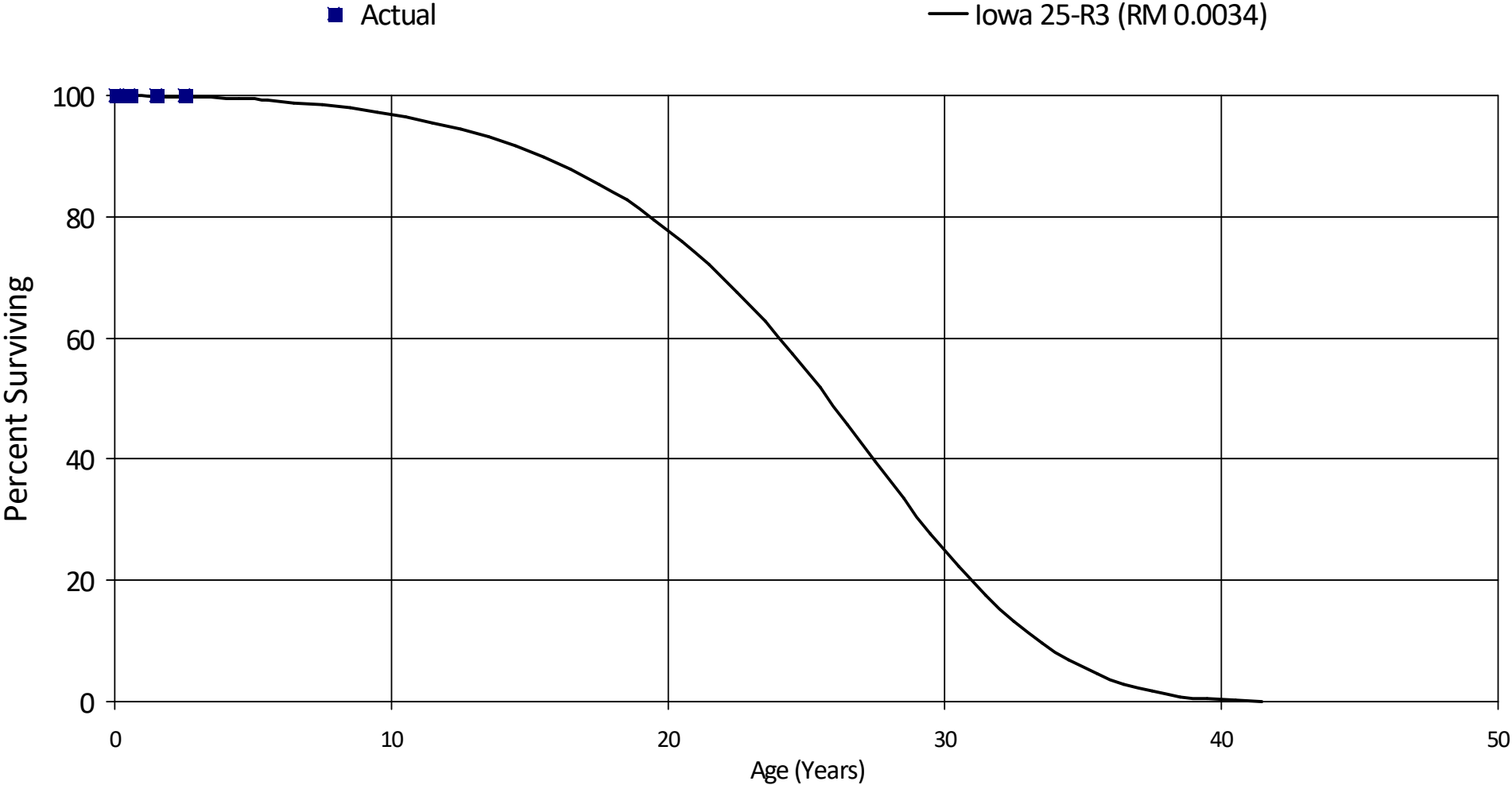
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	3,410,633	0	0.00000	1.00000	100.00
0.5	3,410,633	0	0.00000	1.00000	100.00
1.5	3,410,633	0	0.00000	1.00000	100.00
2.5	3,236,492	0	0.00000	1.00000	100.00
3.5	3,146,127	0	0.00000	1.00000	100.00
4.5	3,108,230	0	0.00000	1.00000	100.00
5.5	3,107,790	0	0.00000	1.00000	100.00
6.5	35,815	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3525 - Cable Chamber Lid

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3525 - Cable Chamber Lid

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

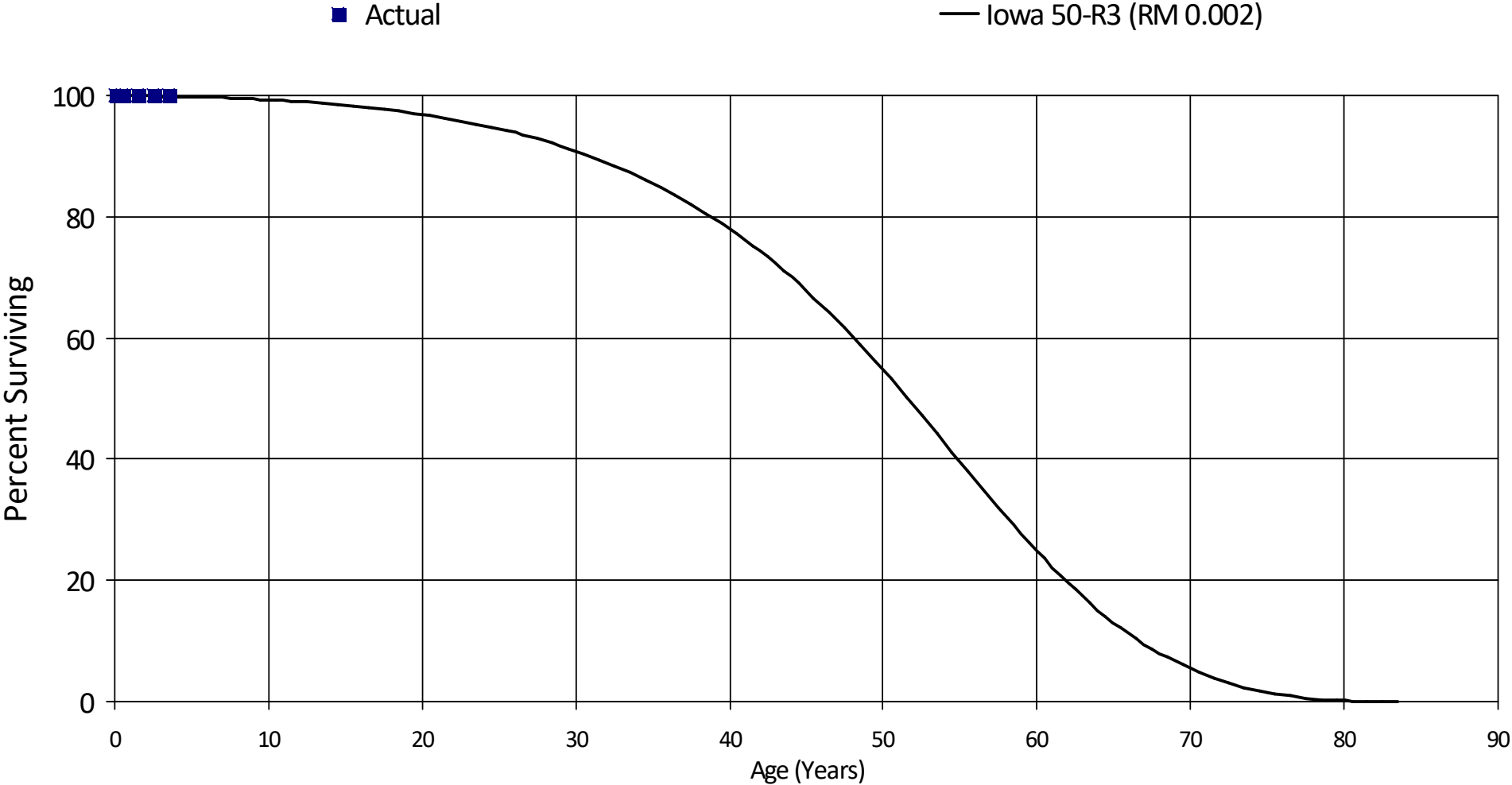
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	8,546,889	0	0.00000	1.00000	100.00
0.5	4,673,103	0	0.00000	1.00000	100.00
1.5	2,120,909	0	0.00000	1.00000	100.00
2.5	2,117,049	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3609 - U/G Conductors

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3609 - U/G Conductors

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

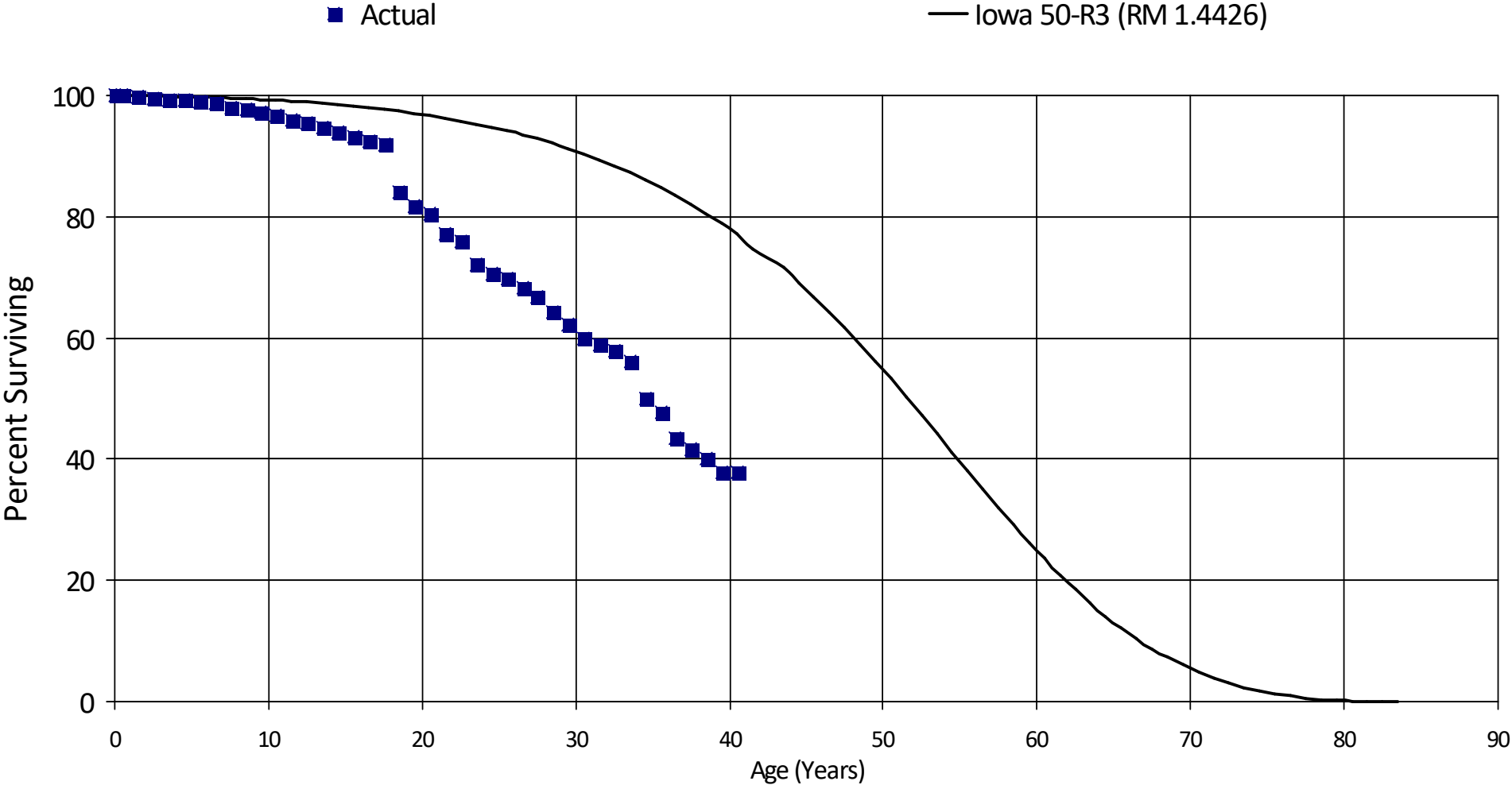
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	2,712,861	0	0.00000	1.00000	100.00
0.5	2,712,861	0	0.00000	1.00000	100.00
1.5	2,712,861	0	0.00000	1.00000	100.00
2.5	2,712,861	0	0.00000	1.00000	100.00
3.5	2,712,861	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3611 - U/G - Primary Cable Duct (xLPE)

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3611 - U/G - Primary Cable Duct (xLPE)

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	869,657,724	304,832	0.00035	0.99965	100.00
0.5	746,347,364	1,521,693	0.00204	0.99796	99.96
1.5	638,499,584	1,084,730	0.00170	0.99830	99.76
2.5	539,353,091	1,383,354	0.00256	0.99744	99.59
3.5	470,653,581	899,200	0.00191	0.99809	99.34
4.5	402,785,885	1,016,028	0.00252	0.99748	99.15
5.5	346,109,037	865,150	0.00250	0.99750	98.90
6.5	291,243,565	2,127,697	0.00731	0.99269	98.65
7.5	241,692,313	577,918	0.00239	0.99761	97.93
8.5	197,222,031	1,071,110	0.00543	0.99457	97.70
9.5	151,408,644	841,885	0.00556	0.99444	97.17
10.5	132,297,935	852,128	0.00644	0.99356	96.63
11.5	105,982,079	586,635	0.00554	0.99446	96.01
12.5	88,141,106	854,417	0.00969	0.99031	95.48
13.5	77,840,978	581,371	0.00747	0.99253	94.55
14.5	65,479,709	451,082	0.00689	0.99311	93.84
15.5	54,872,686	448,633	0.00818	0.99182	93.19
16.5	46,080,140	235,675	0.00511	0.99489	92.43
17.5	40,573,525	3,527,641	0.08694	0.91306	91.96
18.5	30,098,065	802,024	0.02665	0.97335	83.96
19.5	17,380,908	286,831	0.01650	0.98350	81.72
20.5	17,505,225	709,564	0.04053	0.95947	80.37
21.5	17,967,427	258,516	0.01439	0.98561	77.11
22.5	16,631,734	851,809	0.05122	0.94878	76.00
23.5	15,779,926	332,395	0.02106	0.97894	72.11
24.5	13,929,548	169,183	0.01215	0.98785	70.59
25.5	11,825,080	242,276	0.02049	0.97951	69.73
26.5	9,329,410	223,612	0.02397	0.97603	68.30

Toronto Hydro

Account 3611 - U/G - Primary Cable Duct (xLPE)

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

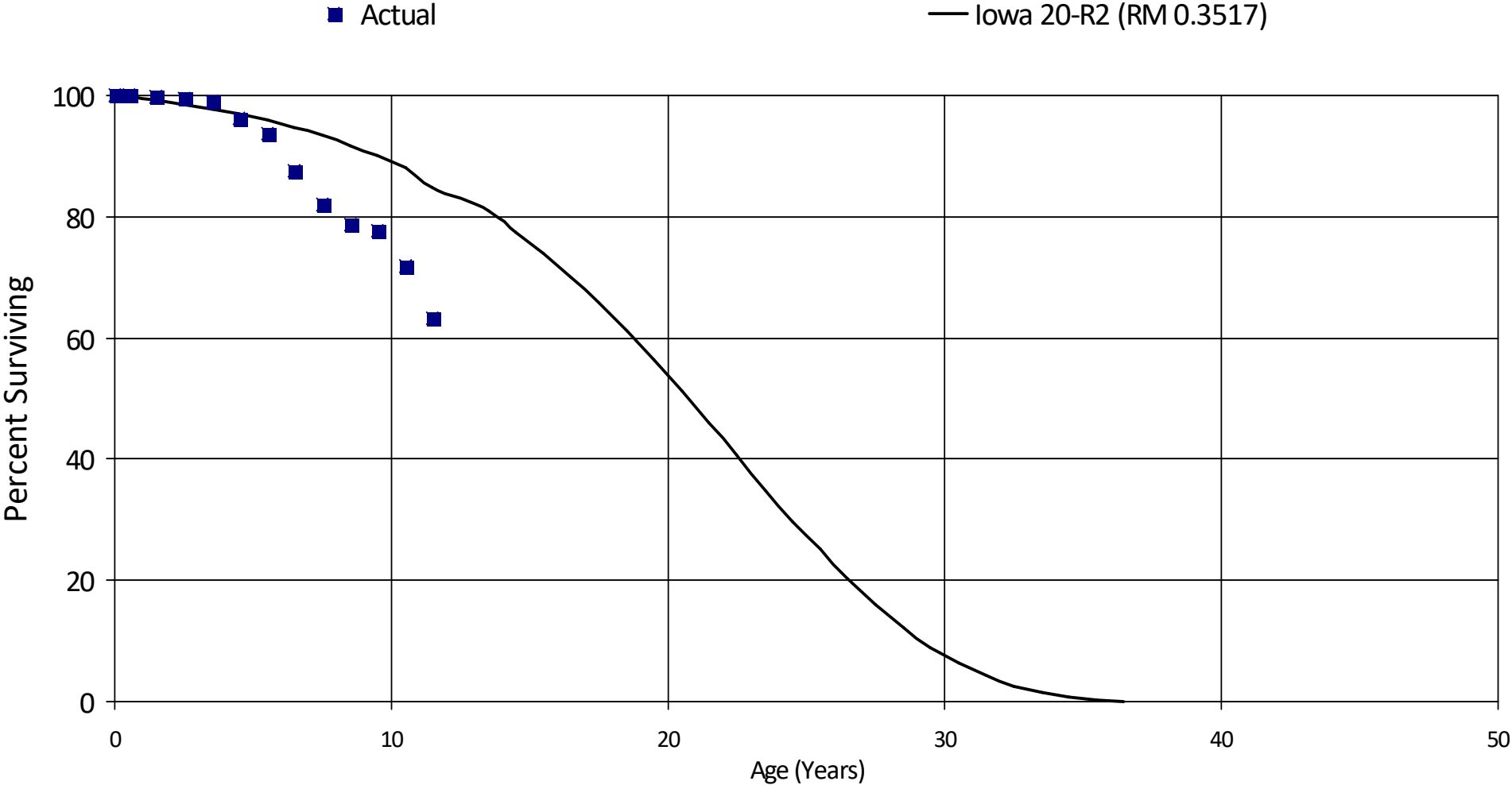
27.5	7,122,525	262,949	0.03692	0.96308	66.66
28.5	5,756,577	191,443	0.03326	0.96674	64.20
29.5	4,474,880	161,692	0.03613	0.96387	62.06
30.5	3,057,385	46,740	0.01529	0.98471	59.82
31.5	2,662,800	42,234	0.01586	0.98414	58.91
32.5	1,421,919	48,440	0.03407	0.96593	57.98
33.5	1,194,406	128,640	0.10770	0.89230	56.00
34.5	1,016,563	47,477	0.04670	0.95330	49.97
35.5	969,086	85,550	0.08828	0.91172	47.64
36.5	883,536	39,275	0.04445	0.95555	43.43
37.5	571,020	17,618	0.03085	0.96915	41.50
38.5	307,126	19,014	0.06191	0.93809	40.22
39.5	76,272	0	0.00000	1.00000	37.73
40.5	30,168	30,168	1.00000		37.73
	Totals:	24,228,629			

Toronto Hydro

Account 3613 - U/G - Primary Cable Buried (XLPE)

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3613 - U/G - Primary Cable Buried (xLPE)

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

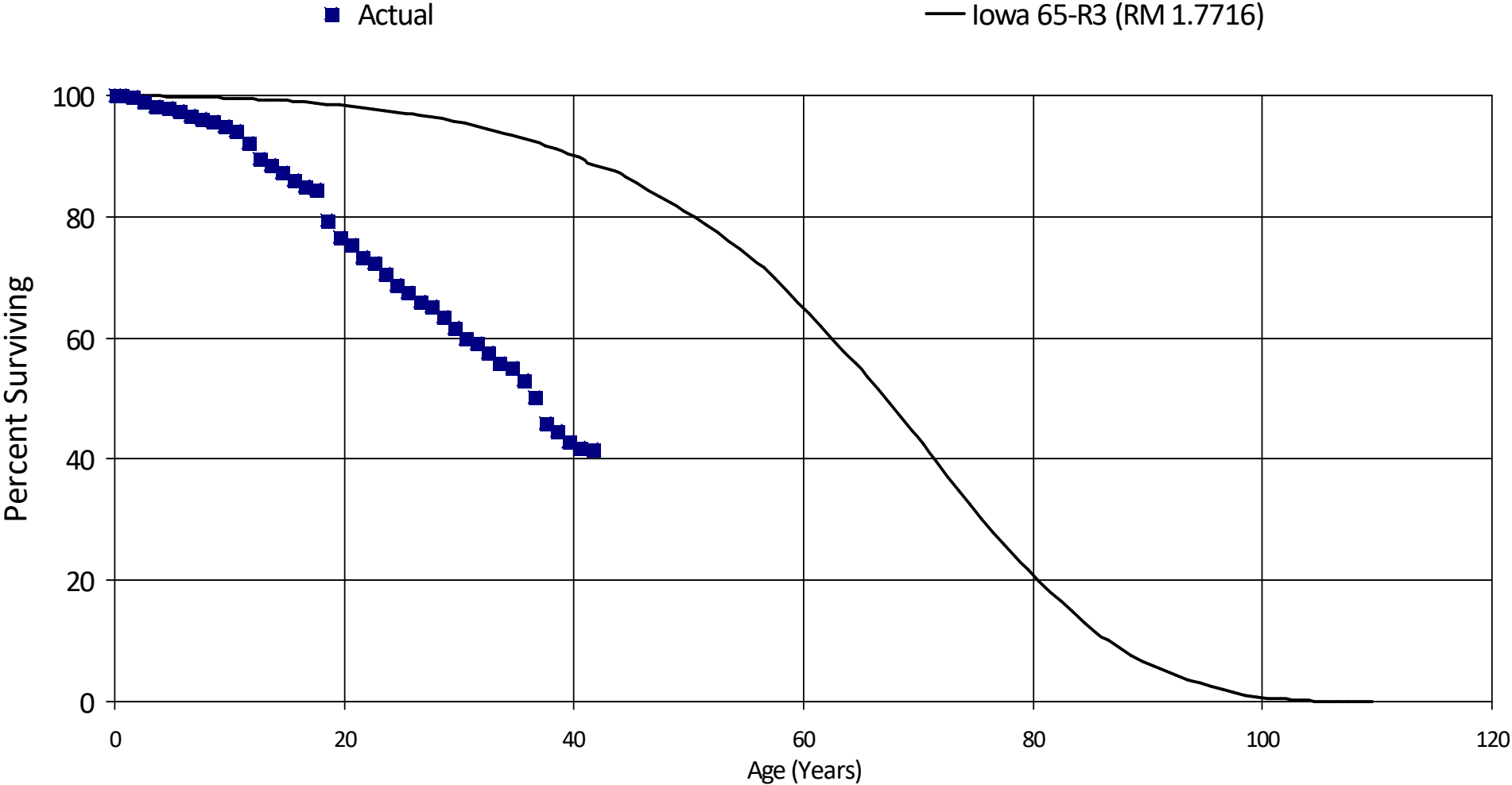
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,687,488	0	0.00000	1.00000	100.00
0.5	1,687,488	5,655	0.00335	0.99665	100.00
1.5	1,681,833	4,325	0.00257	0.99743	99.66
2.5	1,677,508	6,292	0.00375	0.99625	99.40
3.5	1,671,216	49,400	0.02956	0.97044	99.03
4.5	1,621,817	40,526	0.02499	0.97501	96.10
5.5	1,581,291	104,684	0.06620	0.93380	93.70
6.5	1,476,607	92,647	0.06274	0.93726	87.50
7.5	1,383,960	56,711	0.04098	0.95902	82.01
8.5	1,327,249	17,364	0.01308	0.98692	78.65
9.5	1,306,123	96,822	0.07413	0.92587	77.62
10.5	1,209,301	143,945	0.11903	0.88097	71.87
11.5	1,065,356	131,722	0.12364	0.87636	63.32
Totals:		750,093			

Toronto Hydro

Account 3615 - U/G - Primary PILC Cable

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3615 - U/G - Primary PILC Cable

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	192,079,560	69,493	0.00036	0.99964	100.00
0.5	188,065,032	206,202	0.00110	0.99890	99.96
1.5	181,511,659	1,596,455	0.00880	0.99120	99.85
2.5	172,061,294	1,358,763	0.00790	0.99210	98.97
3.5	162,638,941	516,444	0.00318	0.99682	98.19
4.5	159,738,604	588,085	0.00368	0.99632	97.88
5.5	154,790,505	1,481,497	0.00957	0.99043	97.52
6.5	147,703,182	751,060	0.00508	0.99492	96.59
7.5	141,910,175	667,810	0.00471	0.99529	96.10
8.5	130,986,321	976,092	0.00745	0.99255	95.65
9.5	122,506,767	1,165,279	0.00951	0.99049	94.94
10.5	118,717,488	2,275,685	0.01917	0.98083	94.04
11.5	111,617,863	3,344,999	0.02997	0.97003	92.24
12.5	103,678,023	1,020,129	0.00984	0.99016	89.48
13.5	91,314,080	1,328,989	0.01455	0.98545	88.60
14.5	78,367,172	1,249,475	0.01594	0.98406	87.31
15.5	66,194,508	660,211	0.00997	0.99003	85.92
16.5	55,481,244	385,950	0.00696	0.99304	85.06
17.5	48,835,355	2,843,994	0.05824	0.94176	84.47
18.5	38,348,552	1,345,268	0.03508	0.96492	79.55
19.5	23,752,236	417,828	0.01759	0.98241	76.76
20.5	23,829,896	688,214	0.02888	0.97112	75.41
21.5	22,495,775	240,920	0.01071	0.98929	73.23
22.5	20,768,130	517,467	0.02492	0.97508	72.45
23.5	20,250,663	519,965	0.02568	0.97432	70.64
24.5	17,171,143	306,785	0.01787	0.98213	68.83
25.5	14,547,469	334,385	0.02299	0.97701	67.60
26.5	11,470,013	146,987	0.01281	0.98719	66.05

Toronto Hydro

Account 3615 - U/G - Primary PILC Cable

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

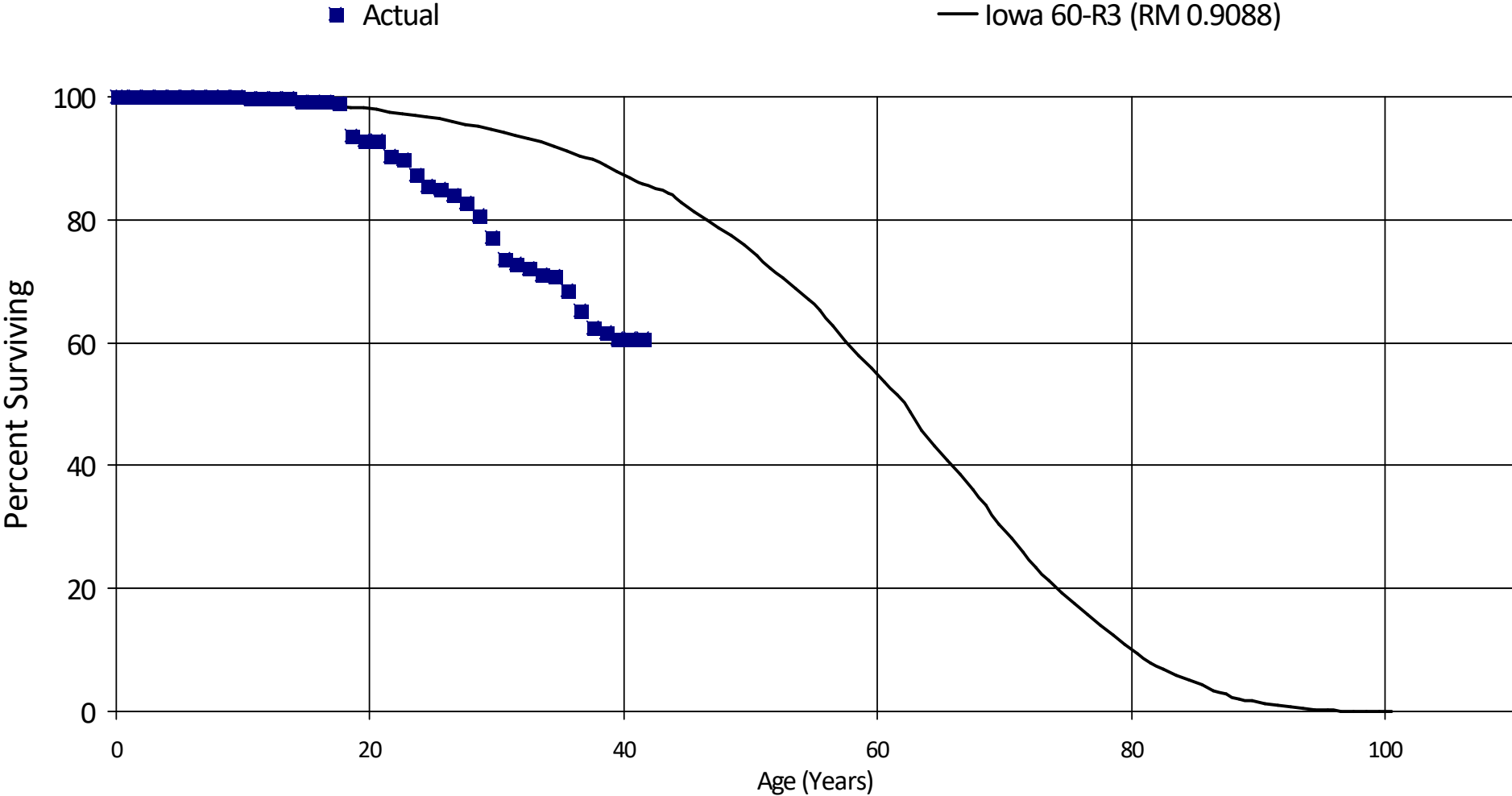
27.5	8,891,584	224,067	0.02520	0.97480	65.20
28.5	7,169,300	210,064	0.02930	0.97070	63.56
29.5	5,820,326	178,436	0.03066	0.96934	61.70
30.5	4,015,977	37,731	0.00940	0.99060	59.81
31.5	3,289,607	91,674	0.02787	0.97213	59.25
32.5	1,778,162	54,575	0.03069	0.96931	57.60
33.5	1,438,521	19,595	0.01362	0.98638	55.83
34.5	1,418,926	55,265	0.03895	0.96105	55.07
35.5	1,363,661	70,103	0.05141	0.94859	52.93
36.5	1,293,558	106,937	0.08267	0.91733	50.21
37.5	956,703	27,627	0.02888	0.97112	46.06
38.5	639,677	24,466	0.03825	0.96175	44.73
39.5	319,559	7,633	0.02389	0.97611	43.02
40.5	155,210	1,666	0.01073	0.98927	41.99
41.5	27,297	582	0.02132	0.97868	41.54
Totals:		28,114,852			

Toronto Hydro

Account 3617 - U/G - Secondary Cable in Duct

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3617 - U/G - Secondary Cable in Duct

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	215,156,577	6,612	0.00003	0.99997	100.00
0.5	186,704,150	14,502	0.00008	0.99992	100.00
1.5	164,699,369	10,464	0.00006	0.99994	99.99
2.5	144,279,733	26,640	0.00018	0.99982	99.98
3.5	121,586,056	1,869	0.00002	0.99998	99.96
4.5	108,516,734	8,305	0.00008	0.99992	99.96
5.5	93,622,362	11,821	0.00013	0.99987	99.95
6.5	80,248,402	2,362	0.00003	0.99997	99.94
7.5	66,559,537	13,511	0.00020	0.99980	99.94
8.5	52,664,832	18,347	0.00035	0.99965	99.92
9.5	34,780,149	12,059	0.00035	0.99965	99.89
10.5	30,453,565	30,163	0.00099	0.99901	99.86
11.5	21,094,469	9,071	0.00043	0.99957	99.76
12.5	13,008,932	12,176	0.00094	0.99906	99.72
13.5	11,734,415	38,367	0.00327	0.99673	99.63
14.5	9,839,304	7,502	0.00076	0.99924	99.30
15.5	8,511,935	2,270	0.00027	0.99973	99.22
16.5	7,390,067	7,755	0.00105	0.99895	99.19
17.5	6,765,376	378,498	0.05595	0.94405	99.09
18.5	5,555,812	33,007	0.00594	0.99406	93.55
19.5	3,903,094	3,716	0.00095	0.99905	92.99
20.5	3,941,547	106,721	0.02708	0.97292	92.90
21.5	3,930,632	21,140	0.00538	0.99462	90.38
22.5	3,753,347	105,499	0.02811	0.97189	89.89
23.5	3,647,848	76,340	0.02093	0.97907	87.36
24.5	3,156,277	15,158	0.00480	0.99520	85.53
25.5	2,690,276	36,645	0.01362	0.98638	85.12
26.5	2,094,858	32,522	0.01552	0.98448	83.96

Toronto Hydro

Account 3617 - U/G - Secondary Cable in Duct

Placement Band - 1980 - 2022 Experience Band - 2014 - 2022

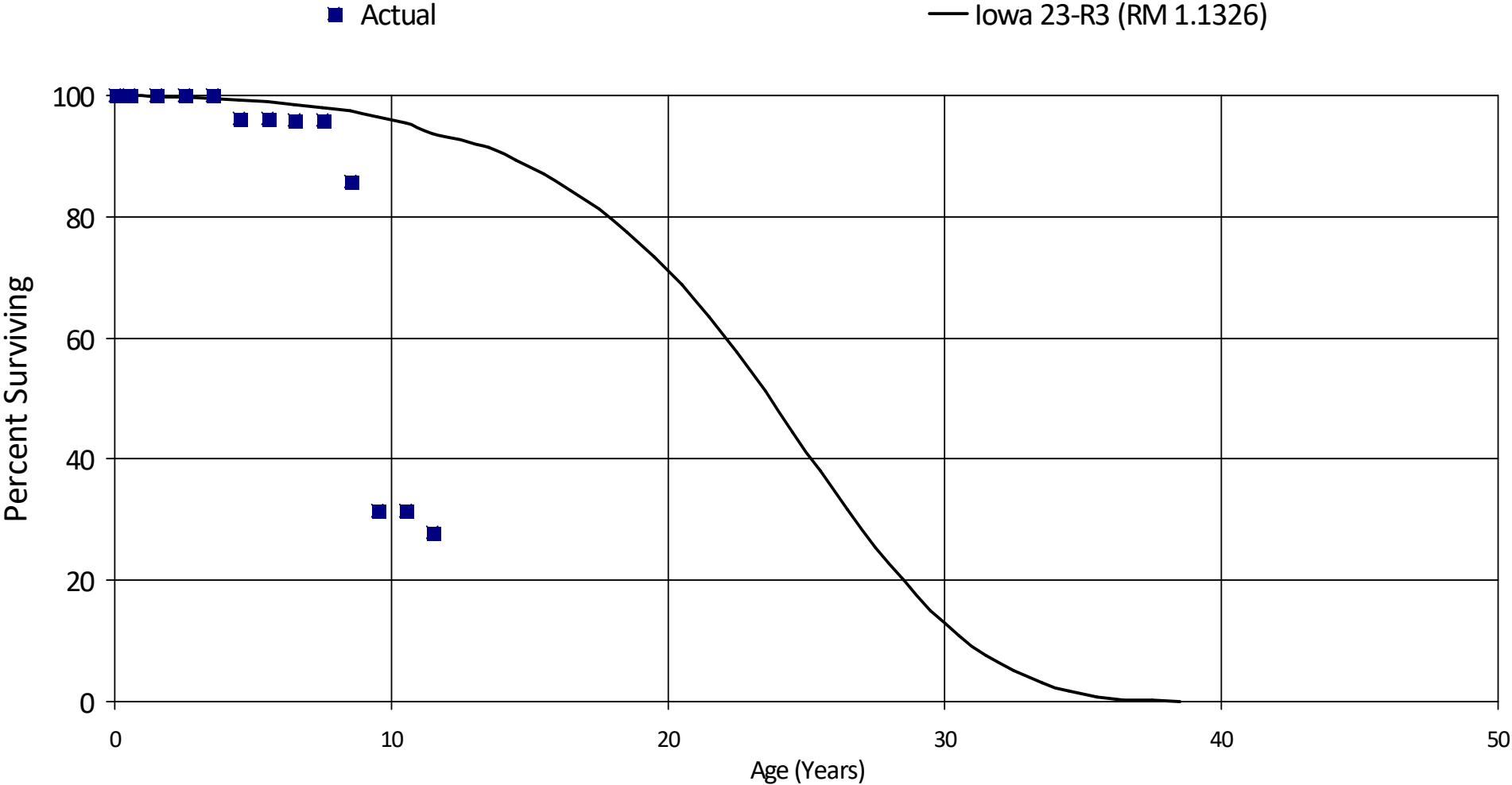
27.5	1,563,526	35,055	0.02242	0.97758	82.66
28.5	1,261,013	55,100	0.04370	0.95630	80.81
29.5	973,032	45,723	0.04699	0.95301	77.28
30.5	655,245	7,760	0.01184	0.98816	73.65
31.5	536,368	4,646	0.00866	0.99134	72.78
32.5	280,138	4,171	0.01489	0.98511	72.15
33.5	218,391	1,155	0.00529	0.99471	71.08
34.5	197,963	5,985	0.03023	0.96977	70.70
35.5	191,979	9,317	0.04853	0.95147	68.56
36.5	182,662	7,811	0.04276	0.95724	65.23
37.5	125,958	1,352	0.01073	0.98927	62.44
38.5	73,998	1,472	0.01989	0.98011	61.77
39.5	19,965	0	0.00000	1.00000	60.54
40.5	8,089	0	0.00000	1.00000	60.54
41.5	1,681	0	0.00000	1.00000	60.54
Totals:		1,222,589			

Toronto Hydro

Account 3619 - U/G - Secondary Cable Direct Buried

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3619 - U/G - Secondary Cable Direct Buried

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

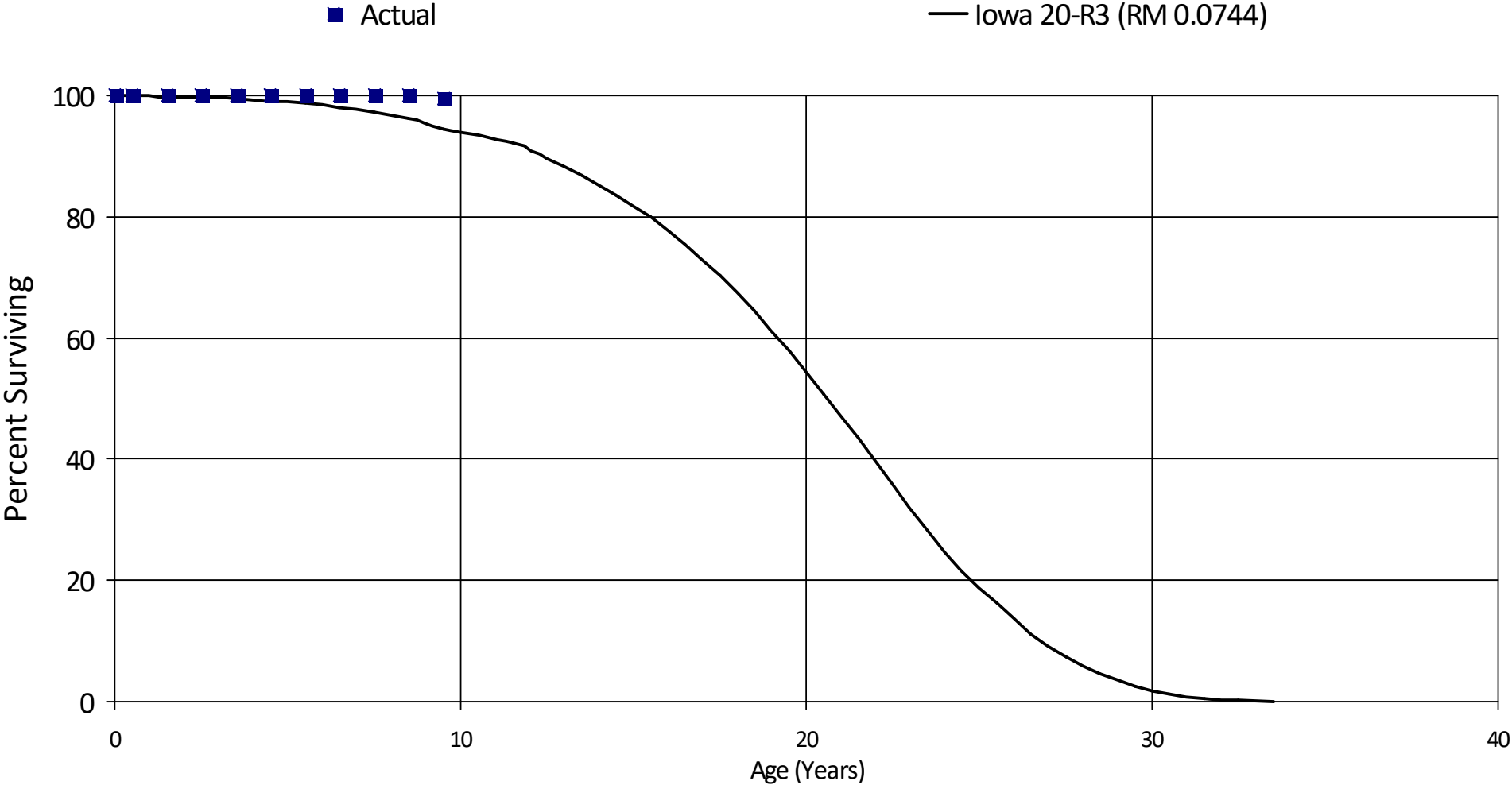
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	345,480	0	0.00000	1.00000	100.00
0.5	345,480	0	0.00000	1.00000	100.00
1.5	345,480	0	0.00000	1.00000	100.00
2.5	345,480	0	0.00000	1.00000	100.00
3.5	345,480	13,063	0.03781	0.96219	100.00
4.5	332,417	0	0.00000	1.00000	96.22
5.5	332,417	586	0.00176	0.99824	96.22
6.5	331,831	710	0.00214	0.99786	96.05
7.5	331,121	34,401	0.10389	0.89611	95.84
8.5	296,719	187,630	0.63235	0.36765	85.88
9.5	108,295	334	0.00308	0.99692	31.57
10.5	107,961	12,418	0.11502	0.88498	31.47
11.5	95,493	87,590	0.91724	0.08276	27.85
	Totals:	336,732			

Toronto Hydro

Account 3621 - U/G - Handwells

Placement Band - 2012 - 2022 Experience Band - 2021 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3621 - U/G - Handwells

Placement Band - 2012 - 2022 Experience Band - 2021 - 2022

RETIREMENT RATE ANALYSIS

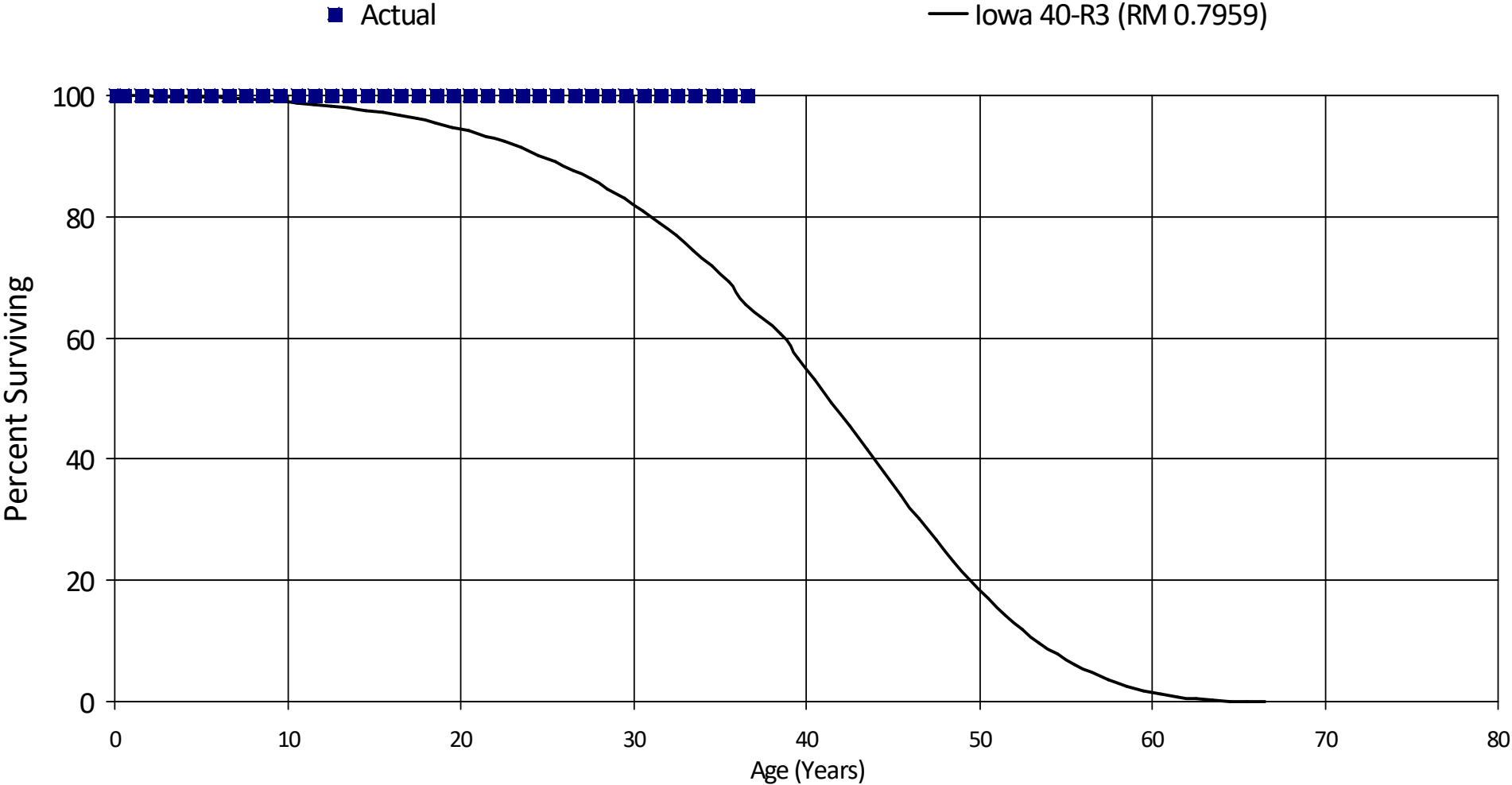
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	35,552,700	0	0.00000	1.00000	100.00
0.5	35,552,700	0	0.00000	1.00000	100.00
1.5	35,552,700	0	0.00000	1.00000	100.00
2.5	35,552,700	0	0.00000	1.00000	100.00
3.5	35,549,708	0	0.00000	1.00000	100.00
4.5	35,484,063	0	0.00000	1.00000	100.00
5.5	35,475,075	0	0.00000	1.00000	100.00
6.5	34,303,968	0	0.00000	1.00000	100.00
7.5	27,301,370	0	0.00000	1.00000	100.00
8.5	15,814,693	61,201	0.00387	0.99613	100.00
9.5	3,429,225	0	0.00000	1.00000	99.61
Totals:		61,201			

Toronto Hydro

Account 3623 - U/G - ATS Switches

Placement Band - 1985 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3623 - U/G - ATS Switches

Placement Band - 1985 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	286,381	0	0.00000	1.00000	100.00
0.5	286,381	0	0.00000	1.00000	100.00
1.5	286,381	0	0.00000	1.00000	100.00
2.5	286,381	0	0.00000	1.00000	100.00
3.5	286,381	0	0.00000	1.00000	100.00
4.5	286,381	0	0.00000	1.00000	100.00
5.5	286,381	0	0.00000	1.00000	100.00
6.5	286,381	0	0.00000	1.00000	100.00
7.5	286,381	0	0.00000	1.00000	100.00
8.5	286,381	0	0.00000	1.00000	100.00
9.5	286,381	0	0.00000	1.00000	100.00
10.5	286,381	0	0.00000	1.00000	100.00
11.5	287,117	0	0.00000	1.00000	100.00
12.5	287,117	0	0.00000	1.00000	100.00
13.5	275,460	0	0.00000	1.00000	100.00
14.5	261,891	0	0.00000	1.00000	100.00
15.5	249,874	0	0.00000	1.00000	100.00
16.5	239,820	0	0.00000	1.00000	100.00
17.5	234,170	0	0.00000	1.00000	100.00
18.5	226,647	0	0.00000	1.00000	100.00
19.5	212,493	0	0.00000	1.00000	100.00
20.5	212,915	0	0.00000	1.00000	100.00
21.5	210,821	0	0.00000	1.00000	100.00
22.5	209,306	0	0.00000	1.00000	100.00
23.5	209,306	0	0.00000	1.00000	100.00
24.5	206,698	0	0.00000	1.00000	100.00
25.5	204,333	0	0.00000	1.00000	100.00
26.5	201,460	0	0.00000	1.00000	100.00

Toronto Hydro

Account 3623 - U/G - ATS Switches

Placement Band - 1985 - 2022 Experience Band - 2022 - 2022

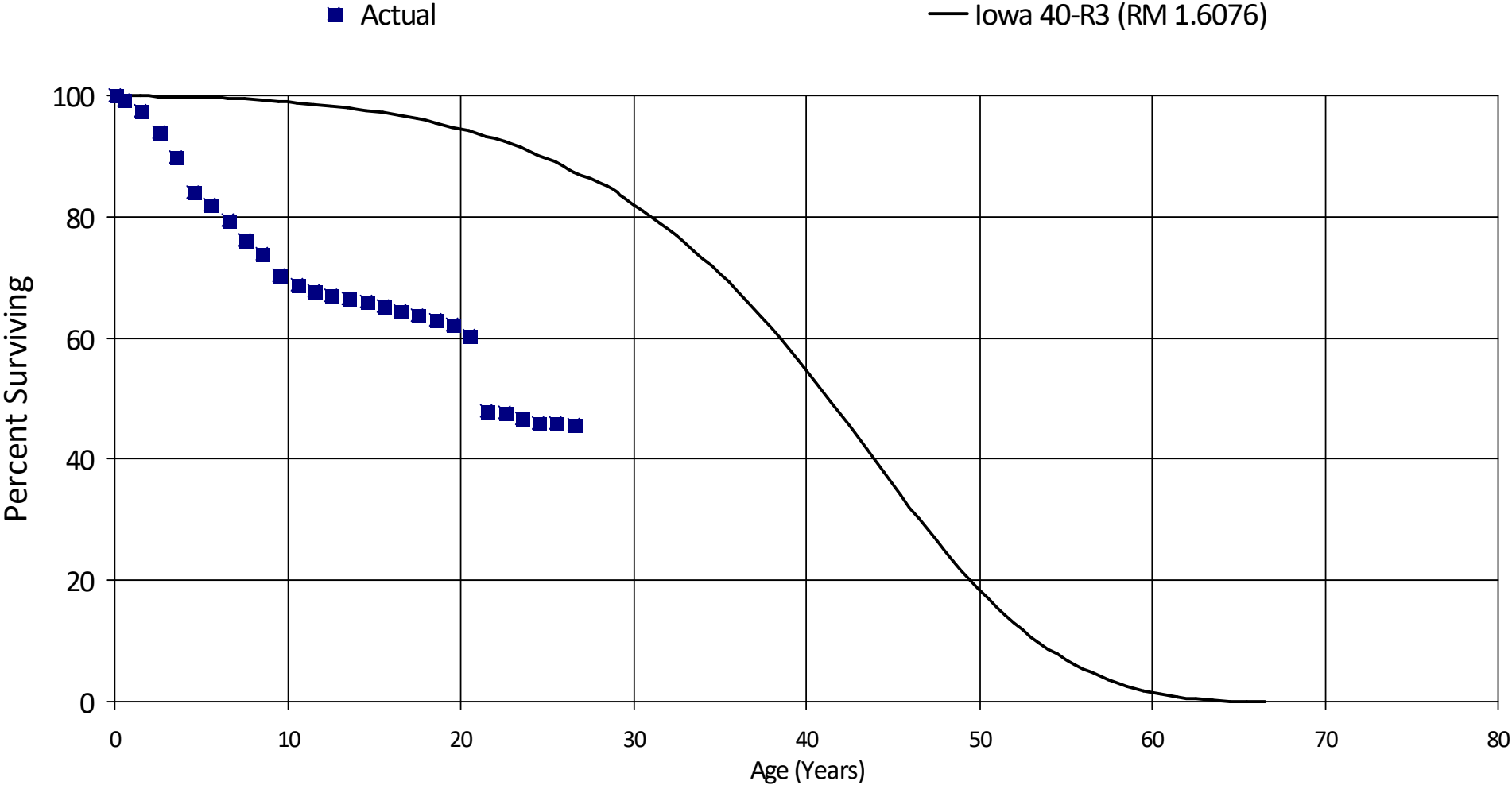
27.5	199,345	0	0.00000	1.00000	100.00
28.5	198,031	0	0.00000	1.00000	100.00
29.5	196,861	0	0.00000	1.00000	100.00
30.5	195,464	0	0.00000	1.00000	100.00
31.5	194,869	0	0.00000	1.00000	100.00
32.5	193,870	0	0.00000	1.00000	100.00
33.5	279	0	0.00000	1.00000	100.00
34.5	188	0	0.00000	1.00000	100.00
35.5	138	0	0.00000	1.00000	100.00
36.5	114	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 3625 - U/G - Switch Installation

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3625 - U/G - Switch Installation

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	160,952,342	1,170,209	0.00727	0.99273	100.00
0.5	143,872,851	2,799,874	0.01946	0.98054	99.27
1.5	127,579,219	4,502,876	0.03529	0.96471	97.34
2.5	104,768,109	4,566,383	0.04359	0.95641	93.90
3.5	86,412,507	5,681,792	0.06575	0.93425	89.81
4.5	70,144,167	1,608,006	0.02292	0.97708	83.90
5.5	59,562,804	1,820,516	0.03056	0.96944	81.98
6.5	49,291,976	2,050,521	0.04160	0.95840	79.47
7.5	39,103,205	1,129,379	0.02888	0.97112	76.16
8.5	30,062,382	1,433,669	0.04769	0.95231	73.96
9.5	23,266,648	560,544	0.02409	0.97591	70.43
10.5	21,964,579	304,864	0.01388	0.98612	68.73
11.5	18,150,207	201,918	0.01112	0.98888	67.78
12.5	15,312,281	122,995	0.00803	0.99197	67.03
13.5	12,681,960	109,934	0.00867	0.99133	66.49
14.5	10,126,624	86,241	0.00852	0.99148	65.91
15.5	8,070,782	108,279	0.01342	0.98658	65.35
16.5	6,369,401	85,357	0.01340	0.98660	64.47
17.5	5,402,361	58,156	0.01076	0.98924	63.61
18.5	4,038,190	46,673	0.01156	0.98844	62.93
19.5	1,465,414	42,224	0.02881	0.97119	62.20
20.5	1,528,191	315,527	0.20647	0.79353	60.41
21.5	1,117,826	7,248	0.00648	0.99352	47.94
22.5	852,740	18,236	0.02139	0.97861	47.63
23.5	834,504	10,106	0.01211	0.98789	46.61
24.5	513,793	2,188	0.00426	0.99574	46.05
25.5	511,605	3,282	0.00642	0.99358	45.85
26.5	153,260	0	0.00000	1.00000	45.56

Toronto Hydro

Account 3625 - U/G - Switch Installation

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

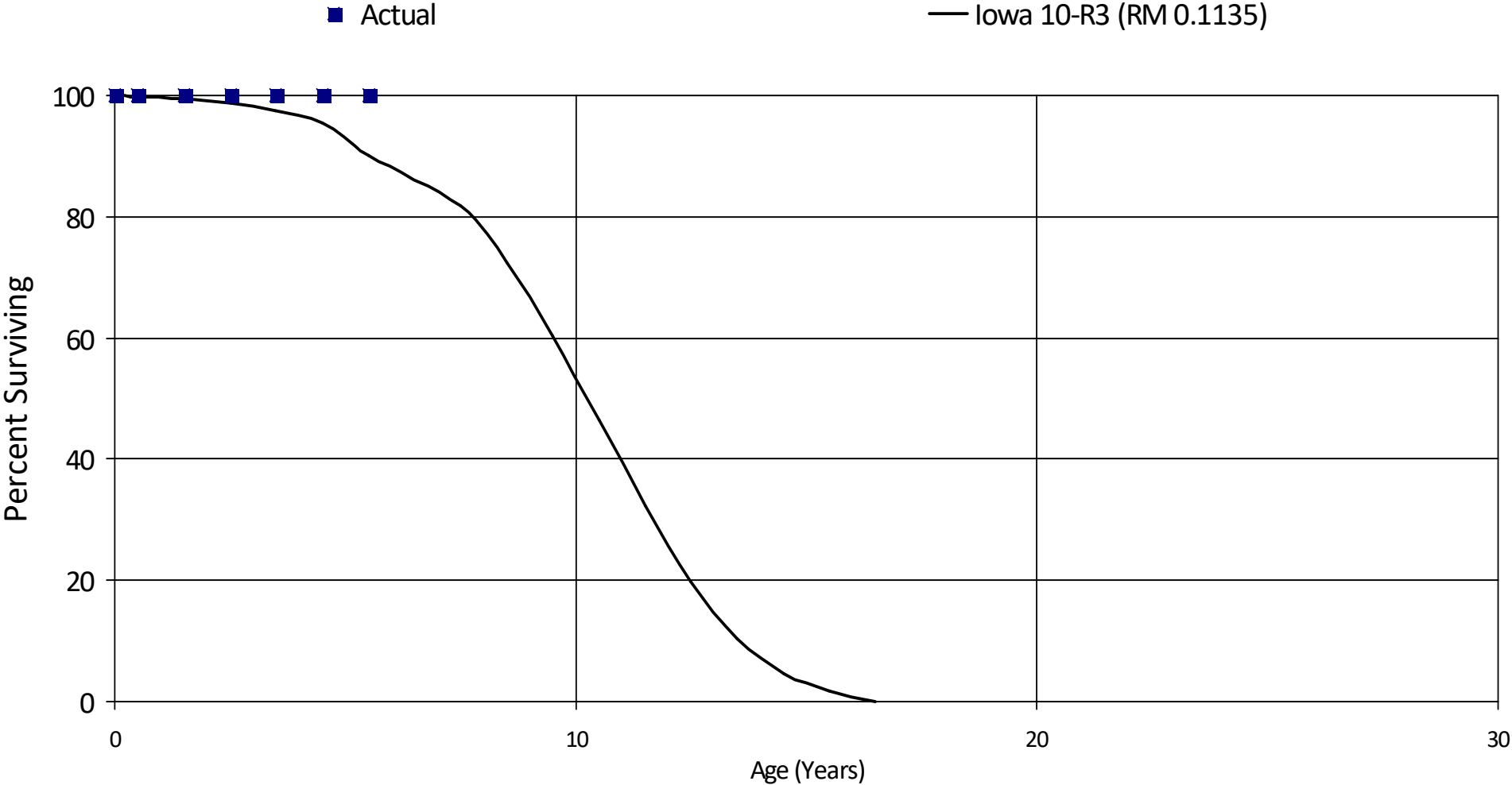
Totals:

Toronto Hydro

Account 3711 - Network Automation Vault Communication

Placement Band - 2016 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 3711 - Network Automation Vault Communication

Placement Band - 2016 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

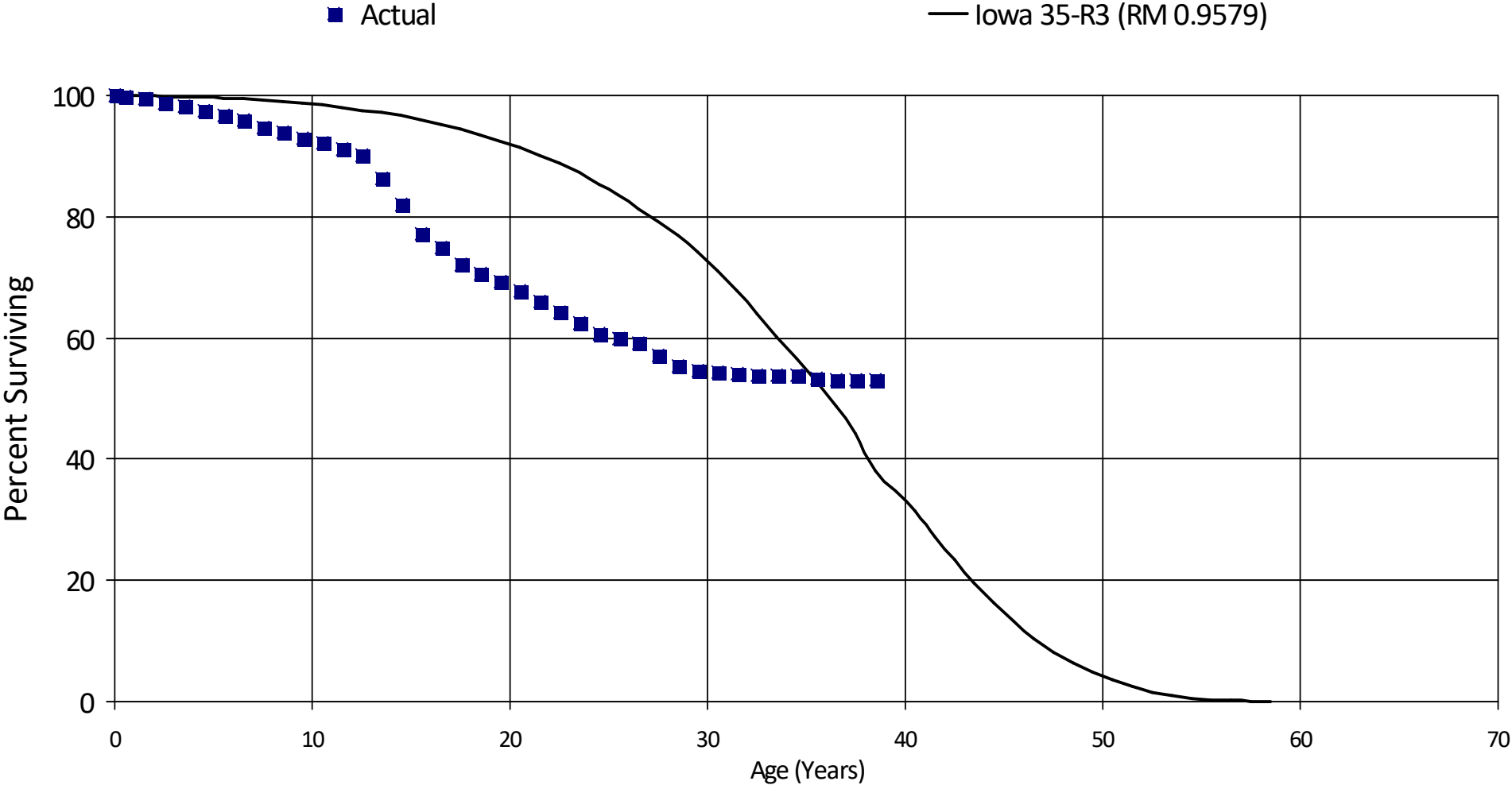
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	31,012,254	0	0.00000	1.00000	100.00
0.5	24,346,409	0	0.00000	1.00000	100.00
1.5	13,124,326	0	0.00000	1.00000	100.00
2.5	4,935,882	0	0.00000	1.00000	100.00
3.5	2,144,776	0	0.00000	1.00000	100.00
4.5	2,055,667	0	0.00000	1.00000	100.00
5.5	368,634	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 4011 - Dist Transf - General Overhead

Placement Band - 1983 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4011 - Dist Transf - General Overhead

Placement Band - 1983 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	238,863,845	621,791	0.00260	0.99740	100.00
0.5	216,831,970	769,699	0.00355	0.99645	99.74
1.5	185,866,093	1,342,761	0.00722	0.99278	99.39
2.5	165,714,548	872,749	0.00527	0.99473	98.67
3.5	148,231,360	1,117,506	0.00754	0.99246	98.15
4.5	137,195,438	1,022,337	0.00745	0.99255	97.41
5.5	124,634,680	1,090,063	0.00875	0.99125	96.68
6.5	108,422,820	1,250,330	0.01153	0.98847	95.83
7.5	87,646,912	784,356	0.00895	0.99105	94.73
8.5	71,912,050	715,585	0.00995	0.99005	93.88
9.5	55,917,531	564,273	0.01009	0.98991	92.95
10.5	50,245,681	541,537	0.01078	0.98922	92.01
11.5	32,290,725	325,793	0.01009	0.98991	91.02
12.5	23,641,431	977,320	0.04134	0.95866	90.10
13.5	20,575,846	1,050,327	0.05105	0.94895	86.38
14.5	17,899,752	1,030,316	0.05756	0.94244	81.97
15.5	15,295,169	452,079	0.02956	0.97044	77.25
16.5	12,977,274	504,281	0.03886	0.96114	74.97
17.5	10,592,485	218,915	0.02067	0.97933	72.06
18.5	8,226,460	161,101	0.01958	0.98042	70.57
19.5	6,412,985	122,629	0.01912	0.98088	69.19
20.5	7,336,828	199,358	0.02717	0.97283	67.87
21.5	7,715,653	213,637	0.02769	0.97231	66.03
22.5	6,452,490	174,348	0.02702	0.97298	64.20
23.5	5,501,557	152,600	0.02774	0.97226	62.47
24.5	5,206,104	82,275	0.01580	0.98420	60.74
25.5	3,919,951	44,638	0.01139	0.98861	59.78
26.5	3,175,414	106,910	0.03367	0.96633	59.10

Toronto Hydro

Account 4011 - Dist Transf - General Overhead

Placement Band - 1983 - 2022 Experience Band - 2014 - 2022

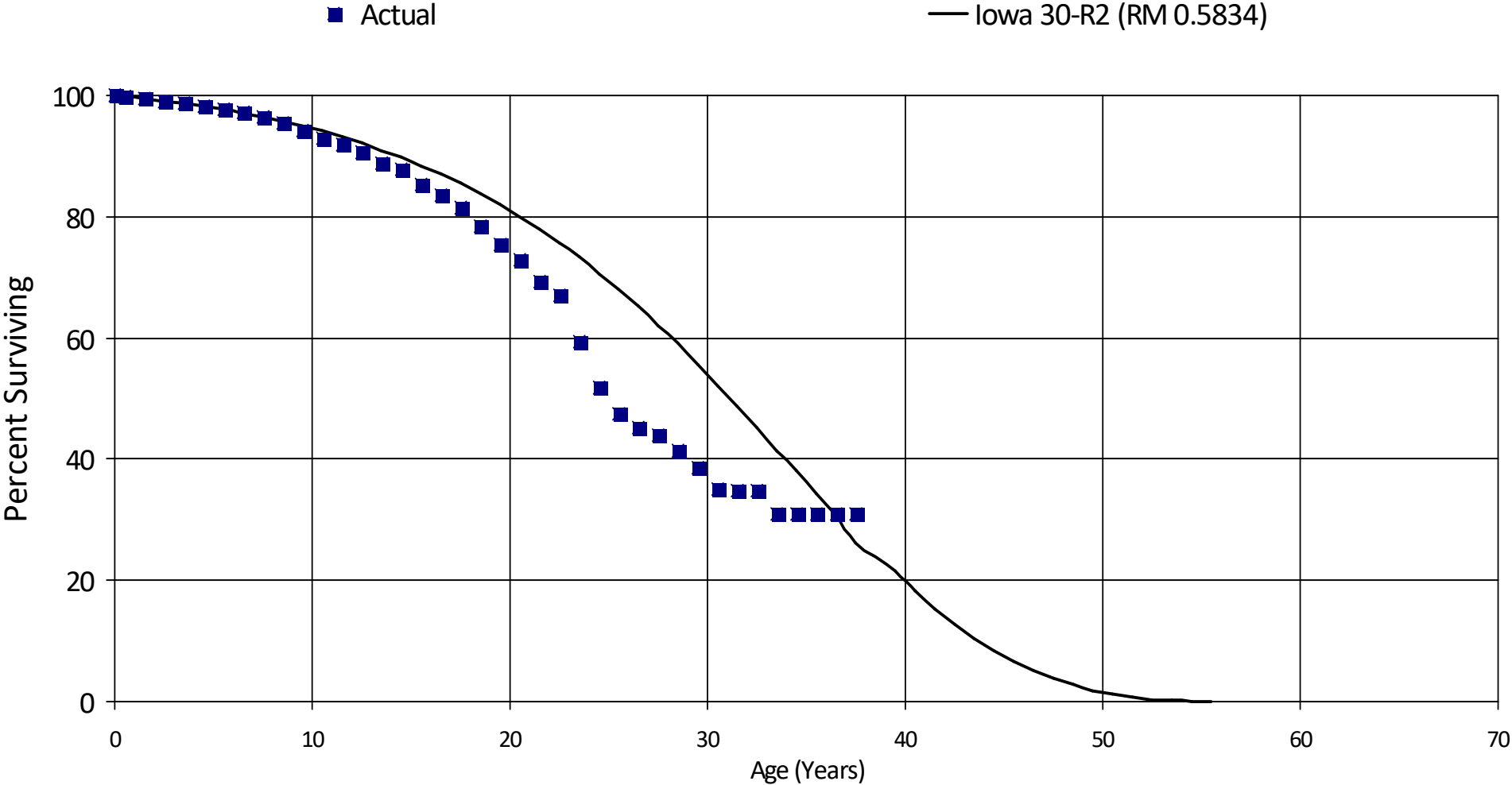
27.5	2,426,340	73,749	0.03040	0.96960	57.11
28.5	1,866,017	27,543	0.01476	0.98524	55.37
29.5	1,489,532	7,906	0.00531	0.99469	54.55
30.5	1,028,239	3,519	0.00342	0.99658	54.26
31.5	645,814	2,485	0.00385	0.99615	54.07
32.5	335,068	206	0.00061	0.99939	53.86
33.5	151,562	204	0.00135	0.99865	53.83
34.5	59,530	379	0.00637	0.99363	53.76
35.5	35,487	206	0.00580	0.99420	53.42
36.5	33,422	116	0.00347	0.99653	53.11
37.5	11	0	0.00000	1.00000	52.93
38.5	0	0	0.00000	0.00000	52.93
Totals:		16,625,827			

Toronto Hydro

Account 4013 - Dist Transf - Underground

Placement Band - 1984 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4013 - Dist Transf - Underground

Placement Band - 1984 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	506,093,611	668,210	0.00132	0.99868	100.00
0.5	473,036,142	1,289,696	0.00273	0.99727	99.87
1.5	428,722,495	2,106,059	0.00491	0.99509	99.60
2.5	383,028,672	1,375,858	0.00359	0.99641	99.11
3.5	338,397,348	1,546,892	0.00457	0.99543	98.75
4.5	302,884,611	1,463,846	0.00483	0.99517	98.30
5.5	264,990,364	1,534,428	0.00579	0.99421	97.83
6.5	235,562,664	2,227,904	0.00946	0.99054	97.26
7.5	211,815,853	1,955,414	0.00923	0.99077	96.34
8.5	190,388,609	2,790,979	0.01466	0.98534	95.45
9.5	170,306,051	2,224,755	0.01306	0.98694	94.05
10.5	162,159,373	1,849,101	0.01140	0.98860	92.82
11.5	146,846,500	1,860,754	0.01267	0.98733	91.76
12.5	129,105,642	2,429,856	0.01882	0.98118	90.60
13.5	113,485,456	1,437,054	0.01266	0.98734	88.89
14.5	98,401,943	2,751,263	0.02796	0.97204	87.76
15.5	87,091,828	1,961,251	0.02252	0.97748	85.31
16.5	75,636,195	1,818,274	0.02404	0.97596	83.39
17.5	63,924,768	2,344,464	0.03668	0.96332	81.39
18.5	50,543,501	1,940,435	0.03839	0.96161	78.40
19.5	37,154,478	1,262,071	0.03397	0.96603	75.39
20.5	41,498,506	1,954,628	0.04710	0.95290	72.83
21.5	37,327,452	1,237,946	0.03316	0.96684	69.40
22.5	29,981,993	3,434,139	0.11454	0.88546	67.10
23.5	23,346,288	3,028,095	0.12970	0.87030	59.41
24.5	20,318,193	1,663,833	0.08189	0.91811	51.70
25.5	18,291,704	841,322	0.04599	0.95401	47.47
26.5	14,231,215	398,386	0.02799	0.97201	45.29

Toronto Hydro

Account 4013 - Dist Transf - Underground

Placement Band - 1984 - 2022 Experience Band - 2014 - 2022

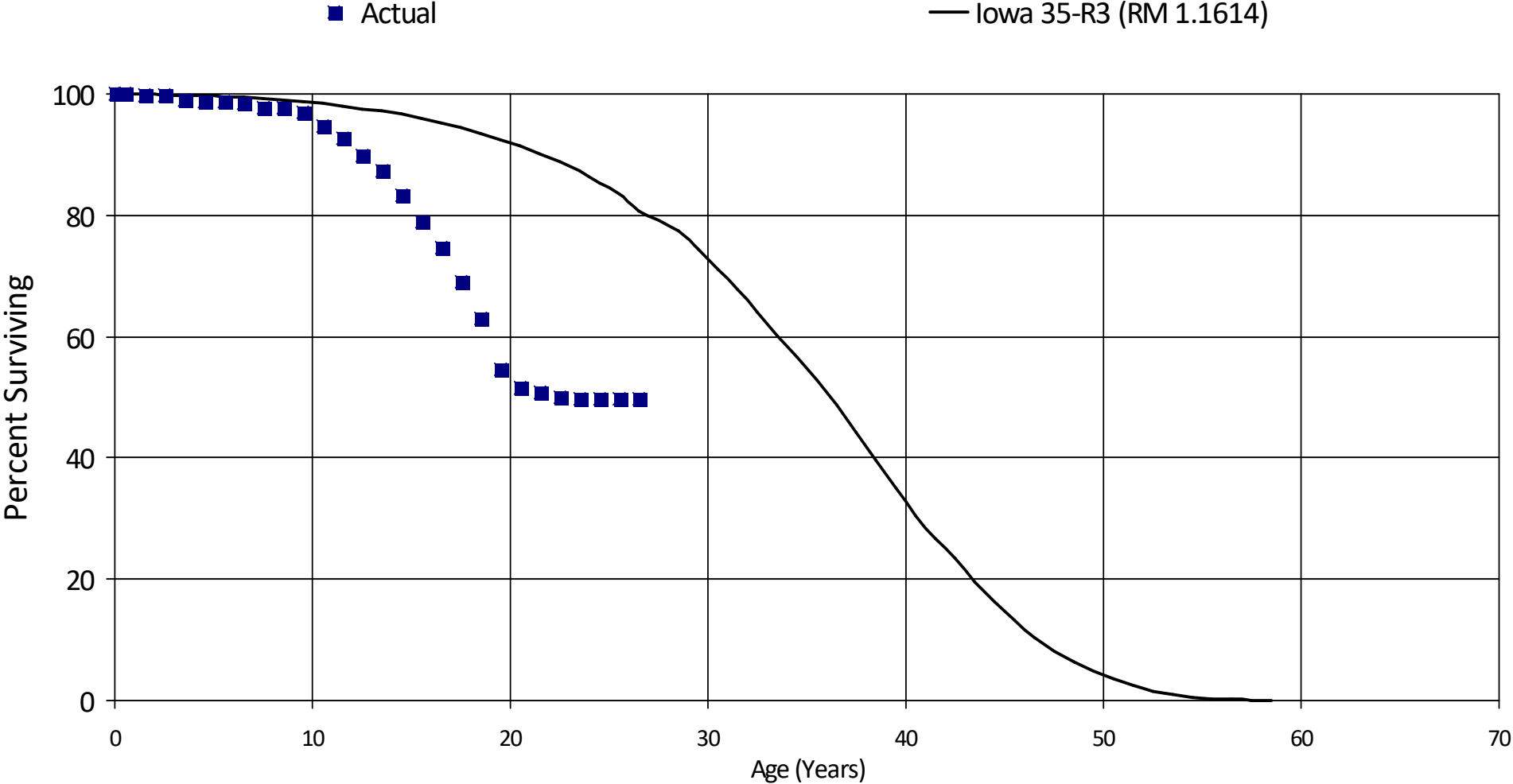
27.5	10,495,127	618,452	0.05893	0.94107	44.02
28.5	6,872,144	488,358	0.07106	0.92894	41.43
29.5	6,383,786	558,224	0.08744	0.91256	38.49
30.5	4,327,374	41,947	0.00969	0.99031	35.12
31.5	2,889,743	3,584	0.00124	0.99876	34.78
32.5	1,280,703	137,197	0.10713	0.89287	34.74
33.5	201,720	6	0.00003	0.99997	31.02
34.5	201,713	0	0.00000	1.00000	31.02
35.5	46,830	0	0.00000	1.00000	31.02
36.5	46,654	0	0.00000	1.00000	31.02
37.5	-442	-443	1.00215	-0.00215	31.02
Totals:		53,244,238			

Toronto Hydro

Account 4015 - Dist Transf - U/G Network w/ Protector

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4015 - Dist Transf - U/G Network w/ Protector

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	201,320,569	116,159	0.00058	0.99942	100.00
0.5	176,818,471	147,907	0.00084	0.99916	99.94
1.5	162,190,445	96,370	0.00059	0.99941	99.86
2.5	141,003,145	1,243,037	0.00882	0.99118	99.80
3.5	122,158,051	277,357	0.00227	0.99773	98.92
4.5	104,652,086	30,735	0.00029	0.99971	98.70
5.5	88,431,606	83,371	0.00094	0.99906	98.67
6.5	72,851,951	557,294	0.00765	0.99235	98.58
7.5	62,482,095	132,040	0.00211	0.99789	97.83
8.5	49,420,744	355,419	0.00719	0.99281	97.62
9.5	34,321,048	779,502	0.02271	0.97729	96.92
10.5	28,673,441	619,017	0.02159	0.97841	94.72
11.5	22,192,240	682,629	0.03076	0.96924	92.67
12.5	12,262,036	333,999	0.02724	0.97276	89.82
13.5	10,521,262	502,424	0.04775	0.95225	87.37
14.5	8,285,322	428,183	0.05168	0.94832	83.20
15.5	6,450,001	342,469	0.05310	0.94690	78.90
16.5	4,982,416	385,706	0.07741	0.92259	74.71
17.5	3,744,075	320,962	0.08573	0.91427	68.93
18.5	1,975,625	267,290	0.13529	0.86471	63.02
19.5	1,817,442	102,092	0.05617	0.94383	54.49
20.5	2,537,578	29,244	0.01152	0.98848	51.43
21.5	2,316,060	37,693	0.01627	0.98373	50.84
22.5	1,708,933	5,686	0.00333	0.99667	50.01
23.5	1,246,700	0	0.00000	1.00000	49.84
24.5	1,067,201	0	0.00000	1.00000	49.84
25.5	446,302	0	0.00000	1.00000	49.84
26.5	164,902	0	0.00000	1.00000	49.84

Toronto Hydro

Account 4015 - Dist Transf - U/G Network w/ Protector

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

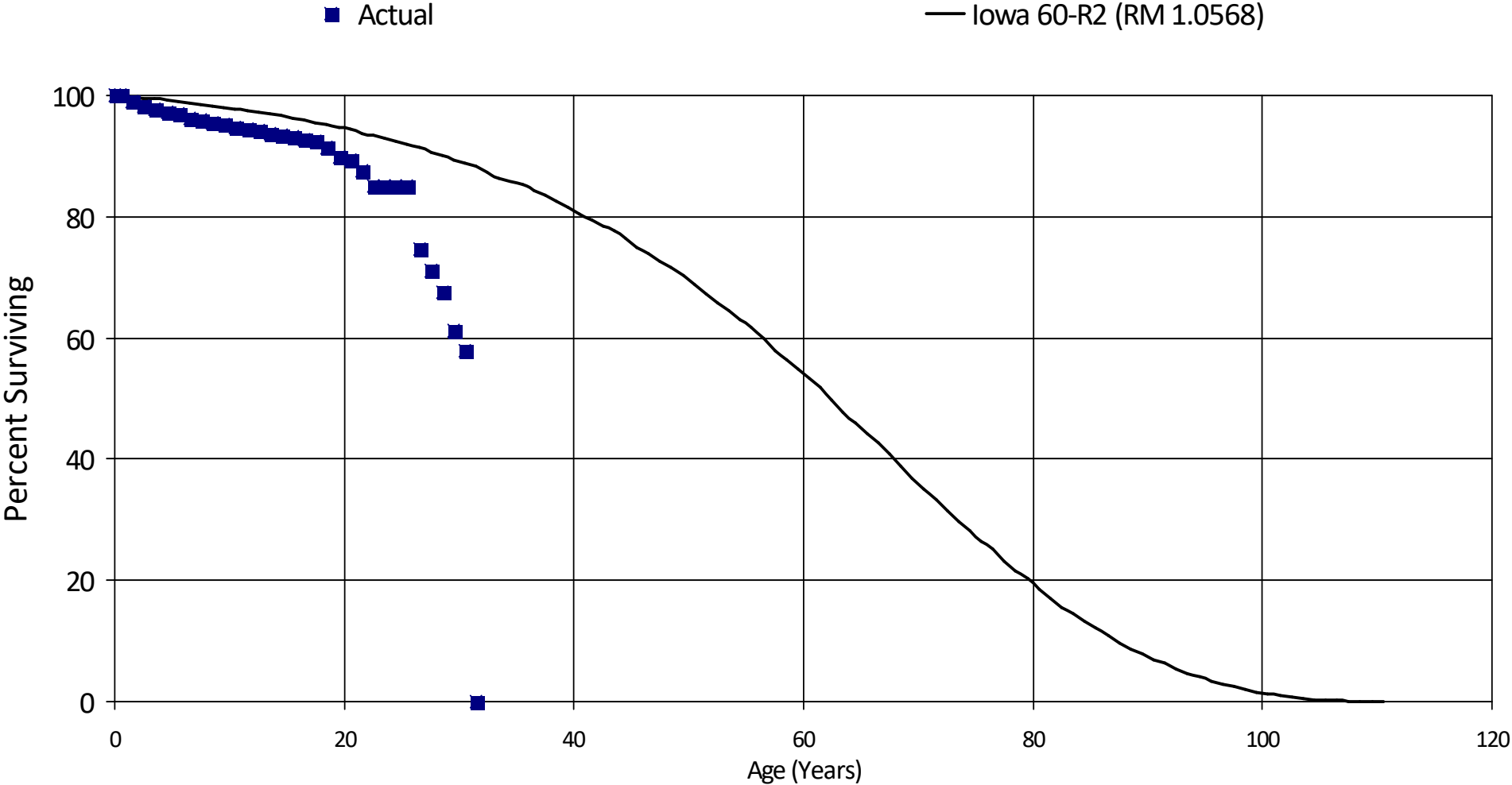
Totals:

Toronto Hydro

Account 4111 - O/H Services

Placement Band - 1988 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4111 - O/H Services

Placement Band - 1988 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	80,938,525	84,867	0.00105	0.99895	100.00
0.5	80,258,791	765,535	0.00954	0.99046	99.90
1.5	77,966,070	594,040	0.00762	0.99238	98.95
2.5	77,016,106	412,086	0.00535	0.99465	98.20
3.5	76,557,914	315,602	0.00412	0.99588	97.67
4.5	75,266,810	311,701	0.00414	0.99586	97.27
5.5	71,862,870	474,940	0.00661	0.99339	96.87
6.5	62,721,076	213,250	0.00340	0.99660	96.23
7.5	55,693,952	257,608	0.00463	0.99537	95.90
8.5	49,329,087	186,167	0.00377	0.99623	95.46
9.5	45,877,111	170,291	0.00371	0.99629	95.10
10.5	42,011,567	165,667	0.00394	0.99606	94.75
11.5	39,371,244	142,316	0.00361	0.99639	94.38
12.5	37,908,612	103,278	0.00272	0.99728	94.04
13.5	28,894,432	123,591	0.00428	0.99572	93.78
14.5	23,605,066	63,119	0.00267	0.99733	93.38
15.5	17,418,579	106,731	0.00613	0.99387	93.13
16.5	14,539,444	41,521	0.00286	0.99714	92.56
17.5	11,506,393	108,612	0.00944	0.99056	92.30
18.5	5,359,075	98,149	0.01831	0.98169	91.43
19.5	1,814,308	10,998	0.00606	0.99394	89.76
20.5	1,803,310	36,001	0.01996	0.98004	89.22
21.5	1,076,488	31,179	0.02896	0.97104	87.44
22.5	656	0	0.00000	1.00000	84.91
23.5	656	0	0.00000	1.00000	84.91
24.5	656	0	0.00000	1.00000	84.91
25.5	656	79	0.12038	0.87962	84.91
26.5	578	28	0.04847	0.95153	74.69

Toronto Hydro

Account 4111 - O/H Services

Placement Band - 1988 - 2022 Experience Band - 2014 - 2022

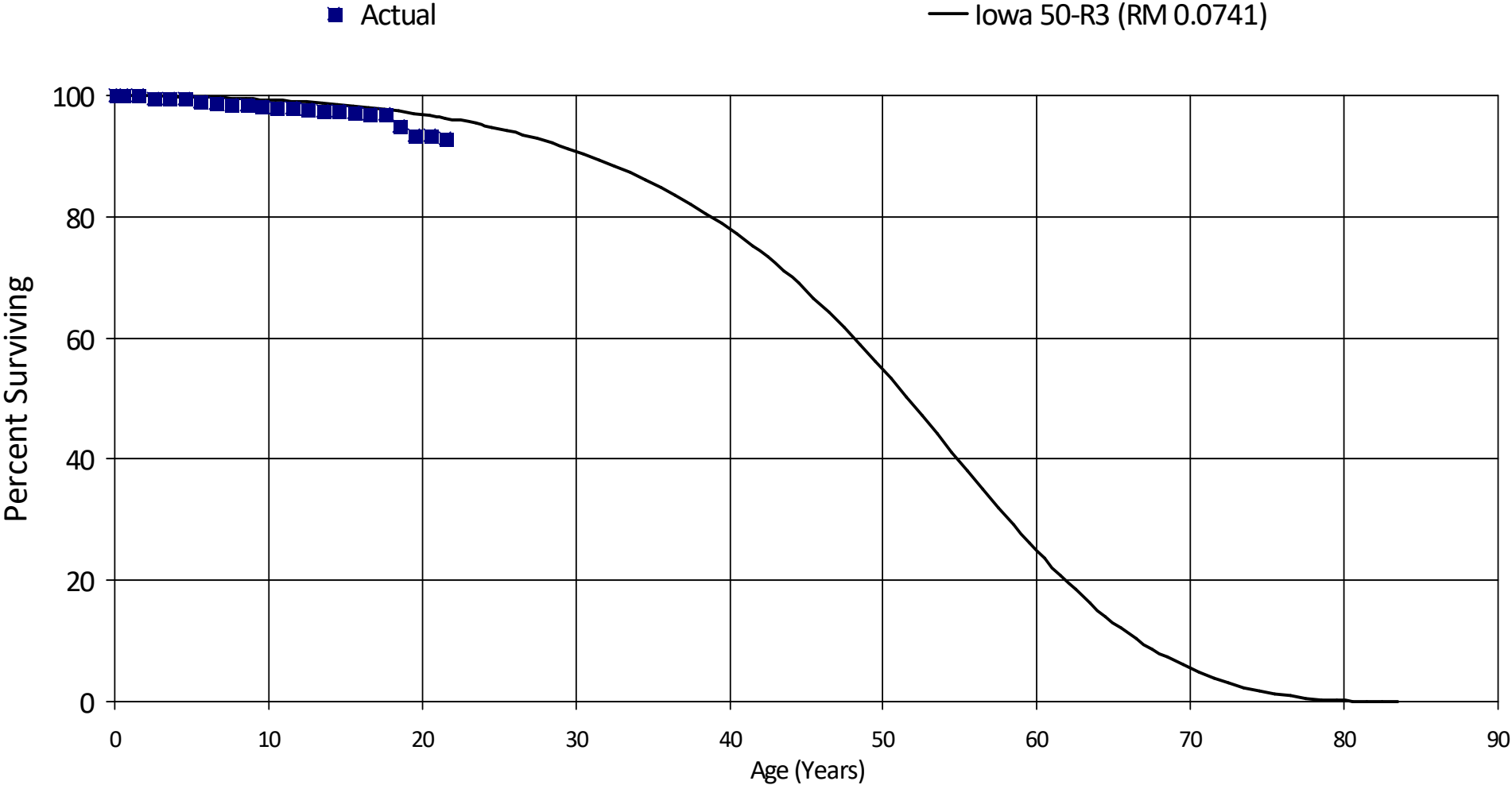
27.5	549	28	0.05096	0.94904	71.07
28.5	521	48	0.09205	0.90795	67.45
29.5	473	27	0.05705	0.94295	61.24
30.5	446	446	0.99957	0.00043	57.75
31.5	0	0	0.00000	0.00000	0.02
Totals:		4,817,905			

Toronto Hydro

Account 4113 - U/G Services in Duct

Placement Band - 2000 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

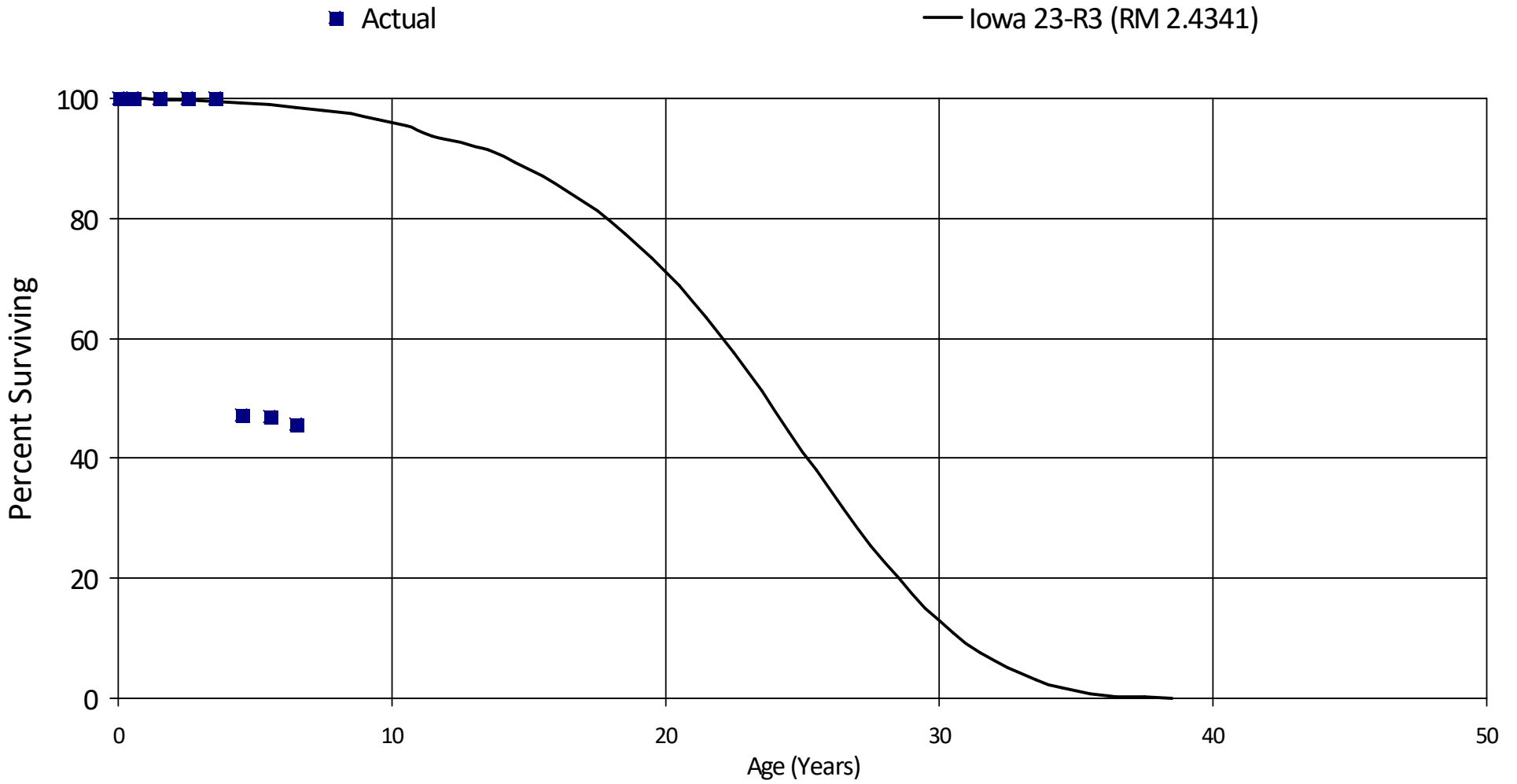
Account 4113 - U/G Services in Duct

Placement Band - 2000 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	59,212,921	6,466	0.00011	0.99989	100.00
0.5	55,928,009	23,888	0.00043	0.99957	99.99
1.5	52,195,677	198,826	0.00381	0.99619	99.95
2.5	50,398,632	37,735	0.00075	0.99925	99.57
3.5	50,305,988	21,700	0.00043	0.99957	99.50
4.5	48,295,447	183,182	0.00379	0.99621	99.46
5.5	39,100,568	171,083	0.00438	0.99562	99.08
6.5	30,458,573	38,190	0.00125	0.99875	98.65
7.5	18,835,006	27,980	0.00149	0.99851	98.53
8.5	14,062,547	27,392	0.00195	0.99805	98.38
9.5	11,640,996	25,872	0.00222	0.99778	98.19
10.5	11,185,191	2,110	0.00019	0.99981	97.97
11.5	10,834,904	39,311	0.00363	0.99637	97.95
12.5	9,369,573	2,874	0.00031	0.99969	97.59
13.5	7,162,826	9,278	0.00130	0.99870	97.56
14.5	5,846,968	10,552	0.00180	0.99820	97.43
15.5	4,301,469	13,274	0.00309	0.99691	97.25
16.5	3,581,219	1,548	0.00043	0.99957	96.95
17.5	2,847,705	56,917	0.01999	0.98001	96.91
18.5	1,309,095	20,245	0.01546	0.98454	94.97
19.5	424,956	603	0.00142	0.99858	93.50
20.5	424,353	1,931	0.00455	0.99545	93.37
21.5	257,087	1,789	0.00696	0.99304	92.95
Totals:		922,746			

Toronto Hydro
Account 4115 - U/G Services Secondary Cable Direct Buried
Placement Band - 2010 - 2022 Experience Band - 2014 - 2022
Actual and Smooth Survivor Curves



Toronto Hydro

Account 4115 - U/G Services Secondary Cable Direct Buried

Placement Band - 2010 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

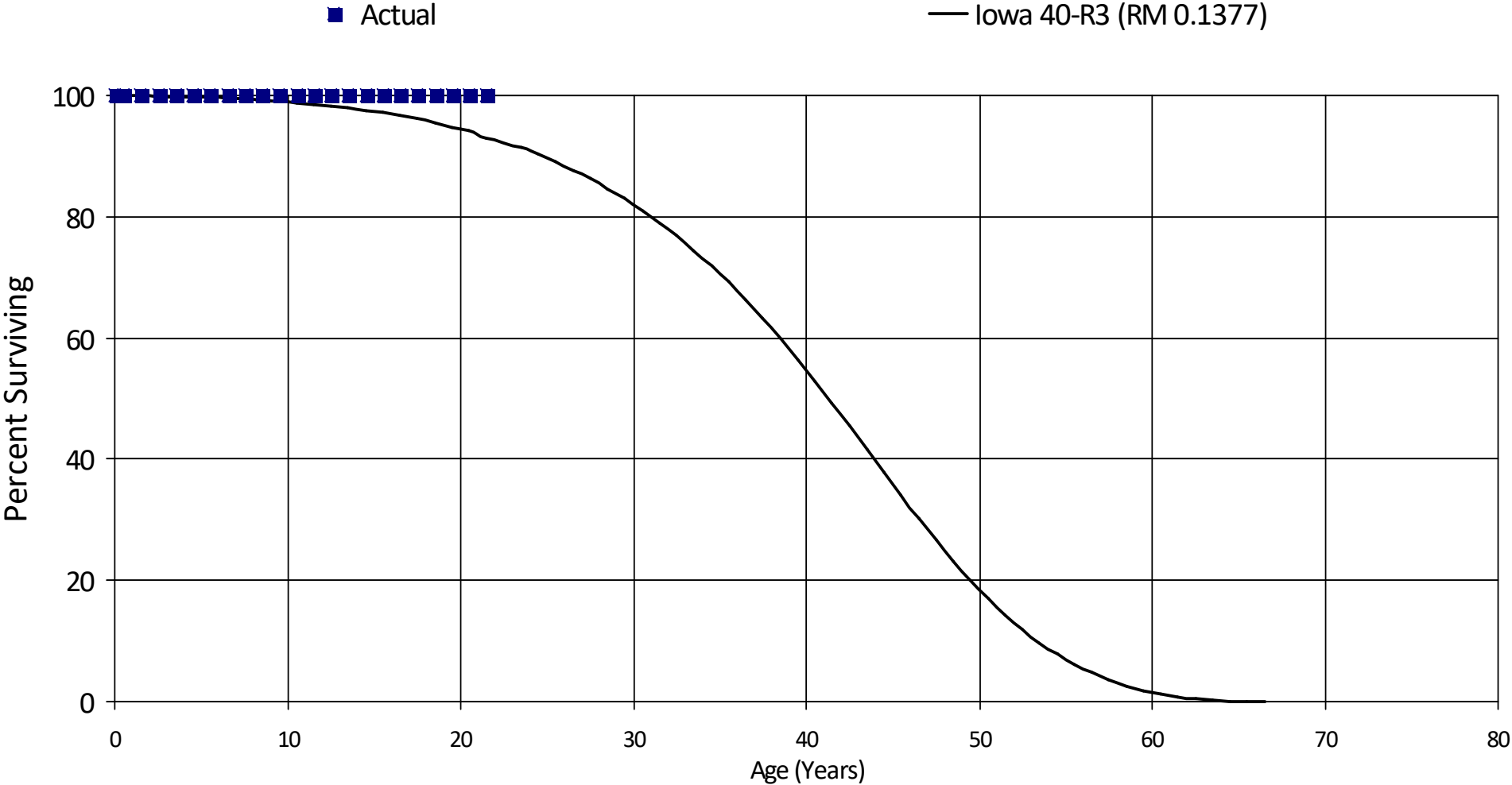
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	544,324	0	0.00000	1.00000	100.00
0.5	544,324	0	0.00000	1.00000	100.00
1.5	544,324	0	0.00000	1.00000	100.00
2.5	544,324	0	0.00000	1.00000	100.00
3.5	544,324	287,495	0.52817	0.47183	100.00
4.5	256,829	1,923	0.00749	0.99251	47.18
5.5	254,905	6,457	0.02533	0.97467	46.83
6.5	248,449	274,354	1.10427	-0.10427	45.64
7.5	-25,905	0	0.00000	1.00000	-4.76
8.5	-25,905	0	0.00000	1.00000	-4.76
9.5	-27,243	0	0.00000	1.00000	-4.76
10.5	-27,243	0	0.00000	1.00000	-4.76
11.5	2,483	0	0.00000	1.00000	-4.76
Totals:		570,229			

Toronto Hydro

Account 4513 - Dist Meters - Meter Transformers

Placement Band - 2000 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4513 - Dist Meters - Meter Transformers

Placement Band - 2000 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

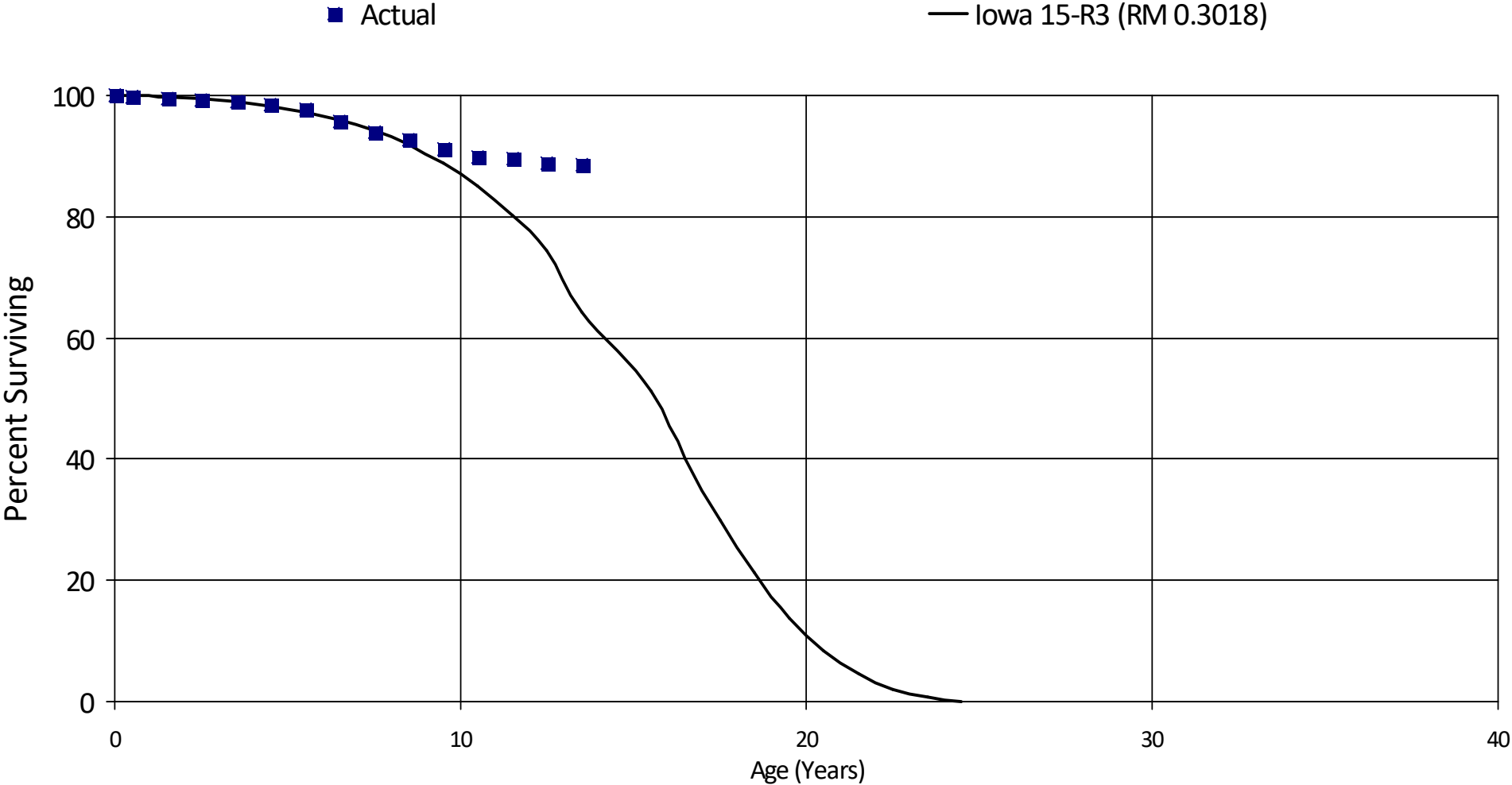
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	22,033,158	0	0.00000	1.00000	100.00
0.5	19,848,268	0	0.00000	1.00000	100.00
1.5	17,683,508	0	0.00000	1.00000	100.00
2.5	15,307,321	0	0.00000	1.00000	100.00
3.5	13,251,207	0	0.00000	1.00000	100.00
4.5	11,627,568	0	0.00000	1.00000	100.00
5.5	10,723,504	0	0.00000	1.00000	100.00
6.5	9,376,443	0	0.00000	1.00000	100.00
7.5	8,341,693	0	0.00000	1.00000	100.00
8.5	7,576,882	0	0.00000	1.00000	100.00
9.5	7,051,163	0	0.00000	1.00000	100.00
10.5	6,579,695	0	0.00000	1.00000	100.00
11.5	5,195,399	0	0.00000	1.00000	100.00
12.5	3,427,169	0	0.00000	1.00000	100.00
13.5	3,415,022	0	0.00000	1.00000	100.00
14.5	3,264,541	0	0.00000	1.00000	100.00
15.5	2,068,438	0	0.00000	1.00000	100.00
16.5	1,113,964	0	0.00000	1.00000	100.00
17.5	626,258	0	0.00000	1.00000	100.00
18.5	351,514	0	0.00000	1.00000	100.00
19.5	69,478	0	0.00000	1.00000	100.00
20.5	69,478	0	0.00000	1.00000	100.00
21.5	60,669	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 4515 - Dist Meters - Suite Meters

Placement Band - 2008 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4515 - Dist Meters - Suite Meters

Placement Band - 2008 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

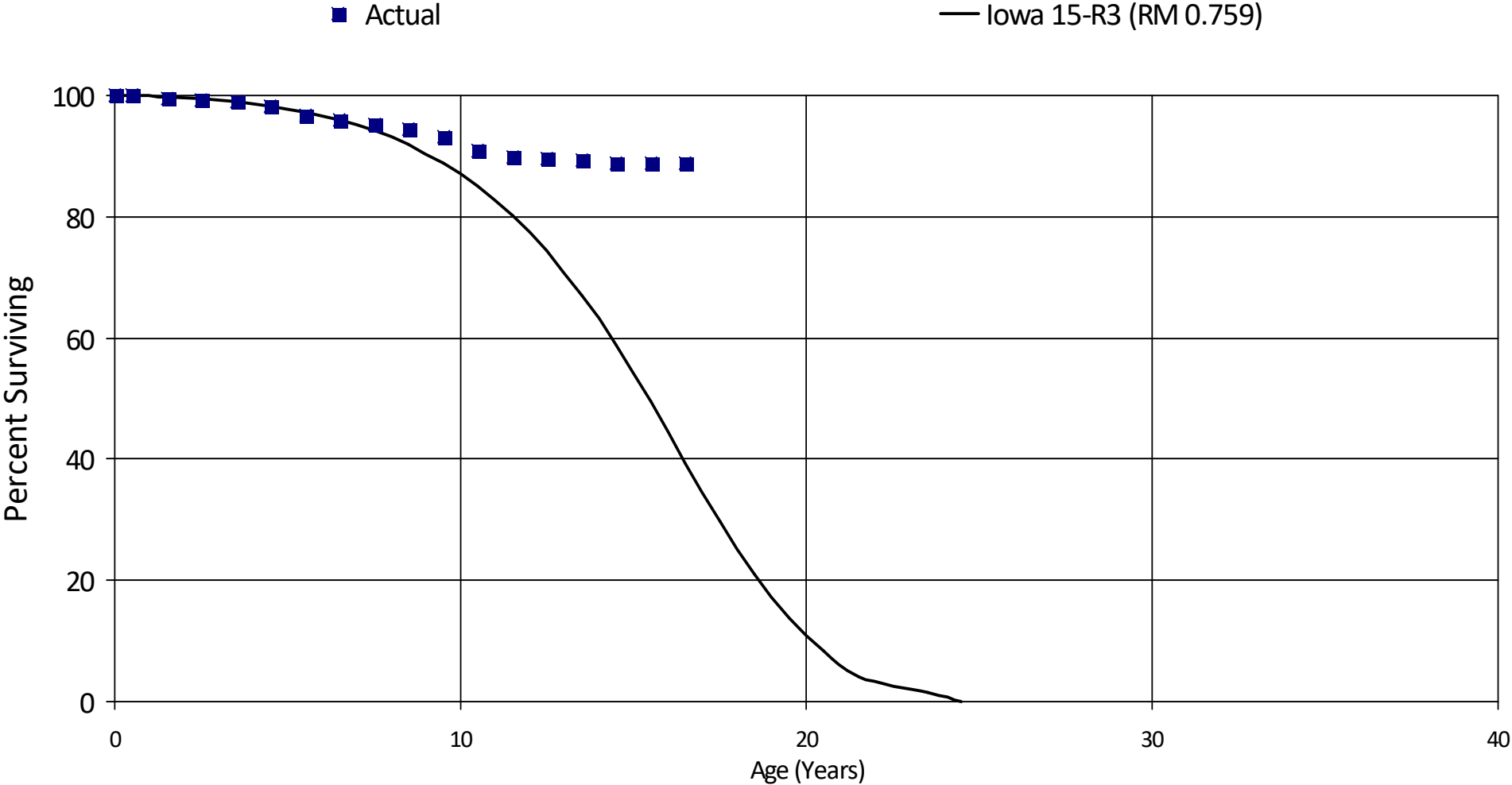
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	62,133,925	95,578	0.00154	0.99846	100.00
0.5	59,300,828	161,476	0.00272	0.99728	99.85
1.5	57,973,414	218,601	0.00377	0.99623	99.58
2.5	53,416,762	159,639	0.00299	0.99701	99.20
3.5	52,118,778	191,885	0.00368	0.99632	98.90
4.5	46,202,281	396,824	0.00859	0.99141	98.54
5.5	42,216,616	890,395	0.02109	0.97891	97.69
6.5	37,295,005	654,846	0.01756	0.98244	95.63
7.5	31,004,744	447,707	0.01444	0.98556	93.95
8.5	16,710,112	252,242	0.01510	0.98490	92.59
9.5	11,925,126	186,820	0.01567	0.98433	91.19
10.5	10,277,017	31,313	0.00305	0.99695	89.76
11.5	8,671,292	75,259	0.00868	0.99132	89.49
12.5	944,629	1,431	0.00151	0.99849	88.71
13.5	193,220	1,871	0.00968	0.99032	88.58
Totals:		3,765,887			

Toronto Hydro

Account 4611 - Dist Meters - Smart Meters Residential

Placement Band - 2000 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4611 - Dist Meters - Smart Meters Residential

Placement Band - 2000 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

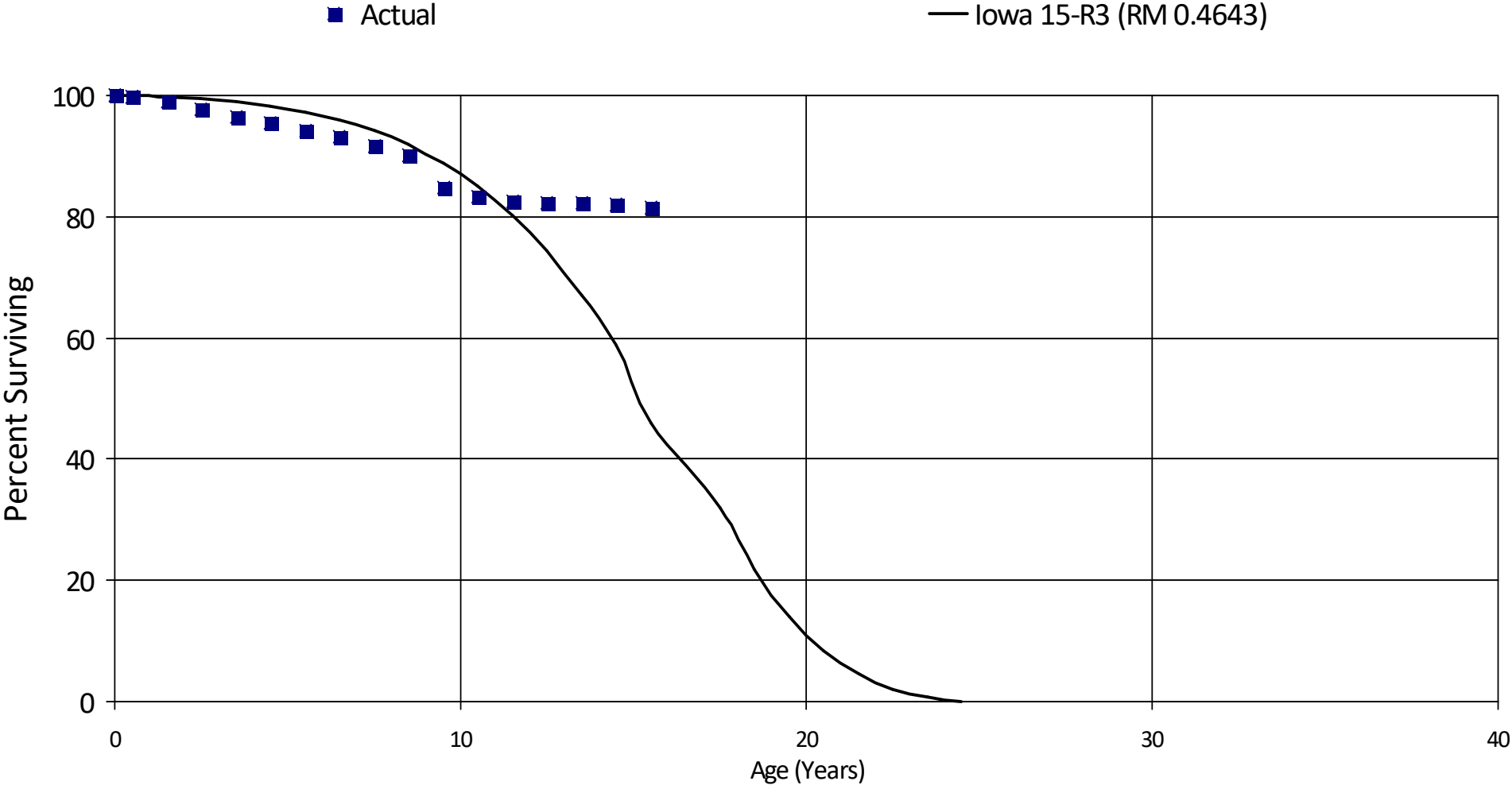
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	104,684,581	51,630	0.00049	0.99951	100.00
0.5	102,429,995	422,345	0.00412	0.99588	99.95
1.5	99,335,275	325,145	0.00327	0.99673	99.54
2.5	94,737,811	231,288	0.00244	0.99756	99.21
3.5	92,023,035	726,889	0.00790	0.99210	98.97
4.5	85,028,769	1,393,584	0.01639	0.98361	98.19
5.5	77,247,373	524,838	0.00679	0.99321	96.58
6.5	71,871,574	576,302	0.00802	0.99198	95.92
7.5	70,116,395	602,192	0.00859	0.99141	95.15
8.5	67,477,032	801,772	0.01188	0.98812	94.33
9.5	61,205,070	1,526,129	0.02493	0.97507	93.21
10.5	56,884,704	575,493	0.01012	0.98988	90.89
11.5	54,087,820	255,579	0.00473	0.99527	89.97
12.5	48,769,342	105,194	0.00216	0.99784	89.54
13.5	40,850,371	207,834	0.00509	0.99491	89.35
14.5	28,028,388	34,287	0.00122	0.99878	88.90
15.5	14,435,955	0	0.00000	1.00000	88.79
16.5	0	0	0.00000	0.00000	88.79
Totals:		8,360,501			

Toronto Hydro

Account 4613 - Dist Meters - Smart Meters GS

Placement Band - 2006 - 2022 Experience Band - 2015 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4613 - Dist Meters - Smart Meters GS

Placement Band - 2006 - 2022 Experience Band - 2015 - 2022

RETIREMENT RATE ANALYSIS

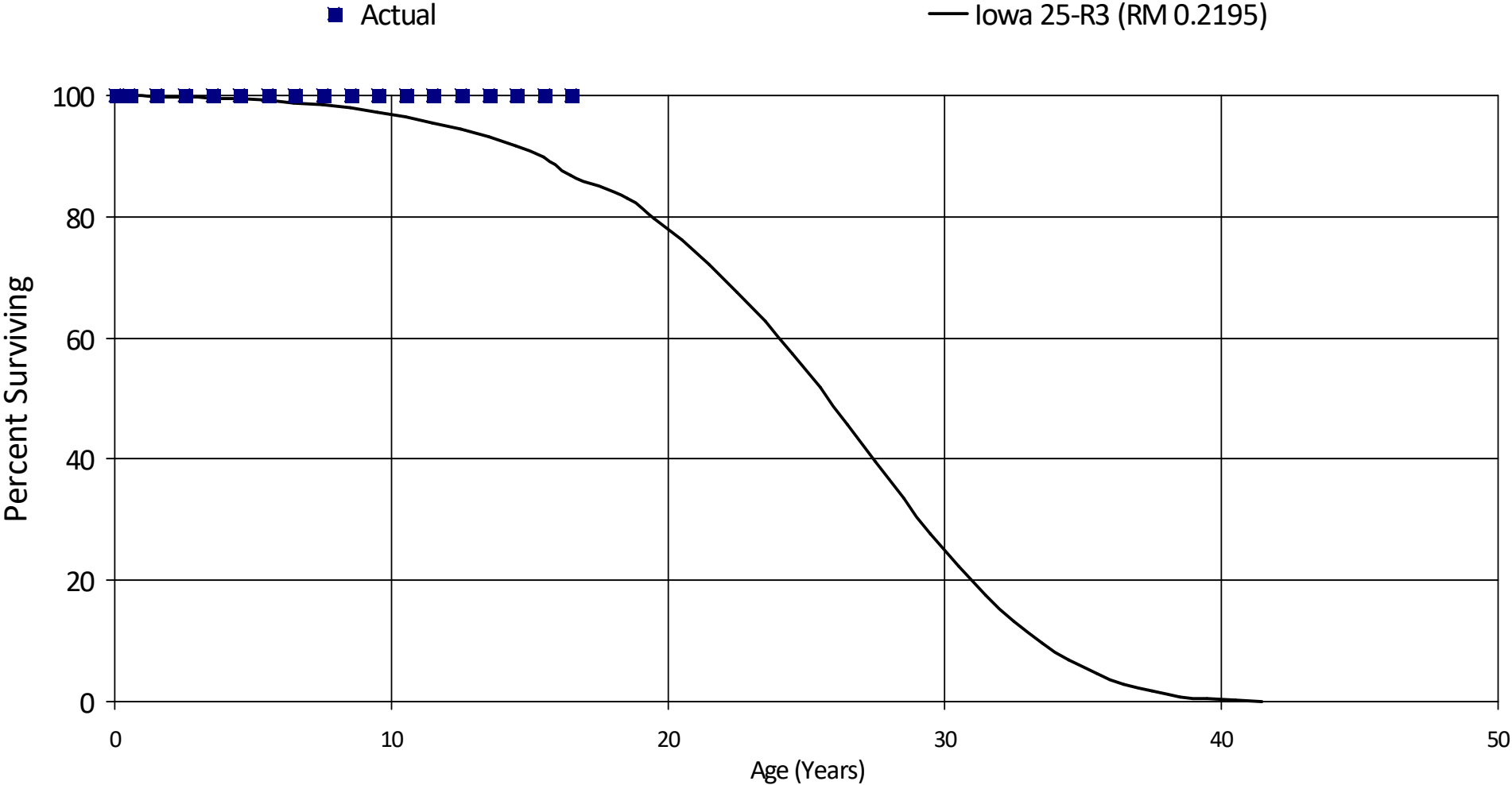
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	74,150,593	238,912	0.00322	0.99678	100.00
0.5	67,876,319	445,133	0.00656	0.99344	99.68
1.5	62,897,548	912,086	0.01450	0.98550	99.03
2.5	56,868,947	644,893	0.01134	0.98866	97.59
3.5	50,839,895	611,579	0.01203	0.98797	96.48
4.5	41,205,692	523,343	0.01270	0.98730	95.32
5.5	31,207,661	339,502	0.01088	0.98912	94.11
6.5	30,860,891	455,094	0.01475	0.98525	93.09
7.5	25,602,798	433,743	0.01694	0.98306	91.72
8.5	23,667,563	1,406,734	0.05944	0.94056	90.17
9.5	21,496,698	374,770	0.01743	0.98257	84.81
10.5	20,761,605	207,003	0.00997	0.99003	83.33
11.5	16,180,335	37,369	0.00231	0.99769	82.50
12.5	9,092,391	18,218	0.00200	0.99800	82.31
13.5	4,580,962	15,479	0.00338	0.99662	82.15
14.5	1,415,891	4,830	0.00341	0.99659	81.87
15.5	208,229	0	0.00000	1.00000	81.59
Totals:		6,668,688			

Toronto Hydro

Account 4711 - Grid Point Meters

Placement Band - 2005 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 4711 - Grid Point Meters

Placement Band - 2005 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

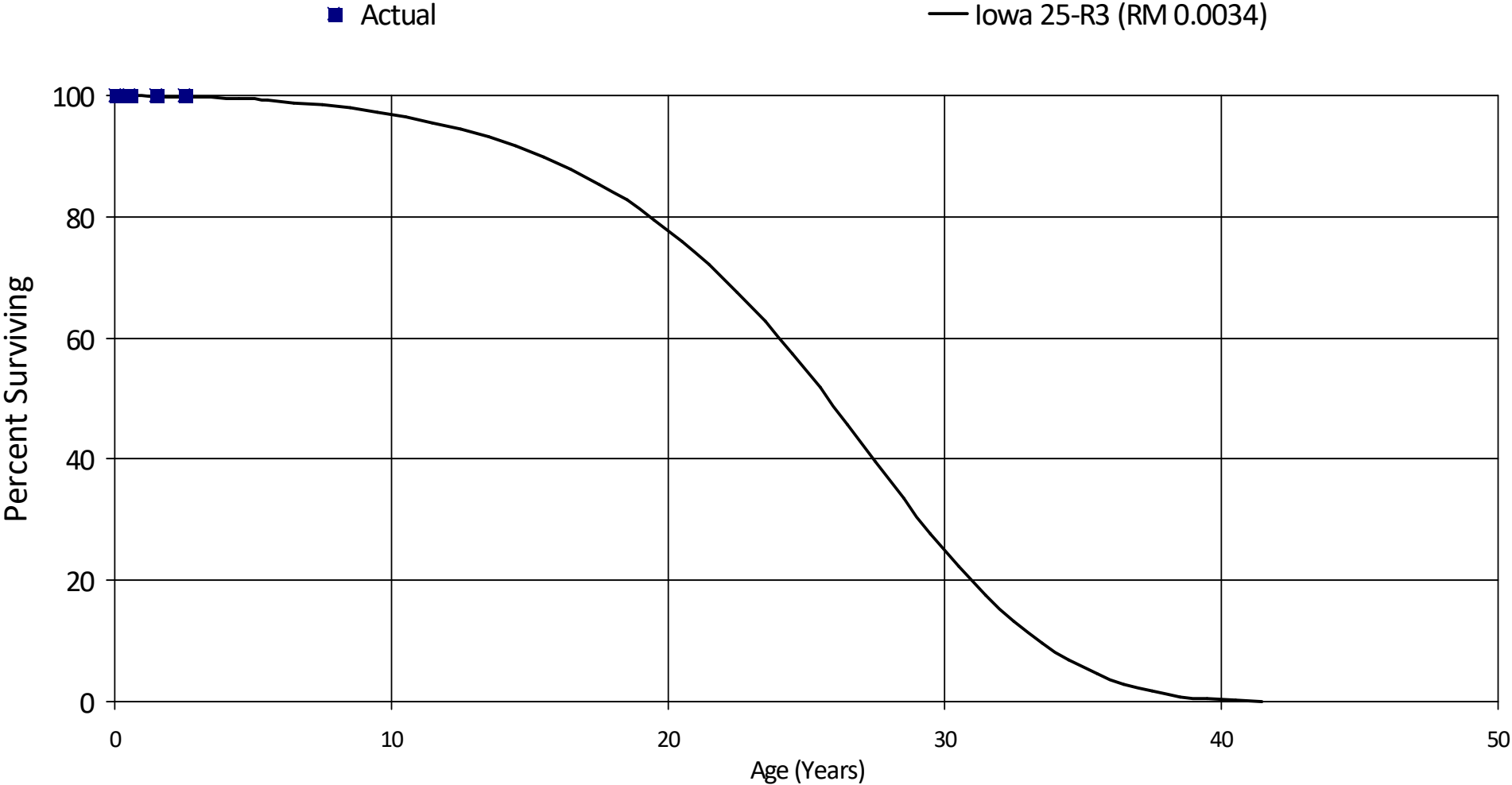
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	41,762,307	0	0.00000	1.00000	100.00
0.5	40,300,309	0	0.00000	1.00000	100.00
1.5	37,285,955	0	0.00000	1.00000	100.00
2.5	35,784,657	0	0.00000	1.00000	100.00
3.5	29,322,003	0	0.00000	1.00000	100.00
4.5	26,804,998	0	0.00000	1.00000	100.00
5.5	26,168,967	0	0.00000	1.00000	100.00
6.5	24,900,754	0	0.00000	1.00000	100.00
7.5	23,071,720	0	0.00000	1.00000	100.00
8.5	13,093,201	0	0.00000	1.00000	100.00
9.5	7,957,805	0	0.00000	1.00000	100.00
10.5	7,621,156	0	0.00000	1.00000	100.00
11.5	5,371,929	0	0.00000	1.00000	100.00
12.5	4,739,482	0	0.00000	1.00000	100.00
13.5	1,452,622	0	0.00000	1.00000	100.00
14.5	873,748	0	0.00000	1.00000	100.00
15.5	364,495	0	0.00000	1.00000	100.00
16.5	46,482	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 5031 - Street Lighting Distribution Assembly

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 5031 - Street Lighting Distribution Assembly

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

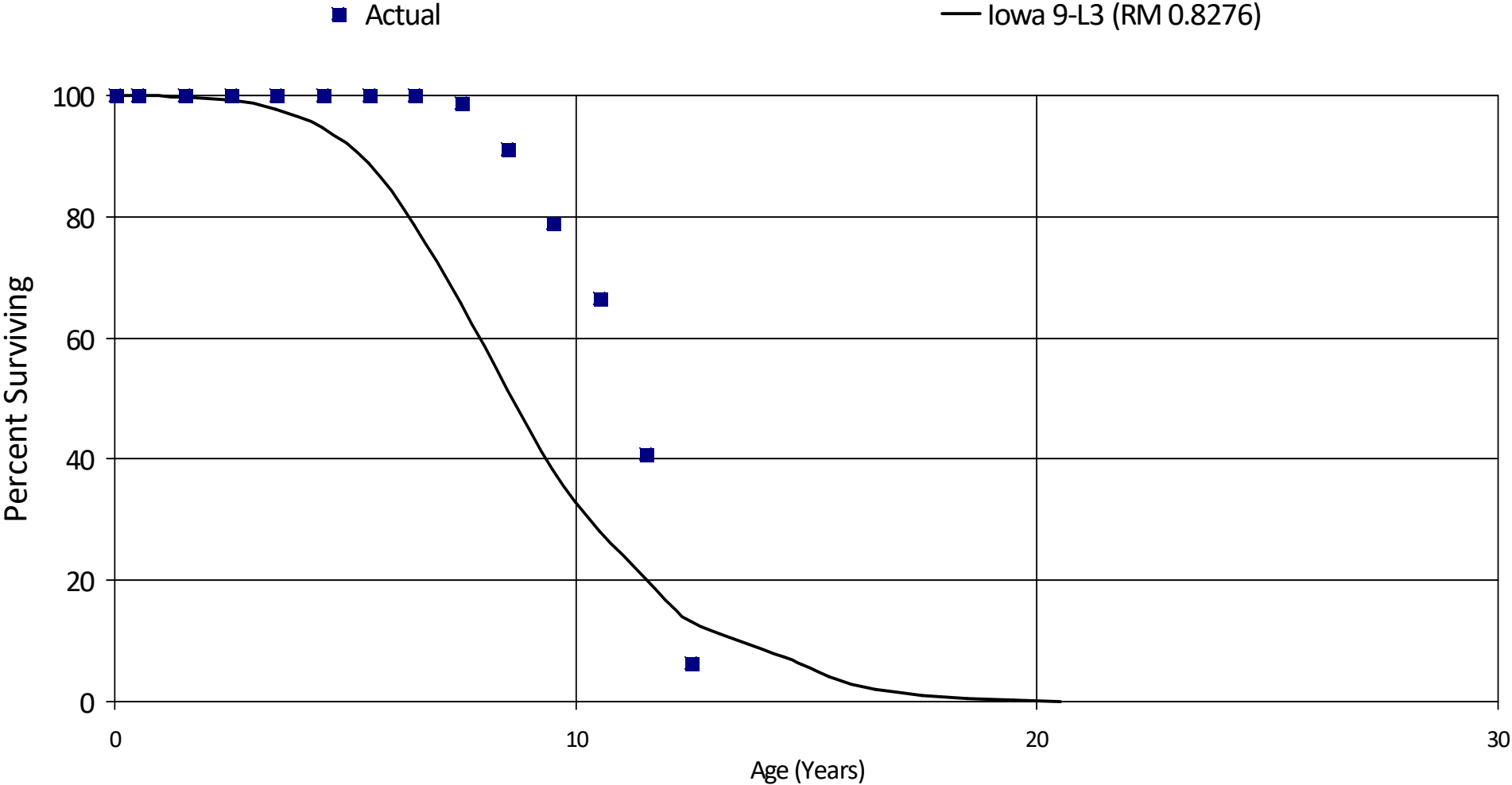
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	87,699	0	0.00000	1.00000	100.00
0.5	87,699	0	0.00000	1.00000	100.00
1.5	87,699	0	0.00000	1.00000	100.00
2.5	87,475	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6231 - Rolling Stock - Vehicles < 3 Tons

Placement Band - 2009 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6231 - Rolling Stock - Vehicles < 3 Tons

Placement Band - 2009 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

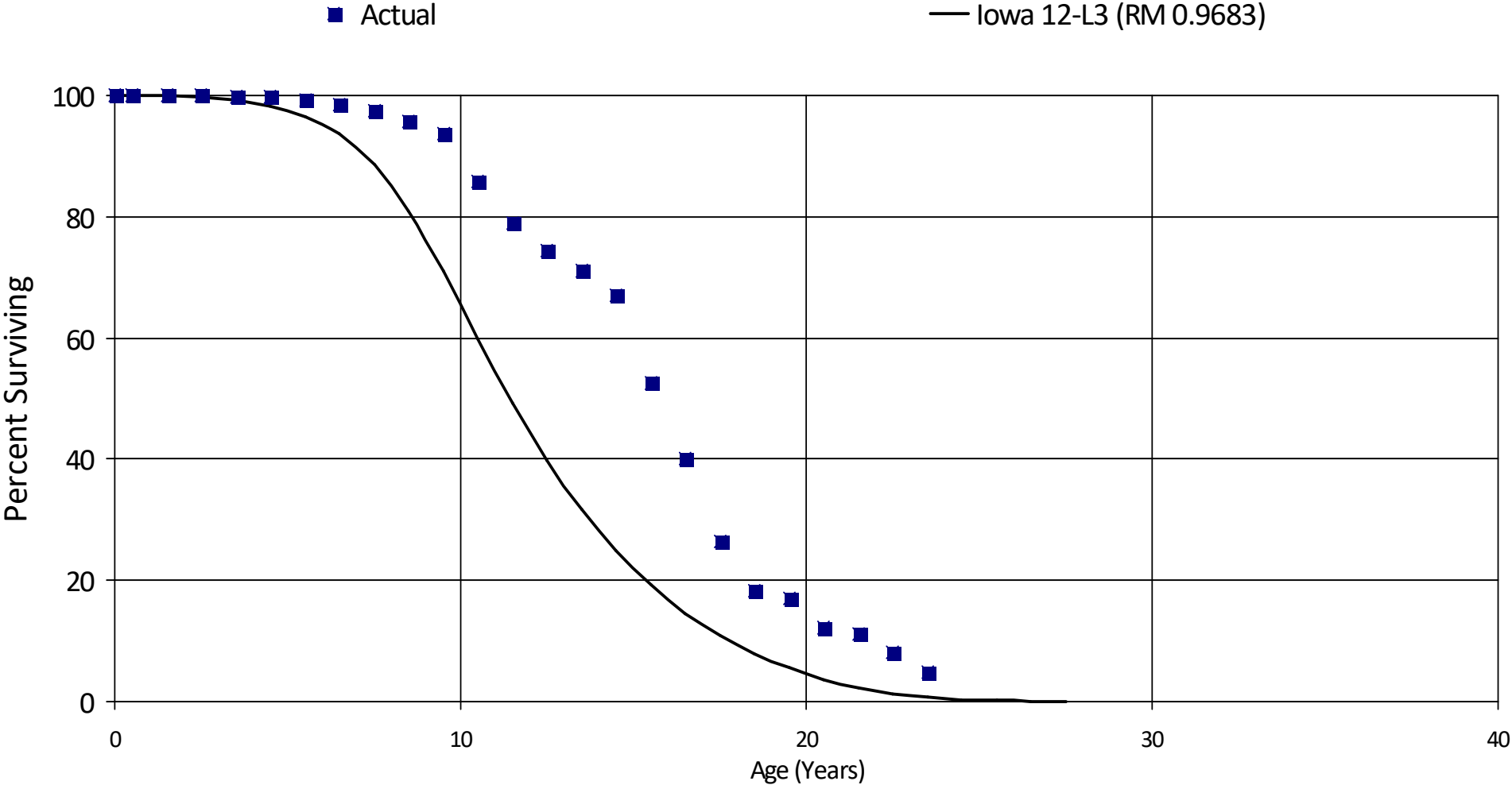
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	13,467,904	0	0.00000	1.00000	100.00
0.5	9,419,396	0	0.00000	1.00000	100.00
1.5	8,633,655	0	0.00000	1.00000	100.00
2.5	7,454,736	0	0.00000	1.00000	100.00
3.5	6,474,823	0	0.00000	1.00000	100.00
4.5	5,774,978	0	0.00000	1.00000	100.00
5.5	5,231,568	0	0.00000	1.00000	100.00
6.5	3,958,086	52,264	0.01320	0.98680	100.00
7.5	3,520,419	270,361	0.07680	0.92320	98.68
8.5	3,250,058	435,799	0.13409	0.86591	91.10
9.5	2,814,259	437,926	0.15561	0.84439	78.88
10.5	2,307,660	893,181	0.38705	0.61295	66.61
11.5	277,808	234,516	0.84417	0.15583	40.83
12.5	4,493	0	0.00000	1.00000	6.36
Totals:		2,324,047			

Toronto Hydro

Account 6251 - Rolling Stock - Vehicles > 3 Tons

Placement Band - 1962 - 2022 Experience Band - 2010 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6251 - Rolling Stock - Vehicles > 3 Tons

Placement Band - 1962 - 2022 Experience Band - 2010 - 2022

RETIREMENT RATE ANALYSIS

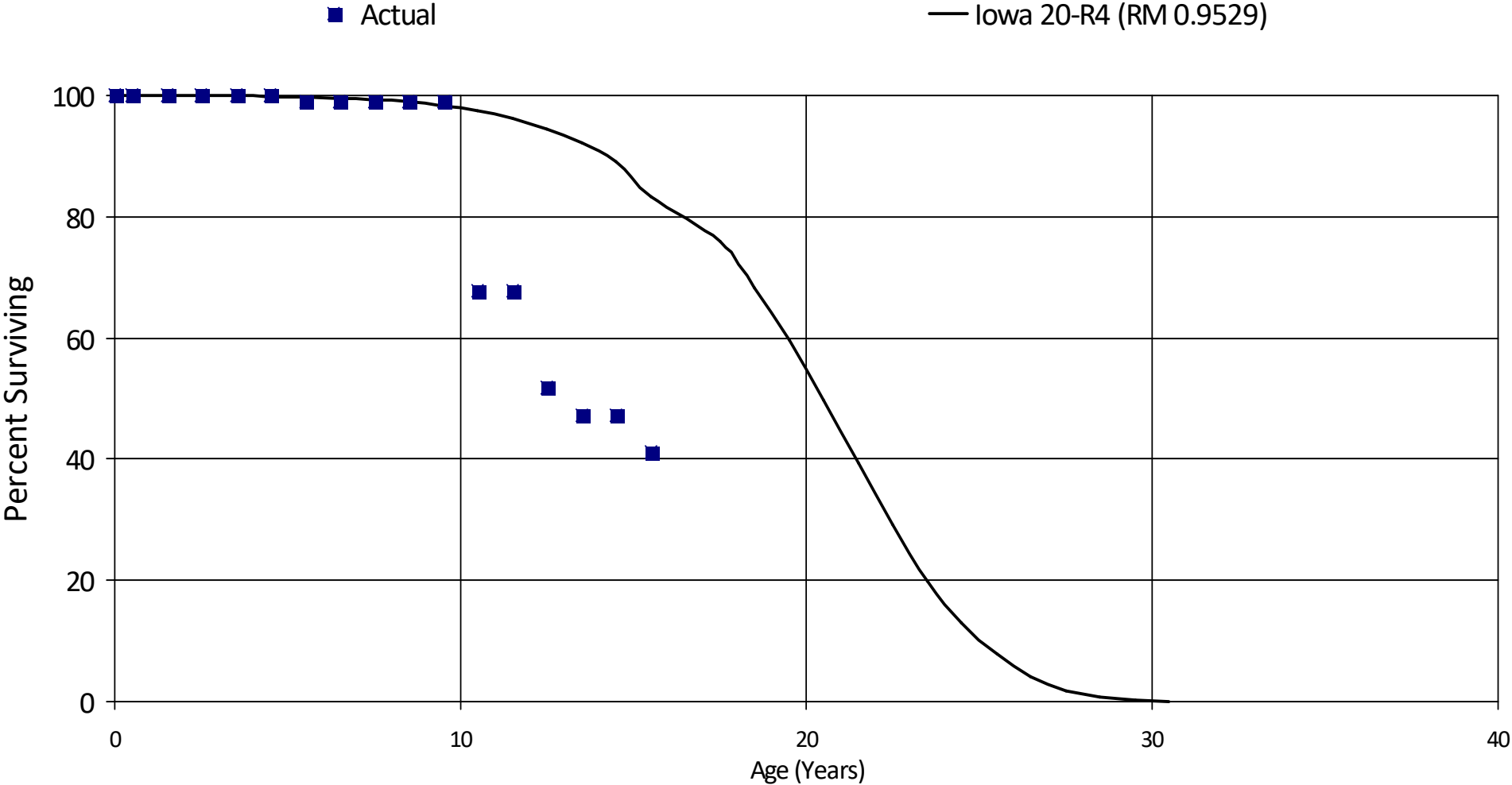
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	54,212,165	0	0.00000	1.00000	100.00
0.5	52,022,085	19,077	0.00037	0.99963	100.00
1.5	48,944,986	0	0.00000	1.00000	99.96
2.5	46,036,159	142,694	0.00310	0.99690	99.96
3.5	43,126,844	0	0.00000	1.00000	99.65
4.5	41,250,583	157,514	0.00382	0.99618	99.65
5.5	37,587,758	284,645	0.00757	0.99243	99.27
6.5	35,609,966	344,420	0.00967	0.99033	98.52
7.5	33,183,495	612,941	0.01847	0.98153	97.57
8.5	30,407,654	704,631	0.02317	0.97683	95.77
9.5	29,521,770	2,457,258	0.08324	0.91676	93.55
10.5	26,143,147	2,077,943	0.07948	0.92052	85.76
11.5	20,339,107	1,208,399	0.05941	0.94059	78.94
12.5	14,860,468	637,371	0.04289	0.95711	74.25
13.5	11,203,275	633,923	0.05658	0.94342	71.07
14.5	9,482,092	2,053,076	0.21652	0.78348	67.05
15.5	7,286,377	1,739,330	0.23871	0.76129	52.53
16.5	5,534,141	1,874,264	0.33867	0.66133	39.99
17.5	3,659,877	1,119,906	0.30600	0.69400	26.45
18.5	2,539,971	202,368	0.07967	0.92033	18.36
19.5	2,337,604	657,288	0.28118	0.71882	16.90
20.5	1,680,316	123,222	0.07333	0.92667	12.15
21.5	1,557,094	429,915	0.27610	0.72390	11.26
22.5	1,127,179	468,092	0.41528	0.58472	8.15
23.5	659,087	239,595	0.36353	0.63647	4.77
Totals:		18,187,872			

Toronto Hydro

Account 6271 - Rolling Stock - Service Equipment

Placement Band - 2006 - 2022 Experience Band - 2019 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6271 - Rolling Stock - Service Equipment

Placement Band - 2006 - 2022 Experience Band - 2019 - 2022

RETIREMENT RATE ANALYSIS

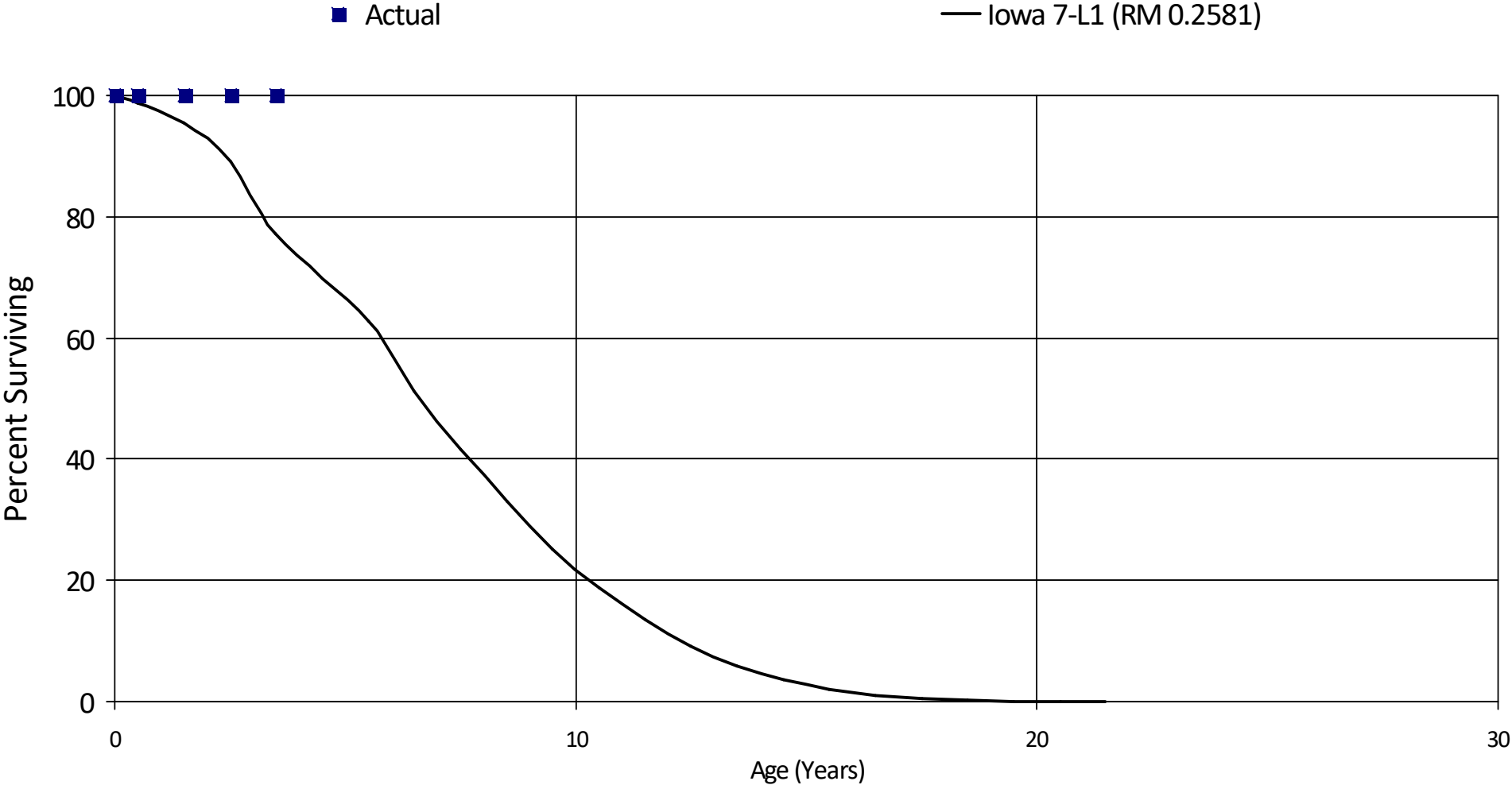
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	2,277,985	0	0.00000	1.00000	100.00
0.5	1,642,754	0	0.00000	1.00000	100.00
1.5	1,620,484	0	0.00000	1.00000	100.00
2.5	1,620,484	0	0.00000	1.00000	100.00
3.5	1,393,228	0	0.00000	1.00000	100.00
4.5	945,892	8,800	0.00930	0.99070	100.00
5.5	749,754	0	0.00000	1.00000	99.07
6.5	732,154	0	0.00000	1.00000	99.07
7.5	732,154	0	0.00000	1.00000	99.07
8.5	711,407	0	0.00000	1.00000	99.07
9.5	573,851	180,658	0.31482	0.68518	99.07
10.5	305,712	0	0.00000	1.00000	67.88
11.5	242,835	57,807	0.23805	0.76195	67.88
12.5	63,061	5,616	0.08906	0.91094	51.72
13.5	57,445	0	0.00000	1.00000	47.11
14.5	24,890	3,186	0.12800	0.87200	47.11
15.5	7,323	0	0.00000	1.00000	41.08
	Totals:	256,067			

Toronto Hydro

Account 6281 - Electric Vehicles

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6281 - Electric Vehicles

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

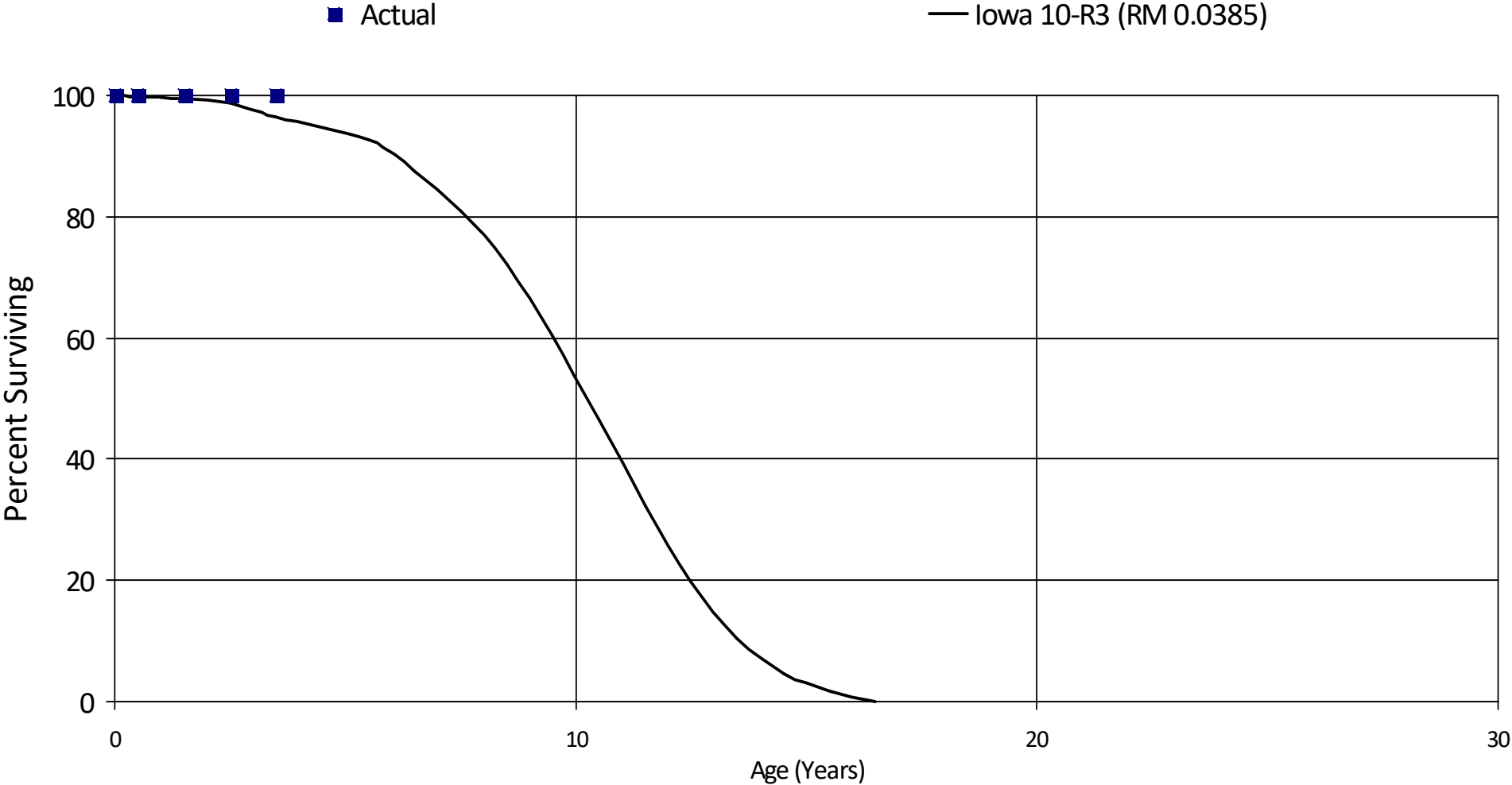
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	606,502	0	0.00000	1.00000	100.00
0.5	606,502	0	0.00000	1.00000	100.00
1.5	330,734	0	0.00000	1.00000	100.00
2.5	330,734	0	0.00000	1.00000	100.00
3.5	330,734	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6282 - Electric Vehicle Charging Station

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6282 - Electric Vehicle Charging Station

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

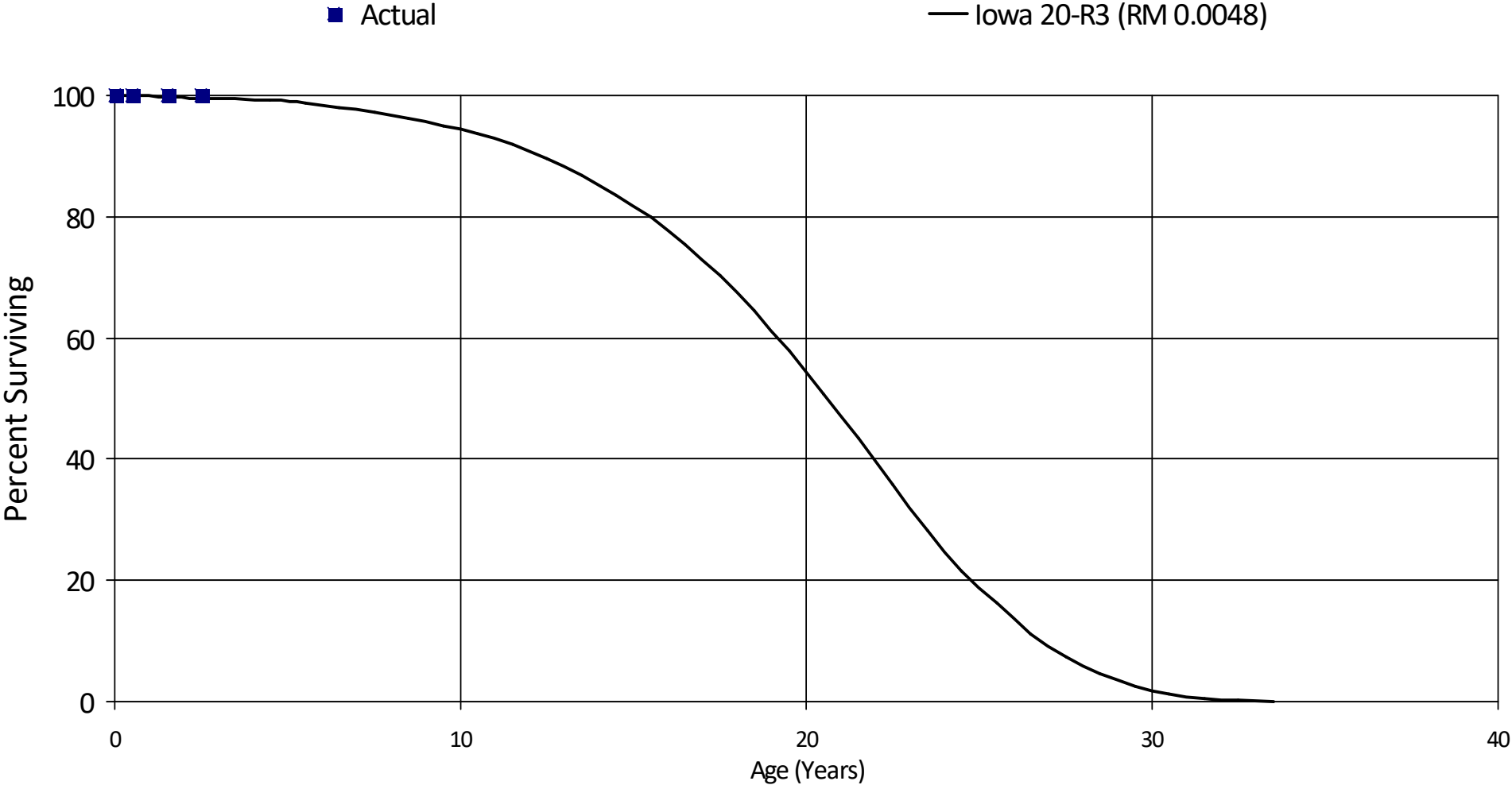
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	98,915	0	0.00000	1.00000	100.00
0.5	98,915	0	0.00000	1.00000	100.00
1.5	98,915	0	0.00000	1.00000	100.00
2.5	98,915	0	0.00000	1.00000	100.00
3.5	98,915	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6291 - Energy Storage Inverter

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6291 - Energy Storage Inverter

Placement Band - 2019 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

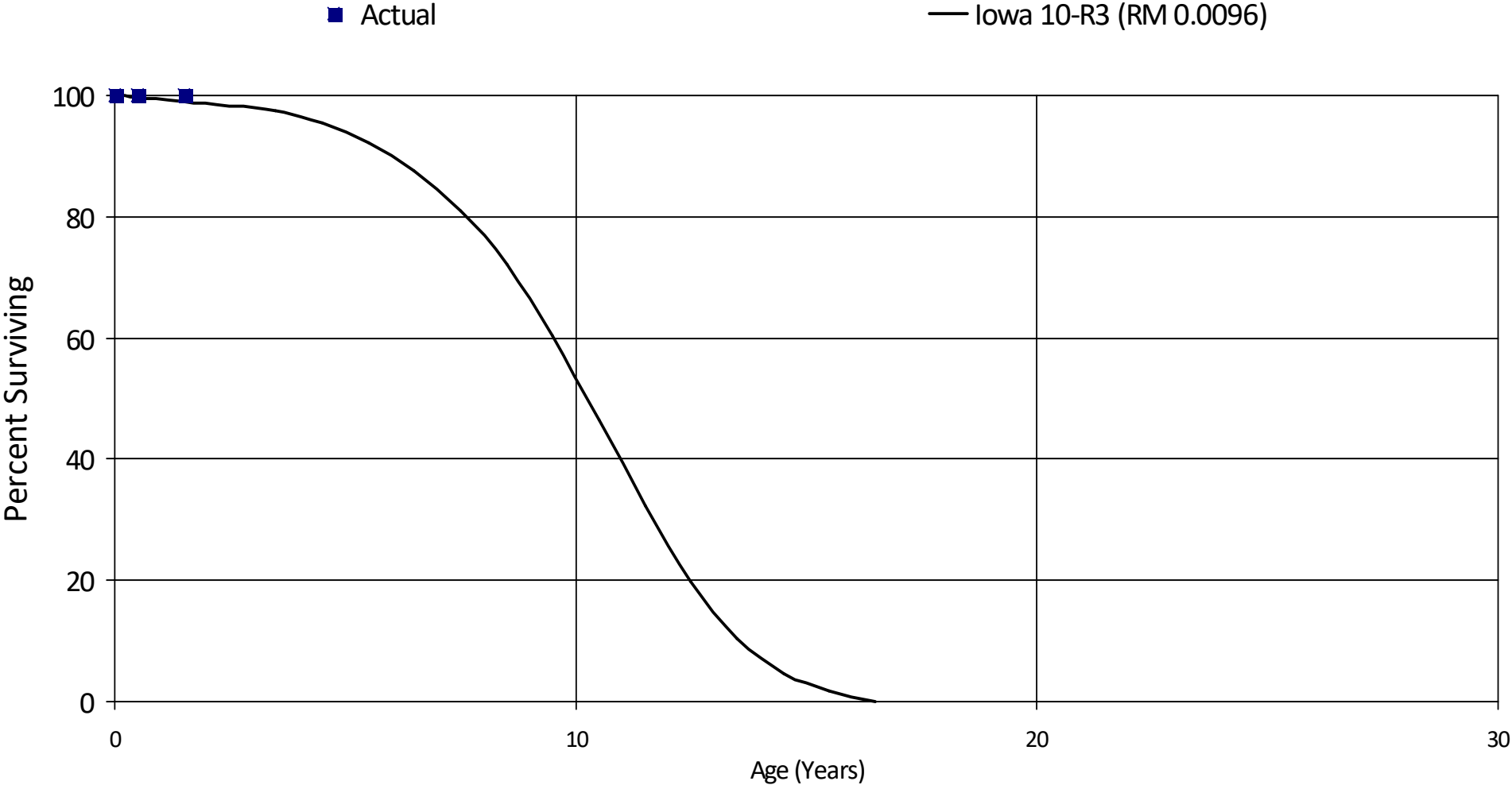
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	3,280,131	0	0.00000	1.00000	100.00
0.5	3,280,131	0	0.00000	1.00000	100.00
1.5	3,280,131	0	0.00000	1.00000	100.00
2.5	780,668	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6292 - Energy Storage System Battery

Placement Band - 2020 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6292 - Energy Storage System Battery

Placement Band - 2020 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

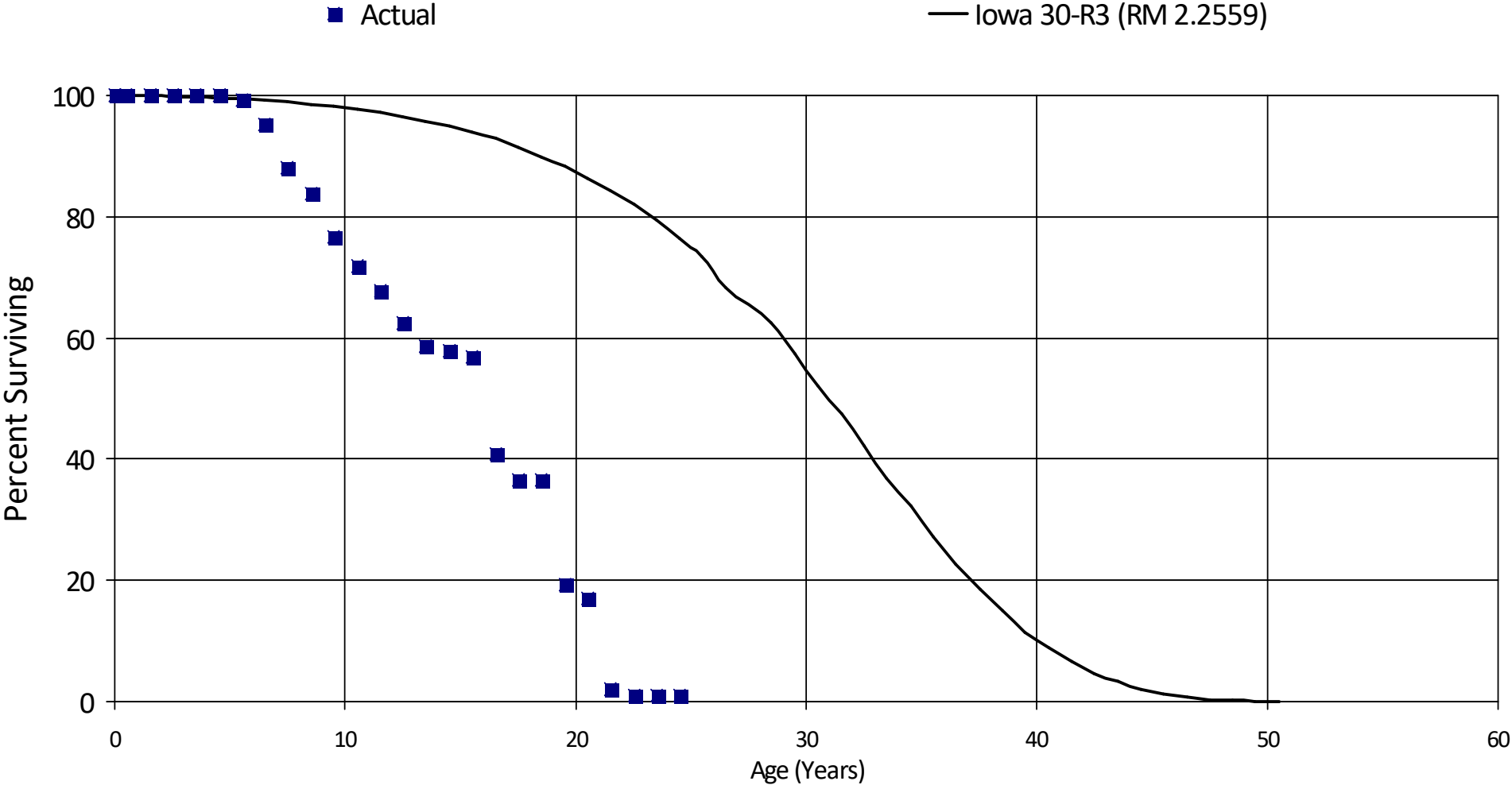
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	1,249,507	0	0.00000	1.00000	100.00
0.5	1,249,507	0	0.00000	1.00000	100.00
1.5	1,249,507	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6453 - System Supervisory - Scadamate Switches

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6453 - System Supervisory - Scadamate Switches

Placement Band - 1995 - 2022 Experience Band - 2014 - 2022

RETIREMENT RATE ANALYSIS

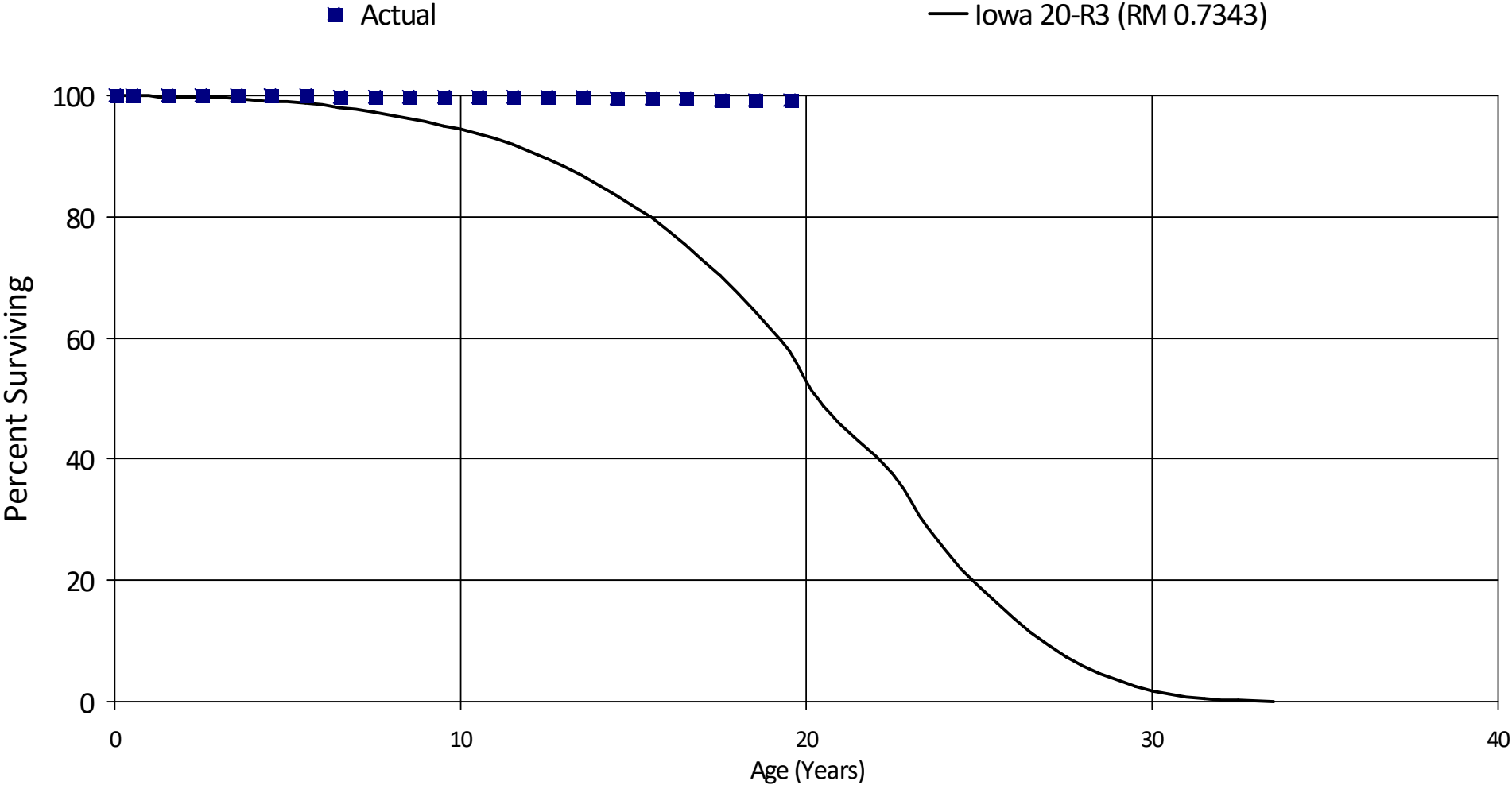
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	5,819,017	0	0.00000	1.00000	100.00
0.5	5,819,017	0	0.00000	1.00000	100.00
1.5	5,819,017	0	0.00000	1.00000	100.00
2.5	5,819,017	0	0.00000	1.00000	100.00
3.5	5,819,017	0	0.00000	1.00000	100.00
4.5	5,819,017	46,299	0.00796	0.99204	100.00
5.5	5,772,718	228,803	0.03964	0.96036	99.20
6.5	5,543,915	414,654	0.07479	0.92521	95.27
7.5	5,129,261	258,906	0.05048	0.94952	88.14
8.5	4,870,355	414,130	0.08503	0.91497	83.69
9.5	4,456,202	278,212	0.06243	0.93757	76.57
10.5	4,177,990	239,855	0.05741	0.94259	71.79
11.5	3,938,381	306,268	0.07776	0.92224	67.67
12.5	3,632,112	216,000	0.05947	0.94053	62.41
13.5	3,416,112	43,619	0.01277	0.98723	58.70
14.5	1,691,596	30,179	0.01784	0.98216	57.95
15.5	782,647	220,678	0.28196	0.71804	56.92
16.5	561,969	60,358	0.10740	0.89260	40.87
17.5	451,423	0	0.00000	1.00000	36.48
18.5	412,529	194,748	0.47208	0.52792	36.48
19.5	213,213	24,435	0.11460	0.88540	19.26
20.5	188,777	165,488	0.87663	0.12337	17.05
21.5	21,191	11,336	0.53495	0.46505	2.10
22.5	7,683	0	0.00000	1.00000	0.98
23.5	7,683	0	0.00000	1.00000	0.98
24.5	0	0	0.00000	0.00000	0.98
Totals:		3,153,968			

Toronto Hydro

Account 6455 - System Supervisory - Scada RTU

Placement Band - 2001 - 2022 Experience Band - 2018 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6455 - System Supervisory - Scada RTU

Placement Band - 2001 - 2022 Experience Band - 2018 - 2022

RETIREMENT RATE ANALYSIS

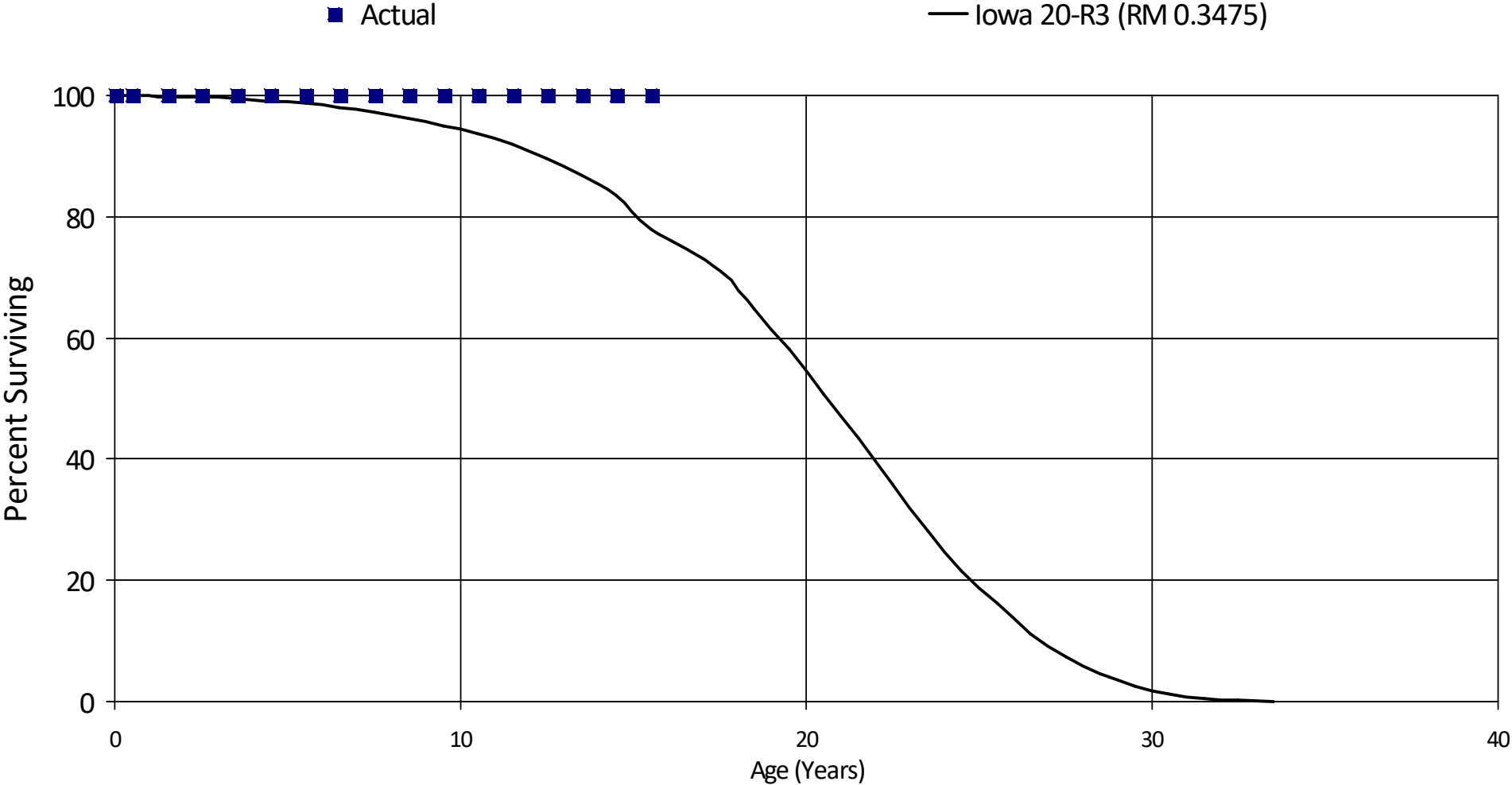
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	73,077,764	0	0.00000	1.00000	100.00
0.5	61,236,476	0	0.00000	1.00000	100.00
1.5	50,124,112	0	0.00000	1.00000	100.00
2.5	38,932,296	0	0.00000	1.00000	100.00
3.5	33,062,237	0	0.00000	1.00000	100.00
4.5	26,671,931	31,684	0.00119	0.99881	100.00
5.5	20,567,438	22,346	0.00109	0.99891	99.88
6.5	17,477,916	0	0.00000	1.00000	99.77
7.5	14,271,709	0	0.00000	1.00000	99.77
8.5	10,931,984	0	0.00000	1.00000	99.77
9.5	7,444,029	0	0.00000	1.00000	99.77
10.5	7,166,070	0	0.00000	1.00000	99.77
11.5	6,733,380	0	0.00000	1.00000	99.77
12.5	5,443,842	0	0.00000	1.00000	99.77
13.5	4,716,885	15,676	0.00332	0.99668	99.77
14.5	2,453,369	0	0.00000	1.00000	99.44
15.5	1,314,840	0	0.00000	1.00000	99.44
16.5	640,775	1,192	0.00186	0.99814	99.44
17.5	371,212	0	0.00000	1.00000	99.26
18.5	3,651	0	0.00000	1.00000	99.26
19.5	0	0	0.00000	0.00000	99.26
Totals:		70,898			

Toronto Hydro

Account 6511 - Fibre Optic Network - Control Cable

Placement Band - 2006 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6511 - Fibre Optic Network - Control Cable

Placement Band - 2006 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

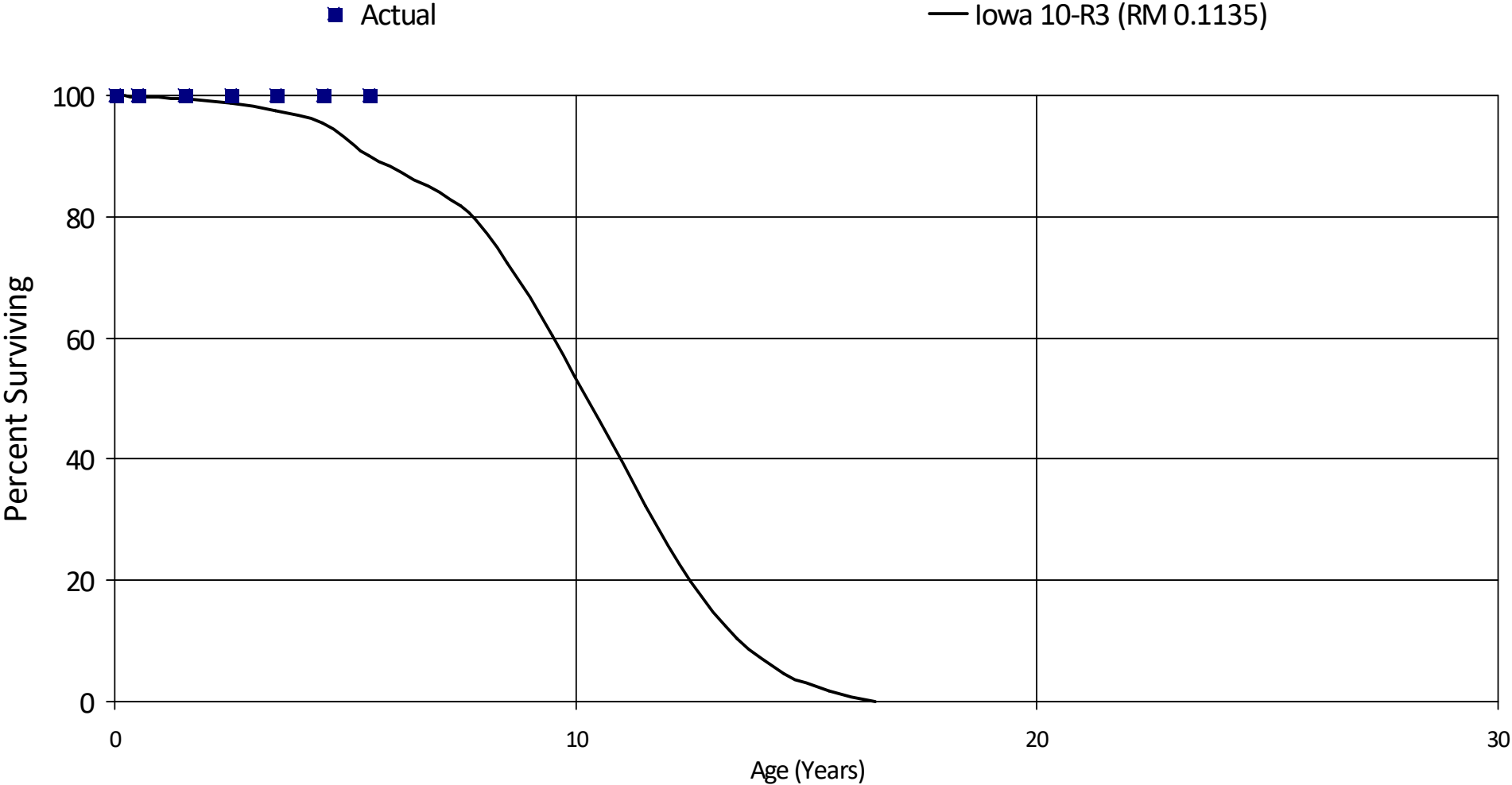
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	13,756,542	0	0.00000	1.00000	100.00
0.5	10,080,436	0	0.00000	1.00000	100.00
1.5	8,049,283	0	0.00000	1.00000	100.00
2.5	5,037,761	0	0.00000	1.00000	100.00
3.5	2,098,426	0	0.00000	1.00000	100.00
4.5	590,432	0	0.00000	1.00000	100.00
5.5	574,344	0	0.00000	1.00000	100.00
6.5	574,344	0	0.00000	1.00000	100.00
7.5	574,344	0	0.00000	1.00000	100.00
8.5	297,951	0	0.00000	1.00000	100.00
9.5	63,597	0	0.00000	1.00000	100.00
10.5	63,597	0	0.00000	1.00000	100.00
11.5	63,597	0	0.00000	1.00000	100.00
12.5	63,597	0	0.00000	1.00000	100.00
13.5	63,597	0	0.00000	1.00000	100.00
14.5	61,137	0	0.00000	1.00000	100.00
15.5	61,137	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6531 - Fibre Optic Network - Customer Term Equipment

Placement Band - 2016 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6531 - Fibre Optic Network - Customer Term Equipment

Placement Band - 2016 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

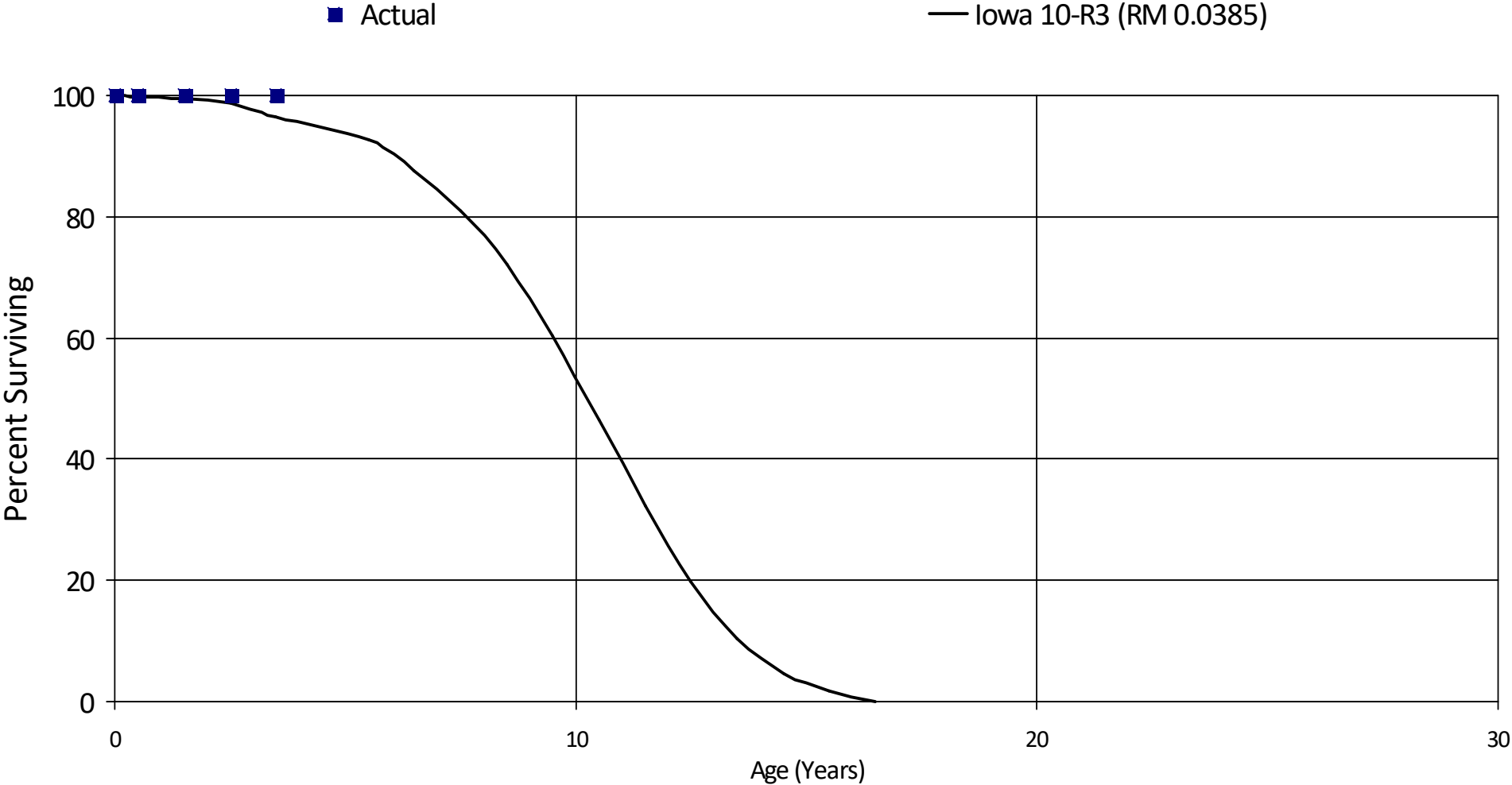
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	12,465,517	0	0.00000	1.00000	100.00
0.5	12,465,517	0	0.00000	1.00000	100.00
1.5	12,465,517	0	0.00000	1.00000	100.00
2.5	12,465,517	0	0.00000	1.00000	100.00
3.5	12,465,517	0	0.00000	1.00000	100.00
4.5	11,594,462	0	0.00000	1.00000	100.00
5.5	4,942,012	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 6533 - Fibre Optic Network - SubstationTerm Equipment

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 6533 - Fibre Optic Network - SubstationTerm Equipment

Placement Band - 2018 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

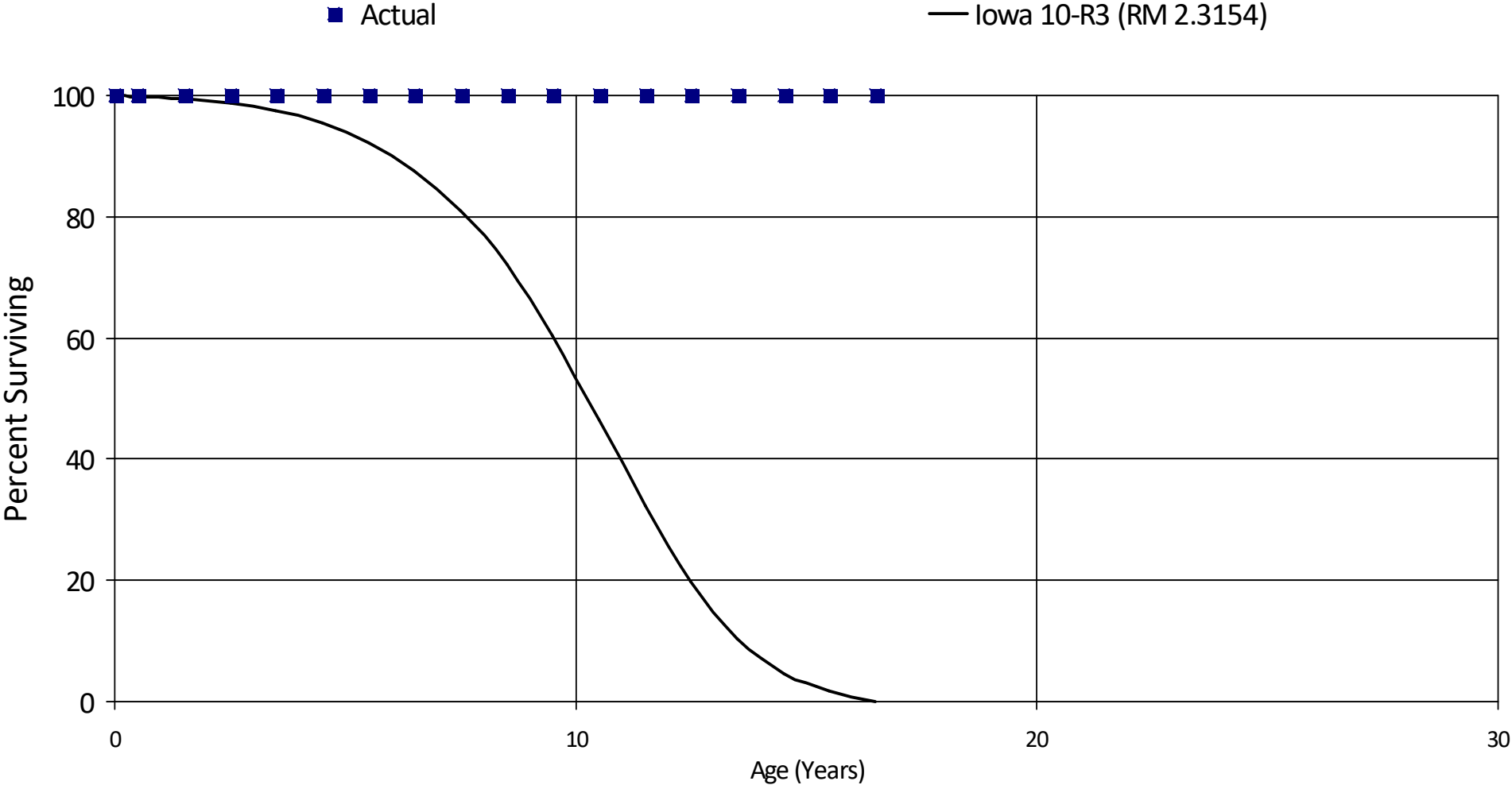
Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	107,517	0	0.00000	1.00000	100.00
0.5	107,517	0	0.00000	1.00000	100.00
1.5	107,517	0	0.00000	1.00000	100.00
2.5	55,388	0	0.00000	1.00000	100.00
3.5	55,388	0	0.00000	1.00000	100.00
Totals:		0			

Toronto Hydro

Account 7111 - Load Management Controls - Customer Location

Placement Band - 2005 - 2022 Experience Band - 2022 - 2022

Actual and Smooth Survivor Curves



Toronto Hydro

Account 7111 - Load Management Controls - Customer Location

Placement Band - 2005 - 2022 Experience Band - 2022 - 2022

RETIREMENT RATE ANALYSIS

Age at Begin of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retmt Ratio	Survivor Ratio	% Surviving
0	3,022,834	0	0.00000	1.00000	100.00
0.5	3,022,834	0	0.00000	1.00000	100.00
1.5	3,022,834	0	0.00000	1.00000	100.00
2.5	3,022,834	0	0.00000	1.00000	100.00
3.5	3,022,834	0	0.00000	1.00000	100.00
4.5	3,022,834	0	0.00000	1.00000	100.00
5.5	3,022,834	0	0.00000	1.00000	100.00
6.5	3,022,834	0	0.00000	1.00000	100.00
7.5	3,022,834	0	0.00000	1.00000	100.00
8.5	3,022,834	0	0.00000	1.00000	100.00
9.5	3,022,834	0	0.00000	1.00000	100.00
10.5	3,022,834	0	0.00000	1.00000	100.00
11.5	3,022,834	0	0.00000	1.00000	100.00
12.5	3,022,834	0	0.00000	1.00000	100.00
13.5	3,022,834	0	0.00000	1.00000	100.00
14.5	3,022,834	0	0.00000	1.00000	100.00
15.5	2,013,119	0	0.00000	1.00000	100.00
16.5	87,491	0	0.00000	1.00000	100.00
Totals:		0			



SECTION 6

6 ESTIMATION OF SURVIVOR CURVES

6.1 Average Service Life

All assets have a service life, which is defined as “the period of time from its installation until it is retired from service”³. All account groups of property are made up of various assets with differing service lives and investment values. To calculate a depreciation rate, one must first calculate an average life for all assets in a single account. This can be done by ascertaining the age at retirement for every asset in an account and plotting it as a percentage of the units surviving at each age interval (a “Survivor Curve”). From the average life for each account, remaining lives can then be found which are then used to calculate the annual depreciation accruals and ultimately depreciation rate. A discussion of the general concept of survivor curves is presented and the Iowa type survivor curves are reviewed.

6.2 Survivor Curves

A survivor curve is defined as “a graph of the percent of units remaining in service expressed as a function of age”.⁴ To calculate the average life of the group, the remaining life expectancy, the probable life and the frequency curve, one must first create a survivor curve. Figure 1 shows a typical 40-R4 smoothed survivor curve as well as the accompanying derived curves. The type 40-R4 refers to the Iowa type curve, whose designation will be explained in further detail in the next section

To calculate the average service life, one must calculate the area under the survivor curve and divide by the percent surviving at age zero. The remaining life is equal to the area under the survivor curve and to the right of the current age, divided by the percent surviving at the current age. In Figure 1, for example, the hatched area to the right of age 45 divided by 28.9 percent surviving balance represents the remaining life for an asset that has reached that age. The probable life is “the total life expectancy of the property surviving at any age and is equal to the remaining life plus the current age.”⁵ If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve is calculated by taking the difference between the percent surviving on successive years on the survivor curve⁶. Alternatively, frequency can be empirically determined by finding the amount of retirements at any given age. Plotting retirement frequency from the youngest to oldest ages and then taking the cumulative frequencies will generate percent surviving versus age.

³ Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* (Iowa State University Press, 1994), 21.

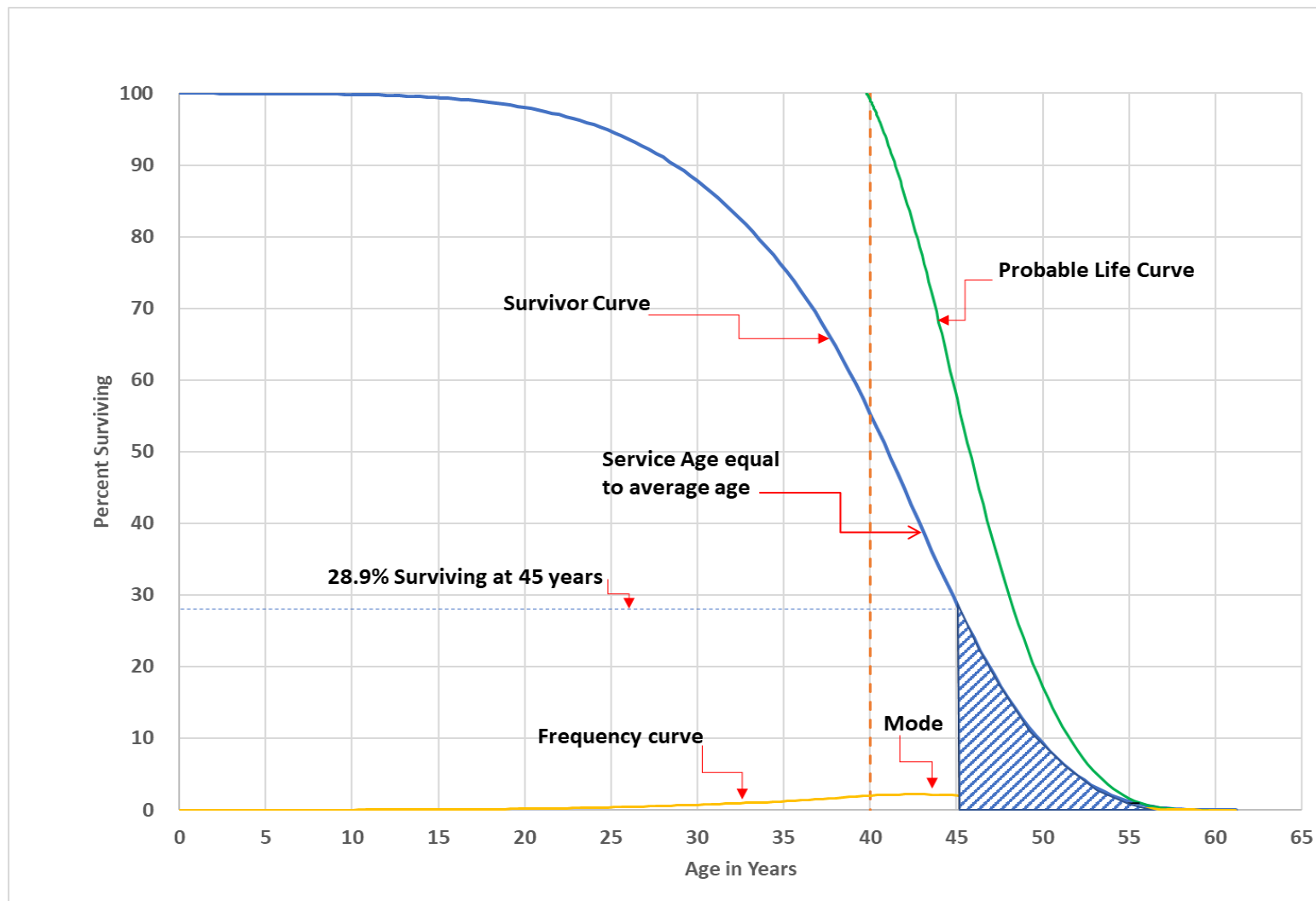
⁴ *Ibid*, 23.

⁵ *Ibid*, 29.

⁶ *Ibid*, 23-24.



FIGURE 1: TYPICAL SURVIVOR CURVE (40-R4) AND DERIVED CURVES





6.3 Iowa Type Curves

In 19The 1, Robley Winfrey and Edwin Kurtz of the Engineering Research Institute at Iowa State University published Bulletin 103, which laid the groundwork for what would eventually be known as the Iowa Curves. “The 13 type curves can be used as valuable aids in forecasting the probable future service lives of individual items and of groups of items of different kinds of physical equipment”.⁷ The 13 curves described in Bulletin 103 eventually became a series of 22 generalized survivor curves which are used throughout the regulated utility industry. These 22 curves were described in Bulletin 125, published in 1967 by Harold A. Cowles, which became known as the Iowa curves.

The Iowa curves are organized with three variables: the average life of the plant; the location of the mode; and the variation of the life. All Iowa curves have both a letter and a number to represent the shape and height of the mode. The L curves, or left-moded curves, are used when the mode of the curve should be to the left of the average life. There are six L curves are presented in Figure 2. The R curves, or right-moded, are used when the mode of the curve should be to the right of the average life. There are five R curves, which are presented in Figure 3. The S curves, or symmetrically-moded, are used when the mode is equal to the average life. There are seven S curves, which are presented in Figure 4. The O curves, or origin curves, are used when the mode occurs at age 0. There are four O curves, which are presented in Figure 5. There are some occasions where it is appropriate to use a half curve. In these cases, the curve is assumed to be exactly half way between the two curves.

In addition to Bulletin 125, Iowa curves have also been presented in subsequent Experiment Station bulletins and in the text *Engineering Valuation and Depreciation*⁸. In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student, submitted a thesis⁹ presenting his development of the fourth family consisting of the four O-type survivor curves.

⁷ *Ibid*, 21

⁸ Marston, Anson, Robley Winfrey and Jean C. Hempstead, *Engineering Valuation and Depreciation* (The Iowa State University Press, 1953)

⁹ Couch, Frank V. B., Jr., *Classification of Type O Retirement Characteristics of Industrial Property* Unpublished M.S. Thesis (Engineering Valuation, Library, Iowa State College, Ames, Iowa, 1957)



FIGURE 2: LEFT MODAL OR "L" IOWA TYPE SURVIVOR CURVES

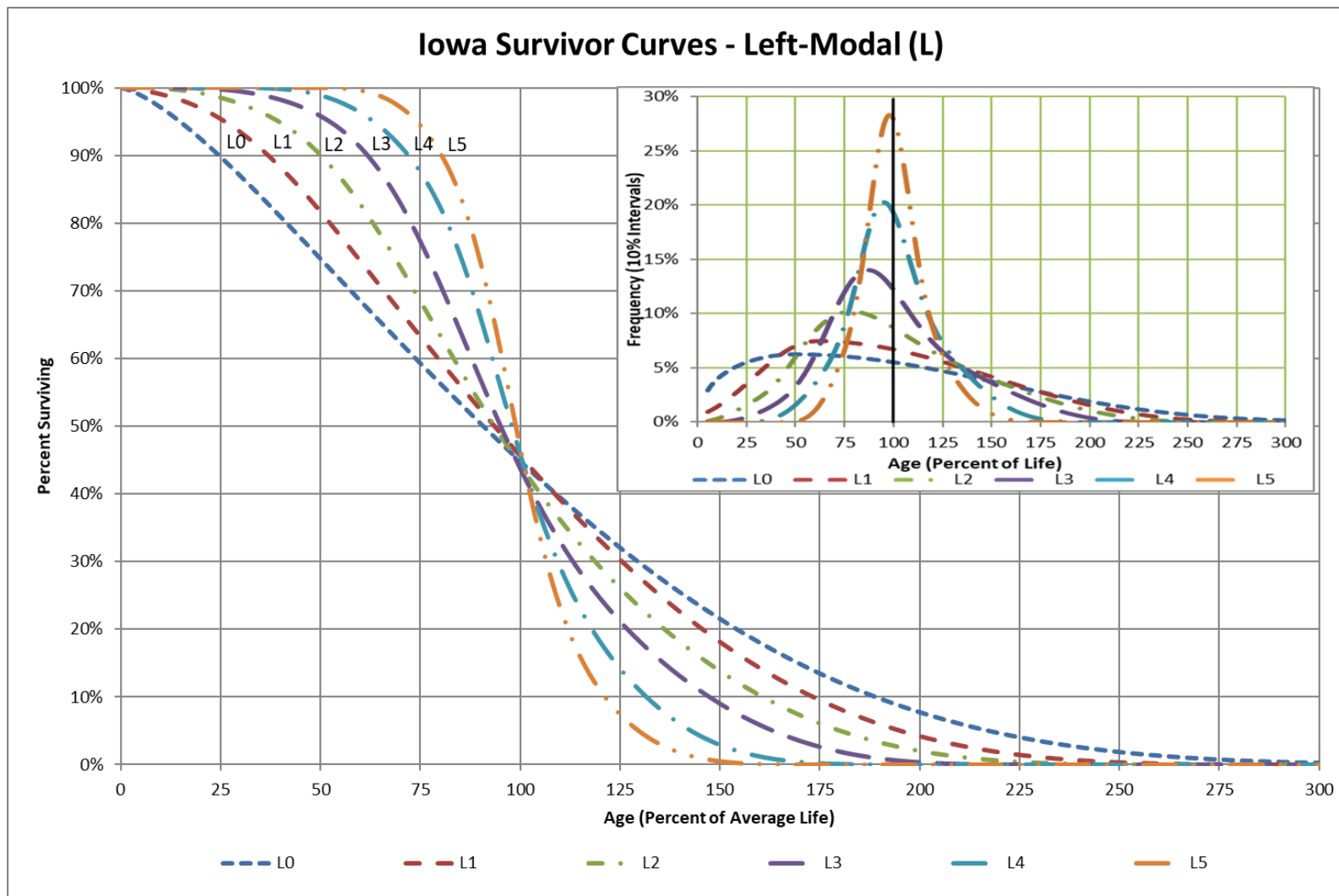




FIGURE 3: RIGHT MODAL OR "R" IOWA TYPE SURVIVOR CURVES

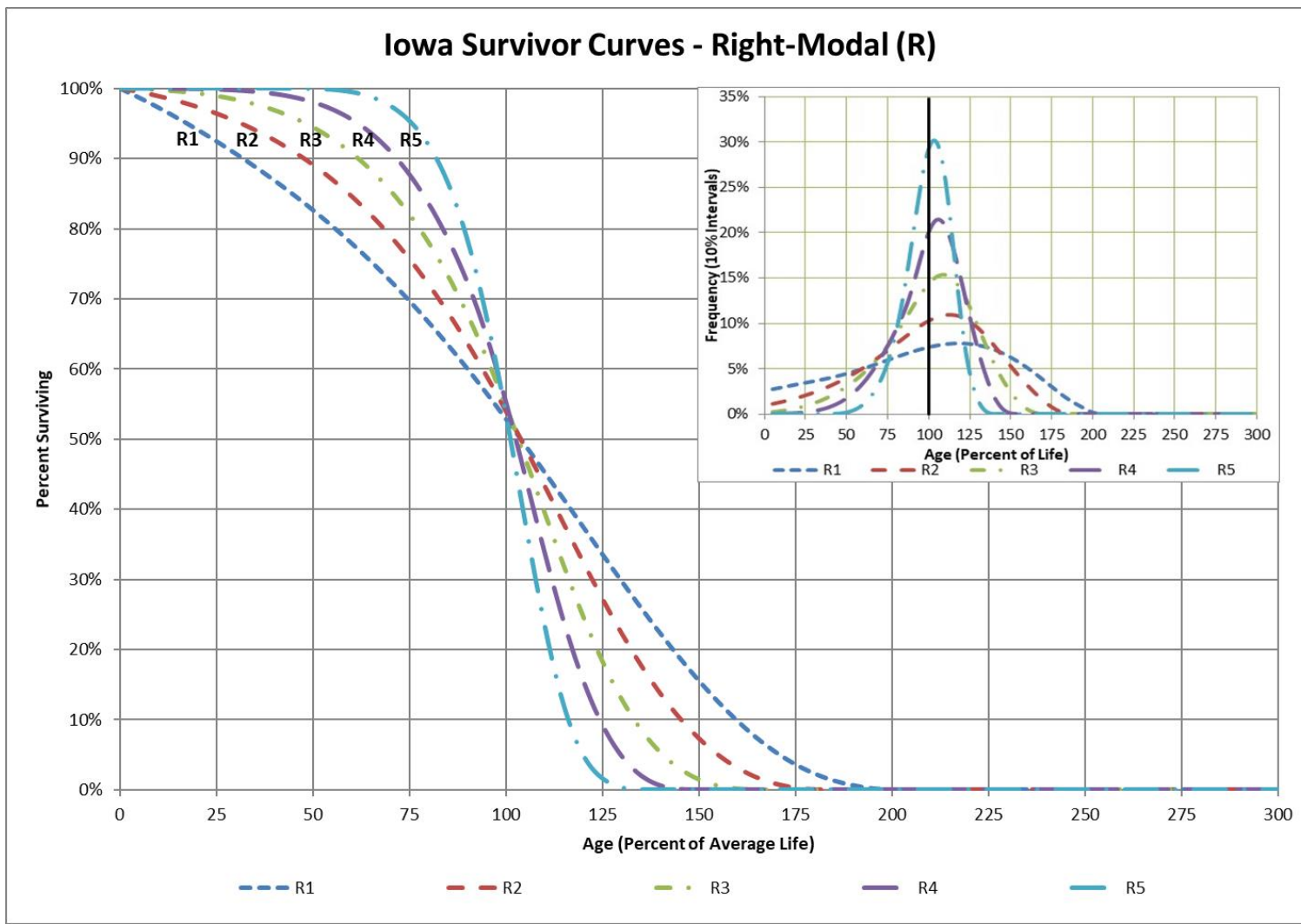




FIGURE 4: SYMMETRICAL OR "S" IOWA TYPE SURVIVOR CURVES

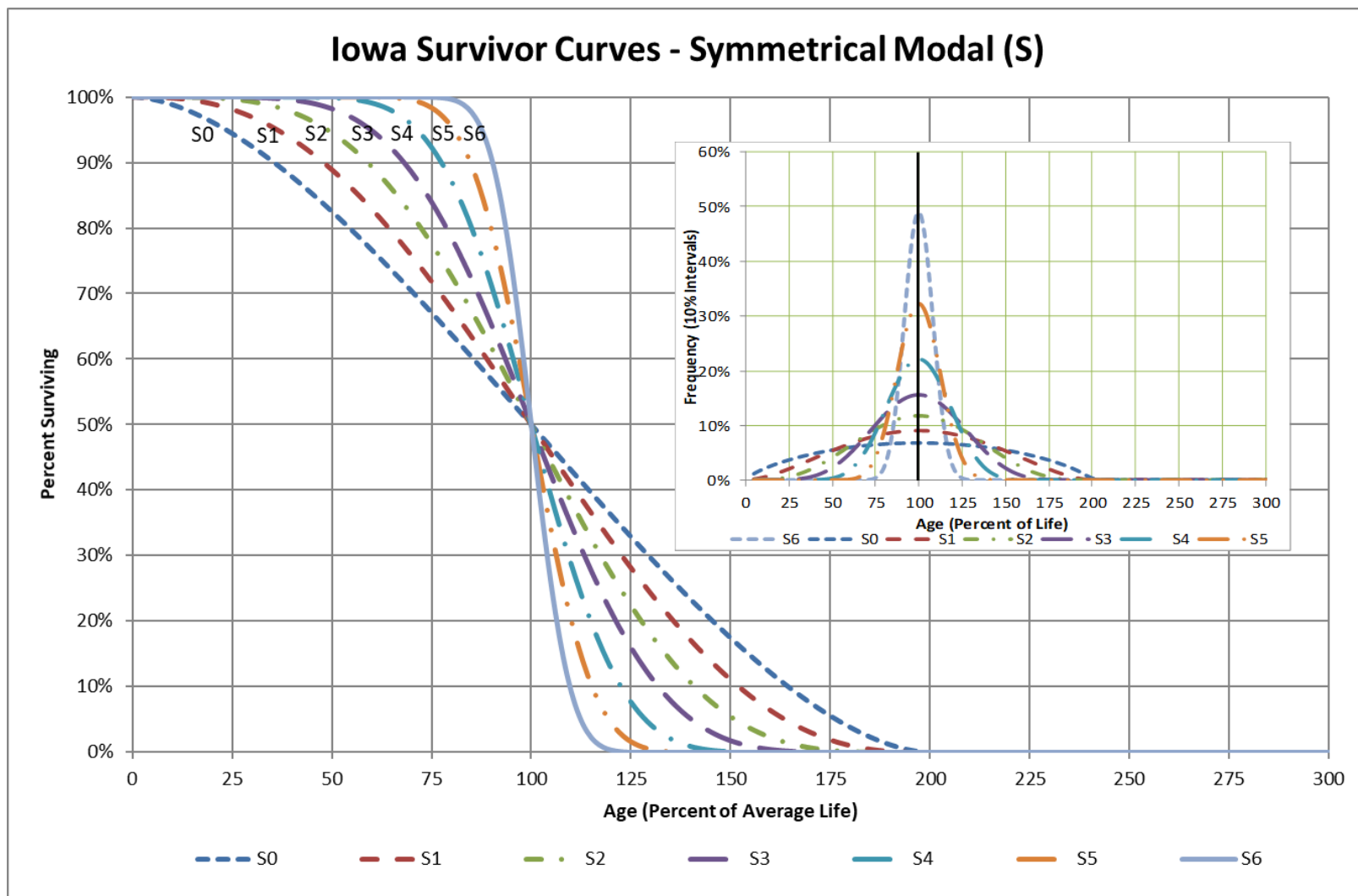
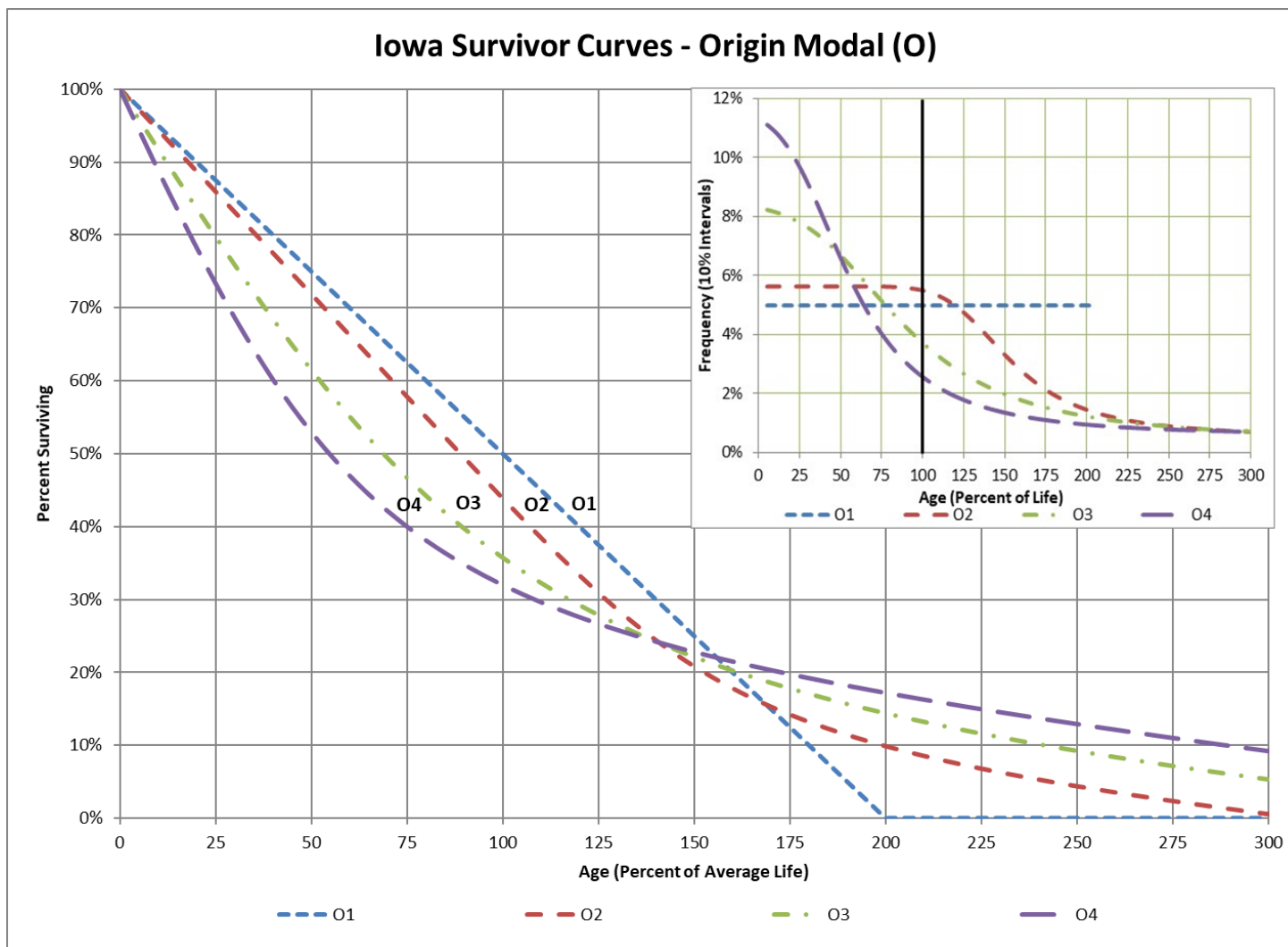




FIGURE 5: ORIGIN MODAL OR "O" IOWA TYPE SURVIVOR CURVES





6.4 Retirement Rate Method of Analysis

The retirement rate method is a widely accepted actuarial method used to create survivor curves¹⁰. This method is also referred to as an original life table. These survivor curves can then be used to determine the average service life of a plant account. The retirement rate method is thoroughly explained in several publications, including Statistical Analyses of Industrial Property Retirements,¹¹ Engineering Valuation and Depreciation¹² and Depreciation Systems¹³.

The retirement rate method is a subgroup of the placement and the experience band methods, as described in “Depreciation Systems”. The placement band method creates a survivor curve which describes the life characteristics of assets placed into service during a selected timeframe. The experience band method creates a survivor curve which describes the life characteristics of assets removed from service during a selected time frame. The retirement rate method creates both placement and experience bands to give the most complete or representative data. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

6.5 Schedules of Annual Transactions in Plant Records

The property group used to illustrate the retirement rate method is observed for the experience band 2008-2017 during which there were placements during the years 2003-2017. In order to illustrate the summation of the aged data by age interval, the data was compiled in the manner presented in Schedules 1 and 2. In Schedule 1 (page 9-10), the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the asset invested in 2003 were retired in 2008. The \$10,000 retirement occurred during the age interval between 4 ½ and 5 ½ years (2008 - 2003) on the basis that approximately one-half of the amount of property was installed prior to and after July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2008

¹⁰ The Alberta Utilities Commission in particular has approved the use of the retirement rate method for many decades.

¹¹ Anson, Winfrey & Hempstead, supra note 7

¹² Anson, Winfrey & Hempstead, supra note 7

¹³ Wolf & Fitch, supra note 2



retirements of 2003 installations and ending with the 2017 retirements of the 2012 installations. Thus, the total amount of \$143,000 for age interval 4½-5½ equals the sum of:

$$\$10 + \$12 + \$13 + \$11 + \$13 + \$13 + \$15 + \$17 + \$19 + \$20 = \$143 \text{ k}$$

Other transactions which affect the group are recorded in a similar manner in Schedule 2 (page 9-11). The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are not totaled with the retirements but are used in developing the exposures at the beginning of each age interval.



SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2008-2017 – SUMMARIZED BY AGE INTERVAL

Experience Band 2008-2017

Placement Band 2003-2017

**Retirements (Thousands of Dollars)
Annual Survivors at the Beginning of the Year**

Year Placed (1)	2008 (2)	2009 (3)	2010 (4)	2011 (5)	2012 (6)	2013 (7)	2014 (8)	2015 (9)	2016 (10)	2017 (11)	Total Durring Age Interval (12)	Age Interval (13)
2003	10	11	12	13	14	16	23	24	25	26	26	13½-14½
2004	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2005	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2006	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2007	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2008	4	9	10	11	12	13	14	15	16	20	105	8½-9½
2009		5	11	12	13	14	15	16	18	20	113	7½-8½
2010			6	12	13	15	16	17	19	19	124	6½-7½
2011				6	13	15	16	17	19	19	131	5½-6½
2012					7	14	16	17	19	20	143	4½-5½
2013						8	18	20	22	23	146	3½-4½
2014							9	20	22	25	150	2½-3½
2015								11	23	25	151	1½-2½
2016									11	24	153	½-1½
2017										13	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606	



SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2008-2017 – SUMMARIZED BY AGE INTERVAL

Experience Band 2008-2017

Placement Band 2003-2017

**Acquisitions, Transfers and Sales (Thousands of Dollars)
Annual Survivors at the Beginning of the Year**

Year Placed (1)	2008 (2)	2009 (3)	2010 (4)	2011 (5)	2012 (6)	2013 (7)	2014 (8)	2015 (9)	2016 (10)	2017 (11)	Total Durring Age Interval (12)	Age Interval (13)
2003	-	-	-	-	-	-	60 ^a	-	-	-	-	13½-14½
2004	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2005	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2006	-	-	-	-	-	-	-	(5) ^b	-	-	60	10½-11½
2007	-	-	-	-	-	-	-	6 ^a	-	-	-	9½-10½
2008	-	-	-	-	-	-	-	-	-	-	(5)	8½-9½
2009	-	-	-	-	-	-	-	-	-	-	-	7½-8½
2010	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2011	-	-	-	-	-	-	-	(12) ^b	-	-	-	5½-6½
2012	-	-	-	-	-	-	-	-	22 ^a	-	-	4½-5½
2013	-	-	-	-	-	-	-	(19) ^b	-	-	10	3½-4½
2014	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2015	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	1½-2½
2016	-	-	-	-	-	-	-	-	-	-	-	½-1½
2017	-	-	-	-	-	-	-	-	-	-	-	0-½
Total	-	-	-	-	-	-	60	(30)	22	(102)	(50)	

^a Transfer Affecting Exposures at Beginning of Year

^b Transfer Affecting Exposures at End of Year

^c Sale with Continued Use

Parentheses denote Credit amount.



6.6 Schedule of Plant Exposed to Retirement

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 (page 9-13). The surviving plant at the beginning of each year from 2007 through 2016 is recorded by year in the portion of the table titled "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition, are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2013 are calculated in the following manner:

Exposures at age 0	=	amount of addition	=	\$750,000
Exposures at age ½	=	\$750,000 - \$ 8,000	=	\$742,000
Exposures at age 1½	=	\$742,000 - \$18,000	=	\$724,000
Exposures at age 2½	=	\$724,000 - \$20,000 - \$19,000	=	\$685,000
Exposures at age 3½	=	\$685,000 - \$22,000	=	\$663,000

For the entire experience band 2008-2018, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

$$\$255 + \$268 + \$ 284 + \$311 + \$334 + \$374 + \$405 + \$448 + \$501 + \$609 = \$3,789k$$



SCHEDULE 3 – PLANT EXPOSED TO RETIREMENT AT THE BEGINNING OF EACH YEAR, 2008 -2017 – SUMMARIZED BY AGE INTERVAL

Experience Band 2008 - 2017

Placement Band 2003-2017

**Exposures (Thousands of Dollars)
Annual Survivors at the Beginning of the Year**

Year Placed (1)	2008 (2)	2009 (3)	2010 (4)	2011 (5)	2012 (6)	2013 (7)	2014 (8)	2015 (9)	2016 (10)	2017 (11)	Total at Beginning of Age Interval (12)	Age Interval (13)
2003	255	245	234	222	209	195	239	216	192	167	167	13½-14½
2004	279	268	256	243	228	212	194	174	153	131	323	12½-13½
2005	307	296	284	271	257	241	224	205	184	162	531	11½-12½
2006	338	330	321	311	300	289	276	262	242	226	823	10½-11½
2007	376	367	257	346	334	321	307	267	280	261	1,097	9½-10½
2008	420 [□]	416	407	397	386	374	361	347	332	316	1,503	8½-9½
2009		460 [□]	455	444	432	419	405	390	374	356	1,952	7½-8½
2010			510 [□]	504	492	479	464	448	431	412	2,463	6½-7½
2011				580 [□]	574	561	546	530	501	482	3,057	5½-6½
2012					660 [□]	653	639	623	628	609	3,789	4½-5½
2013						750 [□]	742	724	685	663	4,332	3½-4½
2014							850 [□]	841	821	799	4,955	2½-3½
2015								960 [□]	949	923	5,719	1½-2½
2016									1,080 [□]	1,069	6,579	½-1½
2017										1,220 [□]	7,490	0-½
Total	1,975	2,382	2,724	3,318	3,872	4,494	5,247	5,987	6,852	7,796	44,780	

[□] Additions during the year.

1555	1922	2214	2738	3212	3744	4397	5027	5772	6576	44780
420	460	510	580	660	750	850	960	1080	1220	0
1975	2382	2724	3318	3872	4494	5247	5987	6852	7796	44780



6.7 Original Life Tables

The original life table, illustrated in Schedule 4 (page 9-15) is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100 percent at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age 4½	=	88.15		
Exposures at age 4½	=	\$3,789,000		
Retirements from age 4½ to 5½	=	\$143,000		
Retirement Ratio	=	$\$143,000 \div \$3,789,000$	=	0.0377
Survivor Ratio	=	$1.000 - 0.0377$	=	0.9623
Percent surviving at age 5½	=	$(88.15) \times (0.9623)$	=	84.83

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless. The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.



SCHEDULE 4: ORIGINAL LIFE TABLE - CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2008-2017				Placement Band 2003-2017	
Age at Beginning of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	% Surviving at Beginning of Age Interval
0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.6
12.5	323	44	0.1362	0.8638	48.9
13.5	167	26	0.1557	0.8443	42.24
					35.66
Total	44,780	1,606			

- Exposure and Retirement Amounts are in Thousands of Dollars
- Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.
- Column 3 from Schedule 1, Column 12, Retirements for Each Year.
- Column 4 = Column 3 divided by Column 2.
- Column 5 = 1.0000 minus Column 4.
- Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval.



6.8 Smoothing the Original Survivor Curve

The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100 percent to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percentages surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group.



FIGURE 6: ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH A L1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

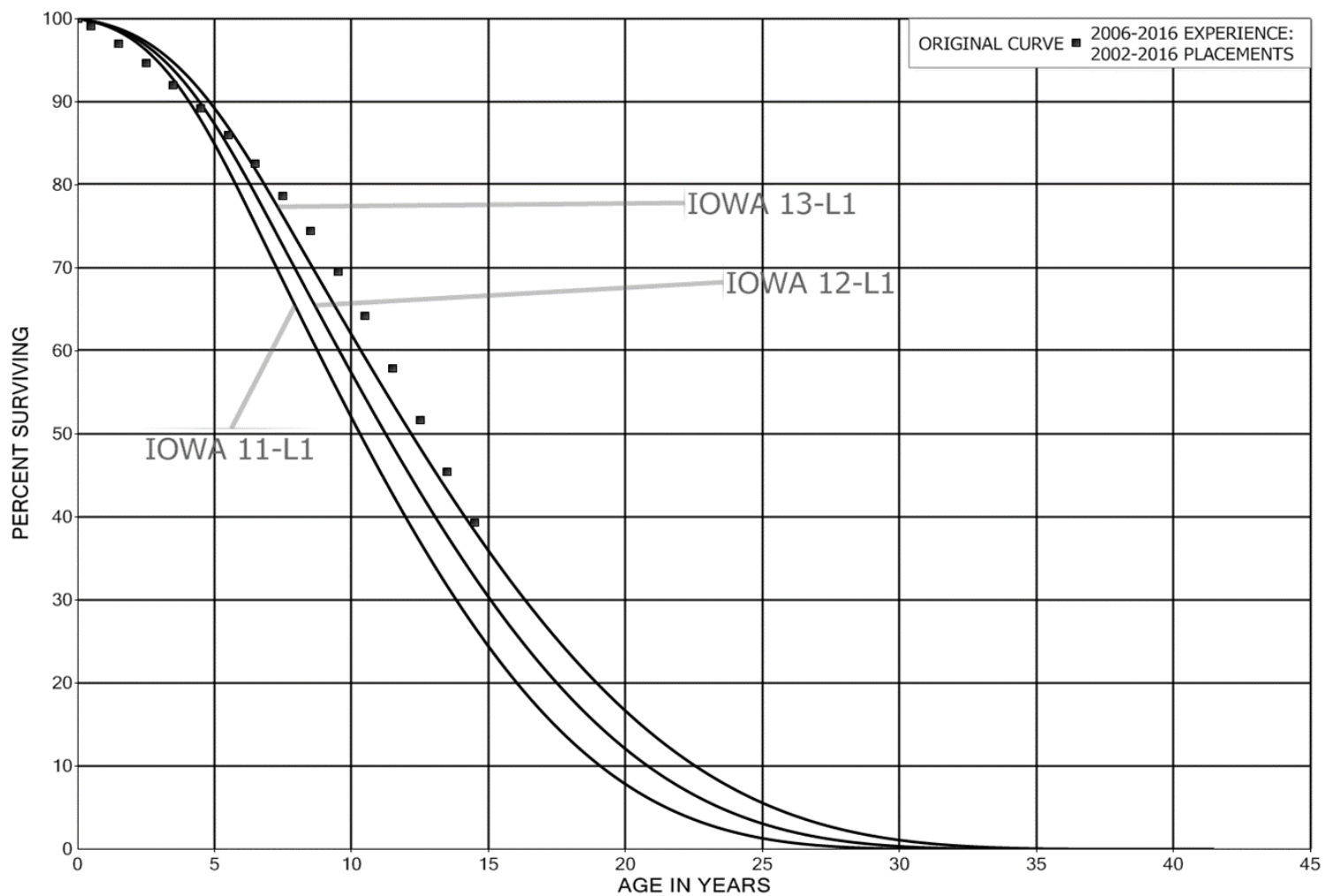




FIGURE 7: ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH A SO IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

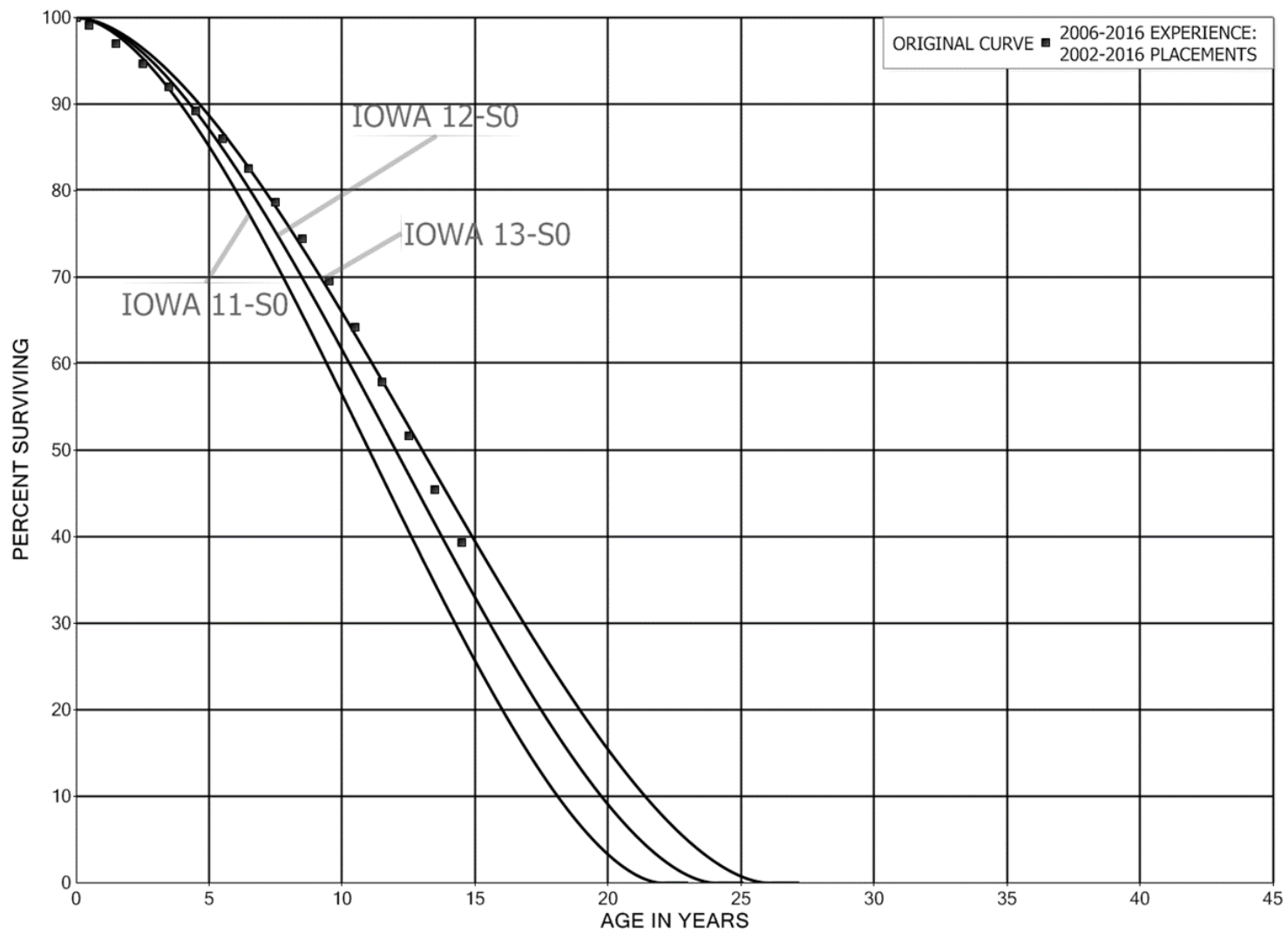




FIGURE 8: ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH A R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

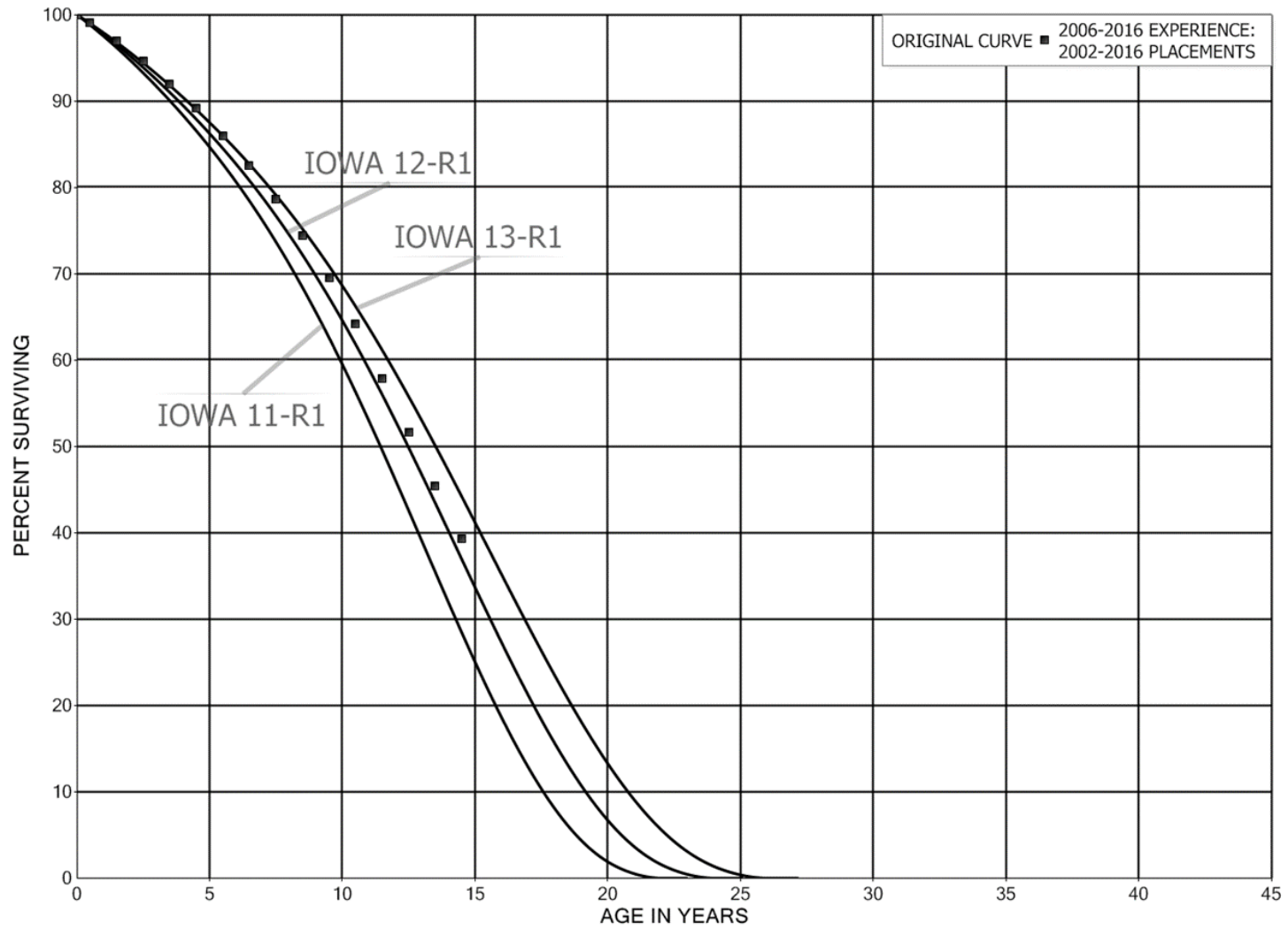
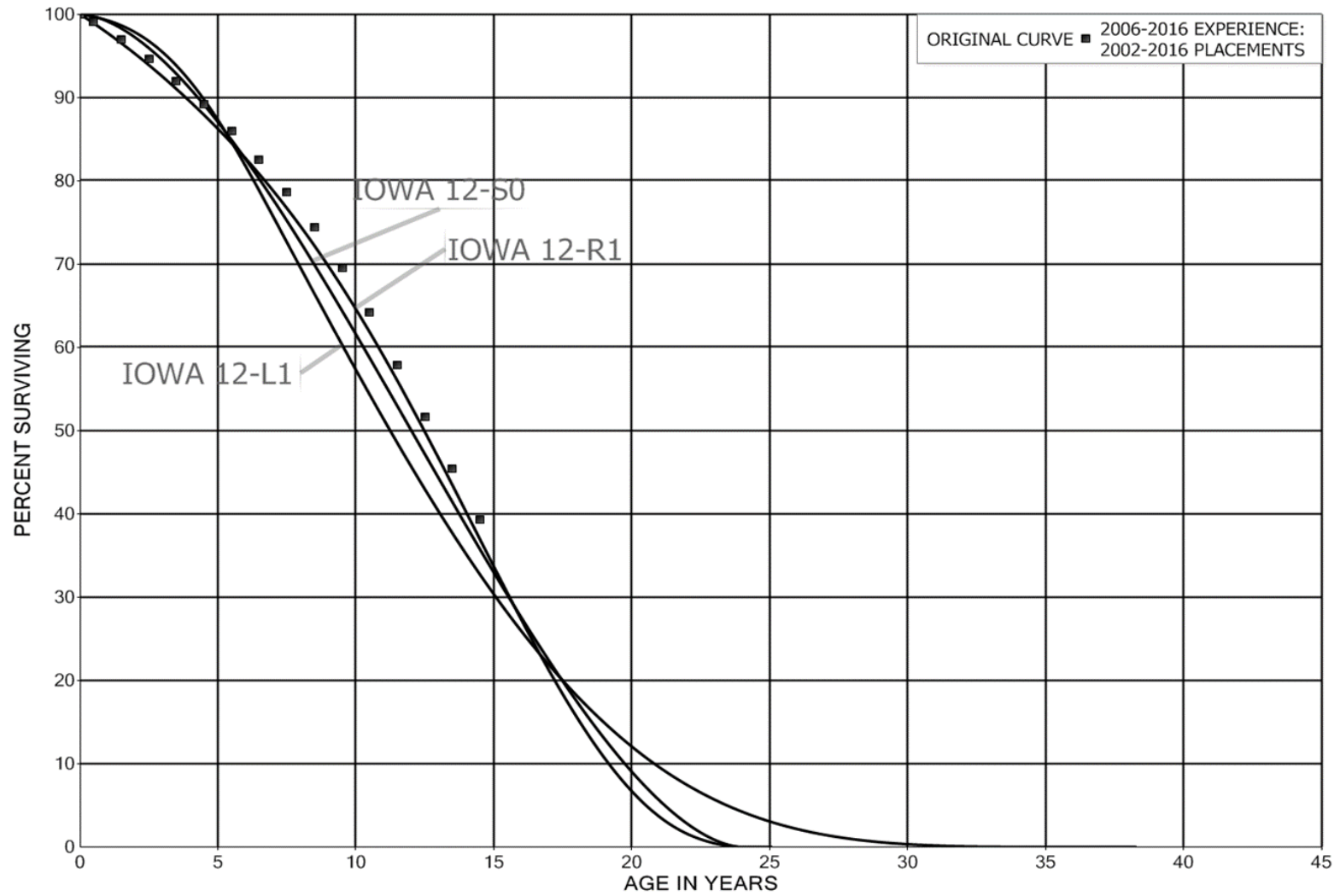




FIGURE 9: ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH A L1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES





1 **DERECOGNITION OF ASSETS**

2

3 Article 410 of the OEB Accounting Procedures Handbook for Electricity Distributors requires
 4 property, plant and equipment (“PP&E”) and intangible assets to be derecognized upon
 5 disposal, or when their use is no longer expected to offer future economic benefits. The gain
 6 or loss arising from the derecognition of PP&E and intangible assets is calculated as the
 7 difference between the net disposal proceeds (if any) and the carrying amount of the item,
 8 and is included in the utility’s profit or loss during the period in which the item is
 9 derecognized.

10

11 Table 1 below summarizes 2020-2022 actual and 2023-2024 forecasted derecognition. Table
 12 2 summarizes the forecasted derecognition for the 2025-2029 period. The forecast is
 13 informed by the utility’s capital expenditure proposals outlined in the Distribution System
 14 Plan (Exhibit 2B, Section E4), and calculated on the basis of the net book values associated
 15 with assets that the utility expects to remove from service as part of its planned capital
 16 program. The methodology to forecast derecognition is consistent with the last rebasing
 17 application.¹

18

19 **Table 1: 2020-2024 Derecognition (\$ Millions)**

	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Bridge
Derecognition	23.2	24.0	25.0	28.0	33.5

20

21 **Table 2: 2025-2029 Derecognition (\$ Millions)**

	2025	2026	2027	2028	2029
Derecognition	37.9	39.4	41.1	41.6	42.8

¹ EB-2018-0165 at Exhibit 4B, Tab 1, Schedule 2; and 9-Staff-156 at page 3.

1 **WORKING CAPITAL ALLOWANCE (“WCA”)**

2

3 Toronto Hydro determined the Working Capital Allowance (“WCA”) included in the
4 calculation of the 2025 to 2029 rate base, based on a Lead-Lag Study performed by
5 Guidehouse Inc. (“Guidehouse”), which is filed at Exhibit 2A, Tab 3, Schedule 2.

6

7 Guidehouse used 12 months of Toronto Hydro’s financial information to determine the
8 revenue lag and expense leads for various detailed revenue and cost components.
9 Guidehouse’s methodology is consistent with the last three Lead-Lag studies performed for
10 Toronto Hydro with one key exceptions. Because the collections data for the three most
11 recent historical years (i.e. 2020-2022) was skewed by the effects of the COVID-19
12 pandemic, Guidehouse applied the collection lag days it used in the previous study as a
13 proxy for normal business conditions.¹

14

15 Toronto Hydro intends to ask Guidehouse to re-run the Lead-Lag study based on 2023
16 actuals, including collections data, to asses the impacts to the WCA and rate base. If the
17 utility determines, based on the results of the updated Study, that there are material
18 variances to the WCA and rate base, this information (including an updated Lead-Lag
19 study) would be filed with interrogatory responses or technical conference undertakings
20 depending on the timing of these procedural steps.

21

22 The Cost of Power is one of the components in the WCA calculations and determined
23 based on the following data inputs: RPP prices, the Hourly Ontario Energy Price (“HOEP”),²
24 the Transmission rates,³ Smart Metering Entity charge⁴ and Regulatory charges.⁵ The Cost

¹ Please refer to Schedule 5 of DRO Update for EB-2018-0165 application submitted on January 21, 2020

² Regulated Price Plan report issued by the OEB (October 21, 2022).

³ OEB Decision and Rate Order, EB-2023-0101, 2023 Uniform Transmission Rates Update (June 1, 2023) and

1 of Power calculation also includes the impact of the latest Ontario Electricity Rebate,⁶
2 available at the time of the quantification. Details of the 2025-2029 Cost of Power, serving
3 as the input to the Revenue Requirement workform to calculate WCA and rate base, are
4 provided in Appendix A. Table 1 below presents a summary calculation of the WCA.

5

6 **Table 1: WCA Summary Calculation**

	2025 Expenses (\$ Millions)	Working Capital Factor		Expenses times Working Capital Factor (\$ Millions)
Cost of Power	2,871.1	5.60%		160.7
OM&A	343.0	4.47%		15.3
Interest on Long Term Debt	131.9	11.15%		14.7
Income and Capital Taxes	27.9	12.40%		3.5
Sub-Total Working Capital Requirement				194.2
HST at 13%		Net Lag Days	Expenses * Net Lag Days/365 * 13% HST	
Revenue	3,891.0	-7.45	-10.3	
Cost of Power	2,871.1	44.38	45.4	
Eligible OM&A Expenses	142.6	43.06	2.2	
HST Working Capital Requirement				37.2
Total Working Capital				231.5
Working Capital as % of Cost of Power and Controllable Expenses				7.20%

Hydro One Networks Inc., EB-2021-0110 (November 29, 2022)

⁴ OEB Decision and Order, Smart Meter Charge, EB-2022-0137, (September 8, 2022).

⁵ OEB Decision and Order, In the matter of regulatory charges for the Wholesale Market Services rate and the Rural or Remote Electricity Rate Protection charge, EB-2022-0269 (December 8, 2022)

⁶ Amendments as of November 1, 2022 to Ontario Regulation 363/16 under the Ontario Rebate for Electricity Consumers Act, 2016

1 Table 2 below presents 2020 approved, 2020-2022 actuals and 2023 -24 bridge WCA.

2

3 **Table 2: 2020-2024 Working Capital Allowance (\$ Millions)**

	OEB Approved	Actuals			Bridge	
	2020	2020	2021	2022	2023	2024
Working Capital Allowance	216.2	249.8	217.2	220.7	240.6	248.0

4

5 Variances in the working capital allowance show in Table 2 above are primarily driven by
 6 changes in commodity expenses.

7

8 Table 3 below present the 2025 to 2029 forecasted WCA based on the updated Lead-Lag
 9 study at Exhibit 2A, Tab 3, Schedule 2.

10

11 **Table 3: 2025-2029 Working Capital Allowance (\$ Millions)**

	Forecast				
	2025	2026	2027	2028	2029
Working Capital Allowance	231.5	237.1	242.5	250.8	255.6



Working Capital Requirements of Toronto Hydro-Electric System Limited

2025-2029

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Disclaimer

This report (the “report”) was prepared for Toronto Hydro-Electric System Limited (“THESL”) by Guidehouse Inc. (“Guidehouse”). The report was prepared solely for the purposes of THESL’s rate application to the Ontario Energy Board and may not be used for any other purpose. Use of this report by any third party outside of THESL’s rate application is prohibited. Use of this report should not, and does not, absolve the third party from using due diligence in verifying the report’s contents. Any use which a third party makes of this report, or any reliance on it, is the responsibility of the third party. Guidehouse extends no warranty to any third party.

Executive Summary

Guidehouse was retained by Toronto Hydro-Electric System Limited (“THESL”) to calculate the working capital requirements of THESL using a lead-lag study.

Working capital is the amount of funds that are required to finance the day-to-day operations, and which are included as part of a rate base for ratemaking purposes. A lead-lag study is the most accurate basis for the determination of working capital and was used by Guidehouse for this purpose. The results of this study are provided in this report.

The lead/lag days calculated in this study are based on THESL’s revenue and expense data from 2022. The working capital requirement of THESL’s distribution business is shown below.

Table 1: THESL Summary of Working Capital Requirement

	Test Year 2022
Percentage of OM&A and Cost of Power	7.02%
Working Capital Requirement (\$M)	\$197.87

The working capital requirements shown in Table 1 above are based upon the revenue lag and expense lead days shown in Table 2.

Table 2: THESL Working Capital Requirements (Test Year 2022)

Description	Revenue Lag Days	Expense Lead Days	Net Lag Days
Cost of Power	53.15	32.72	20.43
OM&A Expenses	53.15	36.84	16.31
PILS	53.15	7.88	45.27
Interest Expense	53.15	12.45	40.70

1. Introduction and Methodology

Guidehouse Inc. was retained by Toronto Hydro-Electric System Limited (“THESL”) to calculate its working capital requirements. This report provides the results of the assessment and the resulting working capital requirements.

Working capital is the amount of funds that are required to finance the day-to-day operations, and which are included as part of a rate base for ratemaking purposes. A lead-lag study is the most accurate basis for the determination of working capital and was used by Guidehouse for this purpose.

A lead-lag study analyzes the time between the date customers receive service and the date that customers’ payments are available to THESL (or “lag”) together with the time between the date THESL receives goods and services from its vendors and the date that THESL pays for them (or “lead”).

“Leads” and “Lags” are both measured in days and are dollar-weighted where appropriate. The dollar-weighted net lag (lag minus lead) days is then divided by 365 (or 366 for leap years) and then multiplied by the annual test year expenses to determine the amount of working capital required. The resulting amount of working capital is then included in THESL’s rate base for the purpose of determining revenue requirement.

THESL provided revenue and expense data to support the lead-lag study for both the 2021 and the 2022 calendar years. Generally, Guidehouse utilized the revenue and expense data for the 2022 calendar year, as it was the most recent source of data provided.

1.1 Key Concepts

The following section outlines the key concepts used throughout this report to assess the working capital requirements of THESL’s business. This includes the mid-point method, statutory approach, revenue lag components, expense lead components and dollar weighting.

1.1.1 Mid-Point Method

When a service is provided to (or by) THESL over a period of time, the service is deemed to have been provided (or received) evenly over the period, unless specific information regarding the provision (or receipt) of that service indicates otherwise. If both the service end date (“Y”) and the service start date (“X”) are known, the mid-point of a service period can be calculated using Equation 1-1.

Equation 1-1

$$Mid - Point = \frac{(Y - X) + 1}{2}$$

When specific start and end dates are unknown, but it is known that a service is evenly distributed over the mid-point of a period, an alternative formula that is generally used is shown below. Equation 1-2 uses the number of days in a year (“A”) and the number of periods in a year (“B”):

Equation 1-2

$$\text{Mid - Point} = \frac{A/B}{2}$$

1.1.2 Statutory Approach

In conjunction with the mid-point method, it is important to note that not all areas of this study may utilize dates on which actual payments were made to (or by) THESL. In some instances, the due dates for payments are established by statute or by regulation. In these instances, the due date established by statute has been used in lieu of when payments were made.

1.1.3 Revenue Lag Components

As used in this study, revenue lags are comprised of Retail Revenue, IESO Credits and Other Revenues. The lag associated with Retail Revenue consist of four components:

- Service Lag component (the average time from the provision of electricity to a customer until the meter is read);
- Billing Lag component (the average time from when the meter is read to when the bill is generated and provided to customers);
- Collections Lag component (the average time from when a bill is provided to the customer until the customer initiates payment to the utility); and,
- Payment Processing Lag component (the average time from when the customer provides payment to the utility until when the payment is made liquid and available to the utility).

1.1.4 Expense Lead Components

As used in this study, expense leads are defined to consist of two components:

- Service Lead component (services are assumed to be provided to THESL evenly around the mid-point of the service period); and,
- Payment Lead component (the time period from the end of the service period to the time payment was made and when funds have left THESL's possession).

1.1.5 Dollar Weighting

Both leads and lags should be dollar-weighted where appropriate and where data is available to accurately reflect the flow of dollars. For example, suppose that a particular transaction has a lead time of 100 days and has a dollar value of \$100. Further, suppose that another transaction has a lead time of 30 days with a dollar value of \$1 million. A simple un-weighted average of the two transactions would give us a lead time of 65 days $([100+30]/2)$. However, when these two transactions are dollar weighted, the resulting lead time would be closer to 30 days which is more representative of how the dollars flow.

1.2 Methodology

Performing a lead-lag study requires two key undertakings:

1. Developing an understanding of how the regulated distribution business operates in terms of products and services sold to customers/purchased from vendors, and the policies and procedures that govern such transactions; and,
2. Modeling such operations using data from a relevant period of time and a representative data set. It is important to ascertain and factor into the study whether (or not) there are known changes to existing business policies and procedures going forward. Where such changes are known and material, they should be factored into the study.

To develop an understanding of THESL's operations, interviews with personnel within THESL's Accounts Receivable, Customer Service, Wholesale Market Operations, Payroll, Treasury, and Tax Departments were conducted. Key questions that were addressed during the course of the interviews included:

1. What is being sold (or purchased)? If a service is being provided to (or by) THESL, over what time period was this service provided;
2. Who are the buyers (or sellers);
3. What are the terms for payment? Are the terms for payment driven by industry norms or by company policy? Is there flexibility in the terms for payment;
4. Are any changes to the terms for payment expected? Are these terms driven by industry or internally? What is the basis for any such changes;
5. Are there any new rules or regulations governing transactions relating to transmission operations that are expected to materialize over the time frame considered in this report; and,
6. How are payments made (or received)? Payment types have different payment lead times (i.e., internet payments have shorter deposit times than cheque deposit times)

2. Revenue Lags

This section of the report provides the revenue lag days for THESL. A revenue lag represents the number of days from the date that is service is rendered by THESL until the date payments are received and funds are available to THESL.

THESL receives revenue from the following funding streams:

- **Retail Revenue:** a distribution utility providing service to its customers typically derives its revenues from bills paid for service by its customers;
- **IESO Credits:** THESL also receives revenue in the form of IESO reimbursement credits for Ontario Electricity Support Program (“OESP”), Ontario Electricity Rebate (“OER”), Renewable Energy Standard Offer Program (“RESOP”), Feed-in Tariff (“FIT”), and Micro Feed-in Tariff (“MFIT”);
- **Other Revenue:** THESL staff indicated that it receives additional external revenue.

A summary of the revenue lags for THESL’s distribution business is shown below.

Table 3: Summary of Retail Revenue Lag (2022)

Description	Amounts (\$M)	Lag Time Days	Weighting Factor	Weighted Lag Time Days
Retail Revenue	\$3,226.79	52.62	85.00%	44.73
IESO Credits	\$432.31	63.32	11.39%	7.21
Other Revenue	\$136.91	33.53	3.61%	1.21
Total	\$3,796.01		100.00%	53.15

2.1 Retail Revenue Lag

Retail revenue lag consists of the following components:

- Service Lag;
- Billing Lag;
- Collections Lag; and,
- Payment Processing Lag

Service Lag

The service lag is defined as the midpoint of the service period; the halfway point between the beginning of the service period and the end of the service period. The service period end is typically defined as the date the meter is read. All THESL customers are billed monthly. The Service Lag is calculated to be 15.21 days.

Billing Lag

The billing lag is defined as the time period from period end (meter read) to the time that the customer's bill is generated in the customer information system. An analysis of THESL meter billing data indicated that THESL customers have an average billing lag of 11.79 days.

Collections Lag

The collections lag is defined as the time period from when the bill is generated in the customer information system to the time when the customer provides payment to THESL and when that payment is recorded in THESL's billing system. The collections lag is measured by analyzing the receivables aging data provided by THESL. THESL's collection lag was calculated to be 24.32 days, carried forward from the most recent study performed.¹

Payment Processing Lag

The payment processing lag represents the average time from when the customer provides payment to the utility until when the payment is made liquid and available to the utility. THESL's payment processing lag was calculated to be 1.31 days

2.2 IESO Credits

Table 4 below summarizes the amounts and revenue lag times associated with the components that make up IESO credits revenue.

Table 4: Summary of IESO Credits (2022)

Description	Revenues (\$M)	Lag Days	Weighting	Weighted Lag Days
OER	\$348.05	63.29	80.51%	50.95
FIT	\$58.26	63.58	13.48%	8.57
OESP	\$21.71	63.17	5.02%	3.17
MFIT	\$4.16	63.58	0.96%	0.61
RESOP	\$0.13	62.70	0.03%	0.02
Total	\$432.31		100.00%	63.32

2.3 Other External Revenue

THESL Distribution collects revenues from a variety of other sources, in addition to the retail revenue and IESO credits discussed above. THESL staff provided monthly data and payment

¹ Lead-lag studies use the most recent and accurate historical data available for calculating results. For this study revenue and expense data from 2022 was generally used. However, for purposes of calculation of collection lag days Guidehouse used the days calculated in the 2020 Addendum ("2020 Update") to the filed 2017 Lead Lag Study ("2017 Study"). Due to significant balances outstanding more than 120 days arising from the Covid-19 pandemic and resulting policy response by the Ontario Electric Board, calculating the collection lag days using receivables aging as of the end of 2022 would have inflated that calculation and the resulting Cash Working Capital percentage. It is Guidehouse' opinion that collection data from the 2020 Update is more reflective of normal business operations going forward over the period 2025 to 2029.

information for the other external revenue. The table below summarizes revenue lag time associated this other external revenue.

Table 5: Summary of Other External Revenue (2022)

Description	Revenues (\$M)	Lag Days	Weighting	Weighted Lag Days
Other External Revenue	\$136.91	33.53	100.00%	33.53
Total	\$136.91		100.00%	33.53

3. Expense Leads

The determination of working capital requires both a measurement of the lag in the collection of revenues for services provided by THESL, and the lead times associated with payments for services provided to THESL. Expense Leads are defined as the time period between when a service is provided to THESL and when payment is required for that service.

The following expense leads were calculated in this study:

- Cost of Power;
- Operations, Maintenance and Administration (“OM&A”) expenses;
- Payments in Lieu of Taxes (“PILs”);
- Interest on THESL’S debt;
- Harmonized Sales Tax (“HST”).

3.1 Cost of Power

For the purpose of the lead-lag study, cost of power expenses were considered to consist of payments made by THESL to the following providers:

1. Independent Electricity System Operator (“IESO”) cost of power expenses (includes the purchasing of power supply requirements on a monthly basis from the IESO on a schedule defined by the IESO’s billing and settlement procedures);
2. Hydro One Low Voltage Charges;
3. Payments to Non-Utility Generators,
4. Distributed Generation

Expense lead times were calculated individually for each of the items listed above and dollar-weighted to derive the expense lead time of 32.72 days, as seen in Table 6 below.

Table 6: Cost of Power Expenses* (2022)

Delivery Month	Amounts (\$M)	Lead Time Days	Weighting Factor	Weighted Lead Time Days
Dec-21	\$196.82	34.5	8.21%	2.83
Jan-22	\$196.51	31.5	8.20%	2.58
Feb-22	\$189.63	30.0	7.91%	2.37
Mar-22	\$201.79	35.5	8.42%	2.99
Apr-22	\$180.54	32.0	7.53%	2.41
May-22	\$195.98	31.5	8.17%	2.57
Jun-22	\$219.74	34.0	9.16%	3.12
Jul-22	\$241.67	32.5	10.08%	3.28
Aug-22	\$236.13	34.5	9.85%	3.40
Sep-22	\$185.34	34.0	7.73%	2.63
Oct-22	\$172.50	32.5	7.19%	2.33
Nov-22	\$180.99	31.0	7.55%	2.34
Total	\$2,397.64		100.00%	32.85

**This table does not include Distributed Generation charges of \$62.55, Hydro One Low Voltage Charges of \$.52 and payments to Non-Utility Generators of \$.70. These lower the weighted-average cost of power slightly to 32.72.*

3.2 Operations, Maintenance and Administration (“OM&A”)

The following expenses are included in the calculation of lead days for OM&A expenses:

- **Payroll and Benefits;** this line item includes basic payroll, payroll withholdings, and benefit expenses related to the regulated utility. THESL staff provided the breakdown of payroll, payroll withholding and benefits expenses.
- **Consulting and Contracting Services;** this line item includes the provision of outside services to THESL.
- **Miscellaneous OM&A;** this line item includes miscellaneous OM&A expenses non-related to the procurement of Outside Services.
- **Property Tax;** this line item includes property tax payments to municipalities or taxing authorities in the Province of Ontario. These payments are typically made in installments.
- **Corporate Procurement Card;** this line item includes credit card expenses related to OM&A.
- **Lease Payments;** this line item includes payments made on the properties THESL uses for their operations.

Expense lead times were calculated individually for each of the items listed above and then dollar-weighted to derive a composite expense lead time of 36.83 days for OM&A expenses.

Table 7: Summary of OM&A Expenses (2022)

Description	Amounts (\$M)	Weighting	Expense Lead Time	Weighted Lead Time
Payroll & Benefits	\$209.47	58.43%	32.61	19.05
Consulting and Contract Staff	\$100.21	27.96%	44.29	12.38
Miscellaneous OM&A	\$42.80	11.94%	47.45	5.67
Property Tax	\$5.05	1.41%	-24.44	-0.34
Corporate Procurement Card	\$.73	0.20%	33.28	0.07
Lease Payments	\$.22	0.06%	15.62	0.01
Total	\$358.48	100.00%		36.84
Total Excluding Payroll & Benefits	\$149.01			
Percent OM&A that attracts HST	41.57%			

3.2.1 Payroll and Benefits

In addition to basic and management payroll the following benefits were considered as expenses THESL's business:

1. Three types of payroll withholdings including the Canada Pension Plan, Employment Insurance, and Income Tax withholdings
2. Contributions made to the THESL Pension Plan;
3. Payments made to the Worker Safety Improvement Board ("WSIB");
4. Payments made for the Employer Health Tax ("EHT");
5. Group Health, Dental, and Life Insurance related administrative fees and claims;

When all payroll, withholdings and benefits were dollar-weighted using actual payment data, the weighted average expense lead time associated with payroll and benefits was determined to be 32.61 days as shown in the table below.

Table 8: Summary of Payroll & Benefits Expenses (2022)

Description	Amounts (\$M)	Weighting	Expense Lead Time	Weighted Lead Time
Payroll	\$101.46	48.44%	23.10	11.19
Payroll Withholdings	\$51.18	24.43%	46.80	11.43
Pensions	\$33.03	15.77%	55.04	8.68
Benefits	\$19.37	9.25%	11.04	1.02
Other Benefits	\$4.43	2.11%	13.60	0.29
Total	\$209.47	100.00%		32.61

3.2.2 Consulting and Contract Staff

THESL engages consulting and contract staff to provide assistance in the areas of engineering, environmental services, receivables management, accounting, and general consulting. A dollar-weighted expense lead time of 44.29 days was determined based on a review of invoices rendered and payments made by THESL in 2022.

3.2.3 Miscellaneous OM&A

This category of expense includes items such as product purchases, equipment rentals, and provision of general services to THESL. Based on transactions in THESL's accounts payable system under this category, a dollar-weighted expense lead time of 47.45 days was derived.

3.2.4 Property Taxes

THESL makes property tax payments to the City of Toronto in installments. Using actual payment dates and amounts associated with THESL's distribution business for calendar year 2022, a dollar-weighted expense lead (lag) time of (24.44) days was determined.

3.2.5 Corporate Procurement Card

Procurement (or charge) cards are used by THESL's employees primarily for purchases of vehicle fuel. Based on actual invoices from THESL's charge card provider and payments made by THESL, a dollar-weighted expense lead time of 33.28 days was determined.

3.2.6 Lease Payments

THESL leases office space to support its ongoing operations. Using actual invoices and payments for 2022, a dollar-weighted expense lead time of 15.62 days was determined.

3.3 Payments in Lieu of Taxes ("PILs")

THESL makes payments in lieu of taxes in installments to the relevant taxing authorities. Table 7, below summarizes the components of the PILS expense lead calculation.

Table 9: Summary of Payments in Lieu of Taxes Expenses (Average 2019-2022)²

Description	Costs (\$M)	Weighting (%)	Total Lead Time	Weighted Lead
PILS	\$13.39	100.00%	7.88	7.88
Total	\$13.39	100.00%		7.88

² Guidehouse used an average as 2022 did not represent normal PILs activity.

3.4 Interest on Debt

THESL makes interest payments on its long and short-term debt. Such payments are generally made twice a year. Considering the various bonds and other long-term debt instruments, a dollar-weighted expense lead time of 12.45 days was determined for the 2022 calendar year.

Table 10: Interest Expense (2022)

Description	Amounts (\$M)	Lead Time Days	Weighting Factor	Weighted Lead Time Days
Interest Expense	\$91.13	12.45	100.00%	12.45
Total	\$91.13		100.00%	12.45

3.5 Harmonized Sales Tax

The expense lead times associated with the following items that attract HST were considered in THESL's distribution lead-lag study.

1. Revenues;
2. Cost of Power;
3. OM&A; and,

A summary of the expense lead times and working capital amounts associated with each of the above items is provided in the table below. Note that the statutory approach described at the outset was used to determine the expense lead times associated with THESL's remittances and disbursements of HST (*i.e.*, both remittances and collections are generally on the last day of the month following the date of the applicable invoice).

Table 11: Summary of HST Working Capital Amounts

Description	HST Lead Time	Working Capital Factor	Expenses Eligible	HST Amount	Test Year (\$M)
Revenues	-7.45	-2.04%	\$3,363.70	\$437.28	-\$8.93
Cost of Power	44.38	12.16%	\$2,461.42	\$319.98	\$38.87
OM&A Expenses ³	43.06	11.80%	\$149.01	\$19.37	\$2.29
Total					\$32.23

³ Costs within OM&A that attract HST include Corporate Procurement Card, Lease Payments, Consulting and Contract Staff and Miscellaneous OM&A. These represent 41.57% of OM&A Expenses included in the study. See Table 7 for a breakdown.

4. Working Capital Requirements

The table below summarizes THESL's working capital requirements for the test year.

Table 12: THESL Working Capital Requirements (Test Year 2022)

Description	Revenue Lag Days	Expense Lead Days	Net Lag Days	Working Capital Factor	Expenses (\$M)	Working Capital (\$M)
Cost of Power	53.15	32.72	20.43	5.60%	\$2,461.42	\$137.80
OM&A Expenses	53.15	36.84	16.31	4.47%	\$358.48	\$16.02
PILS	53.15	7.88	45.27	12.40%	\$13.39	\$1.66
Interest Expense	53.15	12.45	40.70	11.15%	\$91.13	\$10.16
Total					\$2,924.42	\$165.64
HST						\$32.23
Total - Including HST						\$197.87
Working Capital as a Percentage of OM&A incl. Cost of Power						7.02%

5. Findings and Conclusions

The purpose of this section is to compare the results from this study to THESL's prior working capital study as completed by Guidehouse.

5.1 Comparison with Prior Study (2020 Update)

Table 13: THESL Working Capital Requirements (2020 Update)

Description	Revenue Lag Days	Expense Lead Days	Net Lag Days	Working Capital Factor	Expenses (\$M)	Working Capital (\$M)
Cost of Power	54.07	32.62	21.45	5.86%	\$2,691.04	\$157.70
OM&A Expenses	54.07	35.19	18.88	5.16%	\$272.20	\$14.04
PILS	54.07	-10.05	64.12	17.57%	\$9.70	\$1.70
Interest Expense	54.07	25.34	28.73	7.85%	\$89.15	\$7.00
Total					\$3,062.09	\$180.44
HST						\$35.81
Total - Including HST						\$216.25
Working Capital as a Percent of OM&A incl. Cost of Power						7.30%

Table 14: THESL Working Capital Requirements (Test Year 2022)

Description	Revenue Lag Days	Expense Lead Days	Net Lag Days	Working Capital Factor	Expenses (\$M)	Working Capital (\$M)
Cost of Power	53.15	32.72	20.43	5.60%	\$2,461.42	\$137.80
OM&A Expenses	53.15	36.84	16.31	4.47%	\$358.48	\$16.02
PILS	53.15	7.88	45.27	12.40%	\$13.39	\$1.66
Interest Expense	53.15	12.45	40.70	11.15%	\$91.13	\$10.16
Total					\$2,924.42	\$165.64
HST						\$32.23
Total - Including HST						\$197.87
Working Capital as a Percentage of OM&A incl. Cost of Power						7.02%

Table 15: THESL Working Capital Requirements (Current versus Prior)

Description	Revenue Lag Days	Expense Lead Days	Net Lag Days	Working Capital Factor	Expenses (\$M)	Working Capital (\$M)
Cost of Power	-.92	0.10	-1.02	-0.26%	-\$229.62	-\$19.90
OM&A Expenses	-.92	1.65	-2.57	-0.69%	\$86.28	\$1.98
PILS	-.92	17.93	-18.85	-5.11%	\$3.69	-\$0.04
Interest Expense	-.92	-12.89	11.97	3.30%	\$1.98	\$3.16
Total					-\$137.66	-\$14.80
HST						-\$3.58
Total - Including HST						-\$18.38
Working Capital as a Percentage of OM&A incl. Cost of Power						-0.28%

Overall, the difference between the prior study and the current one is a decrease of .28%. The principal drivers of this decrease are described below.

5.1.1 Revenue Lag Days

As shown in the table above, the overall revenue lag in the current study has decreased by approximately one day since the prior study. Revenue lag has a large impact on the overall result of working capital studies, as it is considered in the working capital factor for all expense items. Minor variations in revenue lag can have large impacts on directional results. When the revenue lag is updated to the new results (53.15) and everything else from the previous study is held constant, the working capital percentage from the 2020 update would have been 7.04%. This is nearly equivalent to the results from the current study. Meaning revenue lag days are driving the majority of the difference between the studies.

Revenue lag is approximately .92 days shorter than the prior study, principally driven by billing lag being .71 days shorter. This is because the highest weighted class, General Service 50-999 kW – Interval, had billing lag approximately three days shorter in the current study versus the prior one (13 vs 16).

5.1.2 Expense Lead Days

Although there are differences in expense lead days as calculated in this study versus the prior one, their combined effect is negligible. Updating the expense lead days to the newly calculated days in this study increases the working capital percentage a minimal .02%. The effects of additional OM&A Expense lead days (36.83 current study vs 35.19 previous study) and fewer Interest Expense lead days (12.45 current study vs 25.34 previous study) mostly offset.

5.1.3 Updated Expense Amounts

For purposes of the 2020 Update study the expense amounts were updated with actuals for 2020. The combined impact updating the amounts to those of the current study is a decrease in working capital percentage of .04%.

1 **CAPITALIZATION POLICY**

2

3 This schedule addresses s. 2.2.9 of the OEB’s Filing Requirements for Electricity Distribution
4 Rate Applications (December 15, 2022) (“Filing Requirements”), which requires an applicant
5 to file a copy of its capitalization policy and identify any changes to its capitalization policy
6 since filing the last rebasing application.

7

8 **1. BACKGROUND**

9 Consistent with the OEB’s expectations, Toronto Hydro converted to International Financial
10 Reporting Standards (“IFRS”) effective January 1, 2015. This application represents Toronto
11 Hydro’s third rebasing application under Modified IFRS (“MIFRS”). Toronto Hydro confirms
12 that, for purposes of calculating the 2025-2029 rate base (Exhibit 2A, Tab 1, Schedule 1), its
13 capitalization practices conform to MIFRS.

14

15 **2. CAPITALIZATION POLICY**

16 A copy of the utility’s current capitalization policy is filed in Appendix A to this schedule.

17

18 **3. CHANGES TO CAPITALIZATION POLICY**

19 Since the 2020-2024 Rate Application (EB-2018-0165), Toronto Hydro made a number of
20 changes to its IFRS-compliant capitalization policy to simplify aspects of the policy regarding
21 thresholds for capitalization, reflect updated accounting pronouncements, revise frequency
22 of review and reflect updated titles of responsible persons. The paragraphs that follow
23 summarize these changes.

1 Toronto Hydro simplified section 7.1, which sets out the detailed minimum threshold dollar
2 amount for capitalization, by removing Appendix A to the policy and inserting the following
3 paragraph to identify the minimum threshold amount:

4 “Once it has been established that an expenditure has the characteristics of a
5 capital asset, for practical purposes, only those expenditures equal to or
6 exceeding \$1,000 will be recorded as a capital asset. Expenditures below
7 \$1,000 will be recorded as an expense. Note that for expenditures related to
8 “major” projects, such as overhauls, major renovations, etc., it may not be
9 appropriate to look at monetary threshold amounts on an itemized basis (i.e.
10 per project, per expenditure/item). For those instances, the expenditure will
11 be reviewed on a case by case basis in order to assess the appropriate
12 accounting treatment.”

13
14 Further, in section 7.1, Toronto Hydro refined to the definition of PP&E from “used” to “held
15 for use” and the definition of intangible assets to include “identifiable non-monetary assets
16 without physical substance.”

17
18 Section 7.2 discusses subsequent recognition for capitalization versus expensing. In this
19 section, Toronto Hydro clarified that where subsequent costs have attributes of both
20 enhancement and maintenance, only the enhancement portion is capitalized.

21
22 In section 8, the utility made the following changes:

- 23 • Expanded the definition of capital asset cost to include “cash or cash equivalents paid
24 or the fair value of the other consideration given to acquire, construct, or develop a
25 capital asset.”
- 26 • Provided more specificity in the definition of costs as follows:

- 1 i. “Purchase price, including imported duties and non-refundable purchase
2 taxes, after deducting trade discounts and rebates (IAS 16, para 16(a)).”
- 3 ii. “Initial estimate of costs of dismantling and removing the item and restoring
4 the site on which it is located, the obligation for which an entity incurs either
5 when the item is acquired or as a consequence of having used the item during
6 a particular period for purposes other than to produce inventories during that
7 period (IAS 16, para 16(c)).”
- 8 • Within section 8.1:
- 9 i. Replaced the term “purchased” capital assets with “acquired” capital assets,
10 and specified “handling costs” within the costs of acquiring assets (8.1.1)
- 11 ii. Specified “site preparation” amount within the costs directly attributable to
12 self-constructed electrical plant (8.1.2).
- 13 iii. Elaborated further on the definition of the software development research
14 activities, which cannot be capitalized (8.1.3).
- 15 iv. For cloud computing arrangements in 8.1.4, expanded references to IAS 38,
16 and added Appendix C: Decision Tree-Implementation costs for a service
17 contract of cloud computing arrangements, for additional guidance regarding
18 the treatment of cloud computing arrangements.
- 19 • Within section 8.3:
- 20 i. Simplified the definition of employee types used in the calculation of
21 standard labour rate, to include all employee groups: inside workers and
22 outside workers.
- 23 ii. For On-cost, replaced the term “responsibility” centers with “cost” centers
24 and the term “budgeted” expenses with “operating” expenses.

- 1 iii. Enhanced the definition of vehicle hire rate to specify all costs within the fleet
2 cost centre such as operating and maintenance costs, vehicle licensing costs,
3 insurance, fuel costs, depreciation, etc.
- 4 iv. Specified that total available hours consist of: a) total working days in a year
5 less b) leaves (as the vehicles are not operated when employees are on leaves
6 such as vacation and statutory holidays) as well as c) time not spent working
7 on specific operating or capital jobs (such as safety training, inclement
8 weather, etc.).

9

10 Toronto Hydro made various changes regarding the frequency of review and Designated
11 Responsible Persons (DRP).

- 12 • Sections 11.1 and 11.2 were amended to “every 3 years” instead of “annually”.
- 13 • Sections 11.3 was amended to change the DRP to “Director, Corporate Accounting
14 External Reporting” instead of “Manager, External Financial Reporting”.
- 15 • The title of “Manager, Capital Planning and Reporting” in section 11.4 has been
16 updated to “Senior Manager, Capital Planning and Reporting”. Additionally, in
17 section 11.4, the DRP to whom violations of the policy should be reported to has
18 been updated to “Director, Corporate Accounting & External Reporting and the
19 Executive Vice-President and Chief Financial Officer” instead of “Controller and the
20 Executive Vice-President and Chief Financial Officer.”
- 21 • The party responsible for communicating policy updates, per section 12, has been
22 updated to Director, Corporate Accounting & External Reporting. Section 13.4 has
23 been updated to state the “Director, Corporate Accounting & External Reporting” as
24 being responsible for tracking and collecting applicable data measuring compliance
25 and reporting upon the request of the Corporation’s General Counsel.

1 The appendices included in the policy changed as follow:

- 2 • Removed the previous Appendix A which listed the dollar thresholds for
3 capitalization, as this information is now contained in section 7.1.
- 4 • Modified the previous “Appendix B- Decision Tree- Classification of an Expenditure”
5 (which is now Appendix A) as follows:
 - 6 i. Expanded the term “provide future economic benefits” to “present potential
7 to produce future economic benefits.”
 - 8 ii. Expenses that do not meet the definition of PP&E or Intangible assets, but
9 will be consumed over time and an advance payment has been made to be
10 treated as a deferred asset and expensed over the term of the contract.
- 11 • Added Appendix C which provides a decision tree with regard to the implementation
12 costs for a service contract of cloud computing arrangements.



POLICY

CAPITALIZATION	<u>Policy Owner:</u> Executive Vice-President and Chief Financial Officer
	<u>Policy Approver:</u> Policy Administration Steering Committee
	<u>Version Approval Date:</u> V9.0 2023-10-18
	<u>Last Review by PASC:</u> V9.0 2023-10-18
The most recent version of this policy can be obtained from https://pluggedin.torontohydro.com/policy/Pages/allpolicies.aspx	
The distribution of this policy is not restricted.	

 Anthony Haines
 President and CEO, Toronto Hydro Corporation

October 24, 2023

 Date

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1 DOCUMENT REVIEW & REVISION HISTORY

This policy is reviewed every three years.

Version Number	Date of Review	Reviewed By	Brief Description of Change
V1.0	2008-06-27	PASC	V1.0 approved by PASC
V2.0	2010-07-29	PASC	V2.0 approved by PASC
V3.0	2011-06-30	PASC	V3.0 approved by PASC
V4.0	2013-09-24	PASC	V4.0 approved by PASC
V5.0	2015-12-14	PASC	Reflect accounting policies in accordance with IFRS, revisions to policy administration and responsibilities, addition of compliance monitoring
V6.0	2017-10-16	PASC	Added clarifying guidance including additional intangible asset treatment, updated roles and responsibilities, added OEB AP Handbook related excerpts and other minor wording changes
V7.0	2018-10-22	PASC	Update Section 11 – Policy Administration Ownership, Approval and Responsibilities
V8.0	2020-10-15	PASC	Added clarifying guidance for cloud arrangements, simplified specific minimum threshold guidance with general \$1,000 minimum threshold, title updates and minor wording changes
V9.0	2023-10-18	PASC	Including additional definitions and examples from relevant IFRS, added clarifying guidance for implementation costs for a service contract of cloud computing arrangements, update on application of burdens, title updates and minor wording changes and change to policy review of every 3 years

2 DISTRIBUTION HISTORY

Version Number	Date of Issue	Recipients
V1.0	2008-06-27	Toronto Hydro @ Home Employee Extranet
V2.0	2010-08-30	Toronto Hydro @ Home Employee Extranet
V3.0	2011-09-16	http://pluggedin.torontohydro.com/policy/Pages/FinancePolicies.aspx
V4.0	2013-09-30	http://pluggedin.torontohydro.com/policy/Pages/FinancePolicies.aspx
V5.0	2015-12-14	http://pluggedin.torontohydro.com/policy/Pages/FinancePolicies.aspx
V6.0	2017-10-16	http://pluggedin.torontohydro.com/policy/Pages/FinancePolicies.aspx
V7.0	2018-10-22	http://pluggedin.torontohydro.com/policy/Pages/FinancePolicies.aspx
V8.0	2020-10-15	https://pluggedin.torontohydro.com/policy/Pages/allpolicies.aspx
V9.0	2023-10-18	https://pluggedin.torontohydro.com/policy/Pages/allpolicies.aspx

3 POLICY OVERVIEW

This document describes the accounting policy and specific criteria used to determine the appropriate classification of expenditures, in particular, whether expenditures should be capitalized on the balance sheet (capital assets) or expensed to operations in the period incurred (expense), and the conditions for derecognition.

The purpose of recording expenditures as capital assets is to provide for an equitable allocation of costs among current and future periods. As capital assets are expected to provide future economic benefits for more than a year, expenditures incurred for the acquisition, construction or development of capital assets should be capitalized and allocated over the estimated useful lives¹ of the associated capital assets in the form of amortization/depreciation expense. All other expenditures should be expensed in the accounting period incurred.

4 DEFINITIONS AND ABBREVIATIONS

<u>TERM or ACRONYM</u>	<u>DESCRIPTION</u>
AP Handbook	Accounting Procedures Handbook for Electricity Distributors issued by the OEB
Borrowing Costs	Interest and other costs incurred in connection with the borrowing of funds
CWIP	Construction Work In Progress
Corporation	Toronto Hydro Corporation and its subsidiaries
IFRS	International Financial Reporting Standards
ISA	In-Service Additions
Qualifying asset	An asset that necessarily takes a substantial period of time to get ready for its intended use
OEB	Ontario Energy Board

¹ Estimates of useful life are reviewed annually and whenever events or changes in circumstances indicate that the current estimates or depreciation method are no longer appropriate. Changes in estimates are accounted for on a prospective basis.

TERM or ACRONYM	DESCRIPTION
On-cost	Materials handling costs
PASC	Policy Administration Steering Committee
PP&E	Property, Plant and Equipment
SLR	Standard Labour Rate
VHR	Vehicle Hire Rate

5 SCOPE

- 5.1** This policy applies to the capitalization of assets by the Corporation.
- 5.2** This policy is designed to augment other corporate policies and is not intended to replace or preclude them. Should an overlap arise between the application of this policy and any other policy, the policy most specific to the situation will apply.

6 OBJECTIVE

- 6.1** To ensure proper classification of the Corporation's expenditures in accordance with IFRS and the regulatory reporting standards included in the AP Handbook.

7 CRITERIA FOR CAPITALIZATION

7.1 Initial Recognition – Capitalization versus Expensing

Expenditures will be capitalized only if:

- i) It is probable that future economic benefits will flow to the entity; and
- ii) The cost can be measured reliably.

Capital assets comprise of PP&E and intangible assets, and are expected to be used for more than one year. PP&E consists typically of long-lived tangible assets held for use in the production or supply of goods or services, for rental to others, or for administrative purposes, such as distribution assets, equipment, land and buildings. Intangible assets are identifiable non-monetary assets without physical substance, such as computer software and capital contributions paid.

For additional guidance, **Appendix A: Decision Tree – Classification of an expenditure** illustrates the criteria that must be met in order for expenditures to be capitalized. Expenditures not meeting the criteria will be expensed in the period incurred. Additionally, **Appendix B: Capital asset and repair and maintenance expense definitions** includes excerpts from the OEB AP Handbook outlining capital asset and expense account definitions. A review of these definitions provides practical references and examples to assist in the classification of various expenditures.

For complex transactions, when capital/operating decisions may be ambiguous and/or estimates of useful lives are not known, the Business Units should consult with the Finance group.

Once it has been established that an expenditure has the characteristics of a capital asset, for practical purposes, only those expenditures equal to or exceeding \$1,000 will be recorded as a capital asset. Expenditures below \$1,000 will be recorded as an expense. Note that for expenditures related to "major" projects, such as overhauls, major renovations, etc., it may not be appropriate to look at monetary threshold amounts on an

itemized basis (i.e. per project, per expenditure/item). For those instances, the expenditure will be reviewed on a case by case basis in order to assess the appropriate accounting treatment.

7.2 Subsequent recognition - Capitalization versus Expensing

When expenditures are incurred relating to existing capital assets, they should be evaluated against the recognition criteria (i.e., it is probable that future economic benefits will flow to the entity and the cost can be measured reliably). Subsequent costs should be capitalized only if they meet the recognition criteria. Otherwise, costs should be expensed.

Costs to be capitalized are costs incurred to enhance the service potential of an existing capital asset. The service potential of an existing capital asset may be enhanced when:

- i) there is an increase in the previously assessed physical output or service capacity;
- ii) associated operating costs are lowered;
- iii) the life or useful life is extended; or
- iv) the quality of output is improved.

Costs to be expensed are costs incurred in the maintenance of the service potential of a capital asset. Frequently referred to as repair and maintenance expenses, they are costs incurred more or less on a continuous basis to keep the capital asset in normal operating condition, but do not improve the value of the asset, nor prolong its life appreciably. They are the result of an activity that encompasses actions of a detective, preventive, and/or monitoring nature. They are normally planned or scheduled. They can also be reactionary, in response to an unscheduled breakdown in service function.

If a cost has the attributes of both enhancement and maintenance of the service potential of a capital asset, the portion considered to be enhancement is capitalized.

For those instances when professional judgement has to be exercised to determine the proper classification of the Corporation's expenditures, the Business Units should confirm the classification with the Finance group.

8 ASSET COST

Capital asset cost is the amount of cash or cash equivalents paid or the fair value of the other consideration given to acquire, construct, or develop a capital asset, which includes:

- i. purchase price, including imported duties and non-refundable purchase taxes, after deducting trade discounts and rebates (IAS 16, para 16(a)).
- ii. any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management (IAS 16, para 16(b)).

The "directly attributable" criteria should not be interpreted as "directly attributable to an asset". It means "directly attributable to getting the asset ready to operate as intended". Further, the directly attributable costs for a self-constructed asset are determined using the same principles as those for an acquired asset.

- iii. the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs either when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period (IAS 16, para 16(c)).

8.1 Cost

8.1.1 For acquired capital assets, costs should include the purchase price and other acquisition costs, such as brokers' commissions, and all the costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management, such as: costs of employee benefits arising directly from the acquisition of the asset; installation costs, including architectural, design and engineering fees; legal fees; survey costs; site preparation costs; freight charges; handling costs; transportation insurance costs; duties; the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located; and testing and preparation charges.

8.1.2 For an electrical plant that is self-constructed, construction costs should include where applicable: the cost of directly attributable labour; materials and supplies; site preparation; transportation; work done by others for the utility; damages incurred in the construction work; privileges and permits; special machinery services; borrowing costs applied to construction work in progress; the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located; and such portion of directly attributable general engineering, salaries and expenses, insurance, taxes and other similar items as may be properly included in construction. The cost of abnormal amounts of wasted material, labour, or other resources incurred in self-constructing an asset is not included in the cost of the asset.

8.1.3 For information technology ("IT") projects related to computer software, costs should only include the expenditures incurred in the development phase of a project.

Software development involves two stages: [IAS 38.52]

- i) the research phase. Examples of activities are: [IAS 38.56]
 - a. activities aimed at obtaining new knowledge;
 - b. the search for, evaluation and final selection of, applications of research findings or other knowledge;
 - c. the search for alternatives for materials, devices, products, processes, systems or services; and
 - d. the formulation, design, evaluation and final selection of possible alternatives for new or improved materials, devices, products, processes, systems or services.
- ii) All costs incurred during this phase should be expensed as they are incurred.
- iii) the development phase. Examples of activities which might be incurred in this stage are design of chosen alternative, including software configuration and interfaces, coding, installation on computer hardware, and testing. Costs incurred during this phase should start being capitalized only after the IT group demonstrates all of the following:
 - a. the technical feasibility of completing the software so that it will be available for use;
 - b. the intention to complete the software and use it (i.e., commit resources for the project in the budget);
 - c. the ability to use the software;
 - d. how the software will generate probable future economic benefits (i.e., demonstrate the usefulness of the software);
 - e. the availability of adequate technical, financial and other resources to complete the development and to use the software (i.e., a business plan

- showing the technical, financial and other resources needed and how they will be secured);
- f. the ability to measure reliably the expenditure attributable to the software during its development (i.e., use of time sheets).

If the research phase of an internal project to create/modify a software cannot be distinguished from the development phase, the expenditure for that project should be treated as if it were incurred in the research phase only.

Capitalization should cease no later than when substantial testing is complete and the software is capable of operating in the manner intended by management, or when it is no longer probable that the computer software project will be completed and placed in service.

8.1.4 For cloud computing arrangements with third party service providers to use their software applications over the internet, the costs should be assessed against the general capitalization criteria based on IAS 38 set out in **Appendix A – Decision Tree – Classification of an expenditure**. The service provider hosts the hardware, software, servers, storage and other components to varying degrees in cloud-specific arrangements. These arrangements include but are not limited to infrastructure as a service, platform as a service and software as a service. As there is often no asset that the Corporation controls on its own premises in these types of arrangements, the capitalization criteria would need to be applied to the rights provided through the individual contractual arrangement with the third-party service provider. If the cloud arrangement only conveys the right to receive access to the software over the contract term, the arrangement is considered a service contract. If the definition of an asset is met, the Corporation should consider the nature of asset that has been acquired in order to determine the appropriate accounting treatment (e.g., prepaid, other asset, or intangible asset). Otherwise, the costs should be expensed as a service fee. As each arrangement may be unique, each individual contract should be assessed separately.

The accounting for implementation costs related to the cloud solution should also be assessed separately and would depend on whether the cloud solution is a software intangible asset or a service contract. When the underlying cloud computing arrangement itself is determined to be a service contract, its implementation costs are generally unlikely to be capitalizable as an intangible asset and should be assessed against the criteria based on IAS 38 set out in **Appendix C: Decision Tree – Implementation costs for a service contract of cloud computing arrangements**. Configuration costs generally relate to tailoring or configuring existing functionality in the cloud solution to meet the Corporation's specific requirements and are considered an operating expense. Customization differs in the fact that it generally involves actual modification to the software code to change or create additional functionalities for the Corporation that is typically performed by the service provider. If the customization is paid upfront, these costs can be recognized as a deferred asset and expensed over the period of the access to the software. In some limited cases, the Corporation incurs costs to develop a customized user interface which is housed on its premises in order to access the cloud solution. Any development costs related to the development of the user interface or other type of implementation costs should be assessed using the same criteria as the IT projects related to computer software above.

8.1.5 Other costs that are not costs of an item of PP&E or intangible asset:

- i) costs incurred while an item capable of operating in the manner intended by management has yet to be brought into use or is operated at less than full capacity;
- ii) initial operating losses, such as those incurred while demand for the item's output builds up;
- iii) costs of relocating or redeploying the item to a new location;

- iv) administration and other general overhead costs; and
- v) training costs.

8.2 Borrowing costs

Borrowing costs eligible for capitalization are determined by applying the weighted average cost of borrowing to the carrying amount of eligible CWIP during a period, including borrowing costs previously capitalized. Capitalization of borrowing costs will commence as soon as the expenditure on a qualifying asset is incurred and will cease when substantially all the activities necessary to prepare the qualifying asset for its intended use are complete.

8.3 Burdens

Four burden rates are specifically analyzed below with respect to the asset cost:

1. Time-sheeting of Indirect Labour

One of the methods of capitalizing labour costs is to allocate employee labour costs through the process of time-sheeting of indirect labour. Field crews are supported, supervised and guided by those employees whose personnel costs are included in indirect labour.

The process of capitalizing costs of indirect labour includes labour costing (i.e. time-sheeting) which differentiates the time spent between capital, operating, and “blended” activities (i.e. a mix of capital and operating), in order to appropriately allocate costs across projects based on identified cost drivers.

Once time-sheeted hours are applied to specific activities, the calculated cost will be allocated to capital expenditures, operating expenses, or a blend of both based on the nature of the activity. Costs identified as capital or costs that are designated as capital in nature within a blend activity will be mapped to CWIP, while costs identified as operating or costs that are designated as operating in nature within a blend activity will be mapped to operating expense.

2. Standard labour rate

Another method of capitalizing labour cost is to track direct labour costs for various employees and apply a SLR to time recorded to various jobs. The SLR is calculated for all employee groups who currently submit time-sheets for direct labour which includes both inside and outside workers.

The SLRs are calculated by dividing the total employee burden (i.e. employee’s total remuneration, including various types of benefits) by the total available hours (i.e. hours available for work during the course of the year on projects) for each SLR category. The total available hours consist of: a) the total working days in a year less b) leaves (such as vacation and statutory holidays) as well as c) time not spent working on a specific operating or capital jobs (such as safety training, inclement weather, etc.).

3. On-cost

An on-cost charge is applied to material issuances from the warehouse. Examples include transformers, poles, cables, etc. If the items issued from the warehouse are associated with capital projects, the on-cost charge is capitalized, whereas if the items

issued are associated with operating projects, the on-cost charge is expensed in the period in which it is incurred.

The on-cost charge associates the cost of warehousing and handling to the items themselves. The on-cost rate is calculated as the sum of operating expenses in the specific material handling cost centers divided by the dollar value of materials moving through the warehouse in a given year. This rate is then applied to the dollar value of all materials when issued to capital and operating projects. Some of the operating expenses within the material handling responsibility centers are not capitalizable, thus should not be included in the on-cost calculation. The disallowed costs include:

- Payroll related to administrative staff supporting the procurement and warehousing functions;
- Inventory and direct purchases of materials used in the warehouse for internal purposes – i.e. not used for capital projects;
- Utilities and communications related expenses;
- Office supplies used in procurement and warehousing;
- Employee expenses (i.e. reimbursed expenses for employee purchases); and
- Allocated IT charges related to telephone and computing equipment used by the procurement and warehousing departments.

4. Vehicle Hire Rate

Vehicles used in the construction of capital assets can be capitalized into the item of PP&E. This capitalization is applied to projects based on time-sheets for the use of each vehicle. A VHR is calculated for each vehicle class and applied to the hours time-sheeted to determine the amount capitalized to each project.

The VHR is calculated as the sum of operating expenses in the specific fleet cost centers divided by the total available hours (i.e. hours available for work during the course of the year on projects) for each VHR category. Fleet operating costs include vehicle operating and maintenance costs, vehicle licensing costs, insurance, fuel costs, depreciation, etc. Whereas, the total available hours consist of: a) the total working days in a year less b) leaves (as the vehicles are not operated when employees are on leaves such as vacation and statutory holidays) as well as c) time not spent working on a specific operating or capital jobs (such as safety training, inclement weather, etc.).

8.4 Decommissioning cost

The Corporation recognizes a liability, known as a decommissioning provision, for future removal and handling costs for contamination in distribution equipment and for the future environmental remediation of certain properties, as assessed on a case-by-case basis. A decommissioning provision shall be recognized when there is a present legal or constructive obligation as a result of a past event and it is probable that there will be a future economic outflow that can be reliably measured. The liability is measured at present value and an offsetting amount is added to the carrying amount of the related asset. This cost is depreciated over the useful life of the related asset. Changes to an existing decommissioning provision are added to or deducted from the cost of the related asset and depreciated prospectively over the remaining useful life of the asset.

9 IN-SERVICE ADDITIONS

- 9.1** Once it has been established that an expenditure is part of the cost of a capital asset, it is recorded as CWIP until the asset is capable of operating in the manner intended by management (i.e., the capital asset is energized or connected to the distribution system),

at which point it is recorded as an item of PP&E or intangible asset and depreciation/amortization begins.

10 DERECOGNITION

- 10.1** Derecognition occurs when an item of PP&E or intangible asset no longer generates future economic benefits or when the item is disposed of.
- 10.2** When an item of PP&E or intangible asset no longer generates future economic benefits, the loss arising from derecognition equals its carrying amount and is recorded in the period in which the item is derecognized as depreciation or amortization expense.
- 10.3** When an item of PP&E or intangible asset is disposed of, the gain or loss arising from derecognition equals the difference between the net disposal proceeds (if any) and its carrying amount and is recorded in the period in which the item is derecognized as a gain or loss on disposal.

11 POLICY ADMINISTRATION OWNERSHIP, APPROVAL AND RESPONSIBILITIES

Policy Owner

- 11.1** This policy is owned by the *Executive Vice-President and Chief Financial Officer*, who is responsible for:
- Ensuring that this policy is comprehensive, clear and current.
 - Approving any exceptions to this policy, as required.
 - Reviewing this policy every 3 years or as necessary.

Policy Approver

- 11.2** This policy is approved by the *Policy Administration Steering Committee*, which is responsible for:
- Considering the impact of this policy to the associated risk.
 - Approving this policy every 3 years or as necessary.

Designated Responsible Person

- 11.3** This policy is managed by the *Director, Corporate Accounting & External Reporting*, who is responsible for:
- Ensuring that this policy is in accordance with IFRS and OEB AP Handbook guidance.
 - Ensuring consistency between referenced appendices and this document.
 - Reviewing and updating this policy annually, as necessary, for changes in accounting standards, regulatory decisions, or processes impacting the capitalization of costs.
- 11.4** This policy is implemented by the *Senior Manager, Capital Planning and Reporting*, who is responsible for:
- Ensuring that this policy is communicated to all staff impacted.
 - Ensuring on-going compliance with this policy.
 - Immediately communicating any exceptions or violations of this policy to the *Director, Corporate Accounting & External Reporting* and the *Executive Vice-President and Chief Financial Officer*.

12 POLICY COMMUNICATION

<u>COMMUNICATION TRIGGER</u>	<u>TYPE OF COMMUNICATION</u>	<u>PARTY RESPONSIBLE FOR POLICY COMMUNICATION</u>	<u>AUDIENCE</u>	<u>ACKNOWLEDGEMENT</u>
Policy Update	E-Mail, Posted on Intranet	Director, Corporate Accounting & External Reporting	All affected employees	No
New Hire in Finance	Discussion, E-mail	Immediate Manager	New hire	No

13 POLICY COMPLIANCE AND VIOLATIONS

13.1 All of the Corporation's employees, officers and directors are required to comply with this policy.

13.2 Any employee who fails to comply with this policy could be subject to disciplinary action, up to and including dismissal.

13.3 Failure to comply with this policy could lead to a material misstatement of the Corporation's financial statements and other financial information and inaccurate submissions to regulatory agencies. This can result in legal, regulatory and reputational ramifications.

13.4 Compliance Monitoring

The Director, Corporate Accounting & External Reporting is responsible for tracking and collecting applicable data, measuring compliance and reporting in such format as may be required.

14 RELATED LAWS, REGULATIONS AND DOCUMENTATION

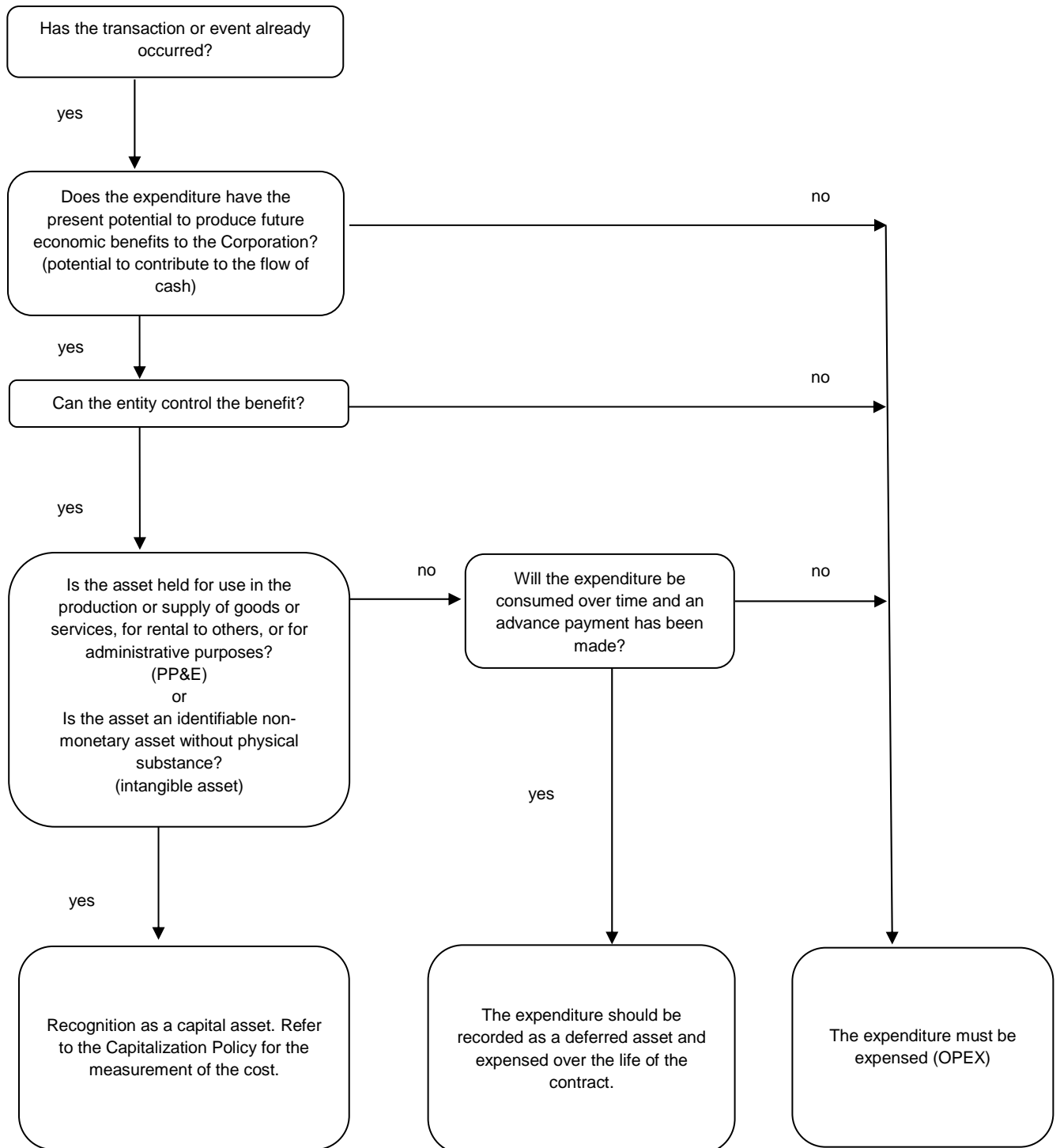
14.1 Refer to IAS 16 *Property, Plant and Equipment* and IAS 38 *Intangible Assets* for additional definitions and accounting principles. These standards are available from the Finance group.

14.2 The following appendices were referenced in this policy:

- Appendix A: Decision Tree – Classification of an expenditure
- Appendix B: Capital asset and repair and maintenance expense definitions – Excerpts from the OEB AP Handbook
- Appendix C: Decision Tree – Implementation costs for a service contract of cloud computing arrangements

These appendices can be found on the Toronto Hydro Plugged In intranet site at <https://pluggedin.torontohydro.com/policy/Pages/allpolicies.aspx>.

CAPITALIZATION POLICY
APPENDIX A: DECISION TREE – CLASSIFICATION OF AN EXPENDITURE



CAPITALIZATION POLICY**APPENDIX B: CAPITAL ASSET AND REPAIR AND MAINTENANCE EXPENSE DEFINITIONS
– EXCERPT FROM OEB AP HANDBOOK (Issued: December 2011; Effective: January 1,
2012; Updates issued in March 2015 for new accounts)
(APPLICABLE TO THESL)**

This appendix is governed by the Capitalization Policy.

**Article 220 – Uniform System of Accounts
Electric Plant in Service - Detailed Accounts
D. Distribution Plant**

1805 Land

This account shall include the cost of land used in connection with power distribution. (See Article 230, Definitions and Instructions No. 8 for detail guidance).

Note: Do not include in this account the cost of permits to erect poles, towers, etc., or to trim trees. See Account 1830, Poles, Towers and Fixtures, and Account 1835, Overhead Conductors and Devices.

1808 Buildings and Fixtures

This account shall include the cost in place of buildings and fixtures used in connection with distribution operations. (See Article 230 *Definitions and Instructions* No. 9.)

1810 Leasehold Improvements

This account shall include the cost of additions, improvements or alterations made to premises the utility leases from others. The cost of the leasehold improvements shall be amortized over the term of the lease or the service life of the improvement, whichever is shorter. Renewal provisions in the lease agreement shall be disregarded in amortizing leasehold improvements.

This account shall be subdivided into as many classifications as are required.

1815 Transformer Station Equipment - Normally Primary Above 50 kV

This account shall include the installed cost of transforming and switching equipment used for the purpose of stepping down from transmission voltages to subtransmission voltages and/or distribution voltages.

The account shall include all equipment used in the above operation from the high voltage feeder through to the delivery point outside the station or the connections within the confines of the station area. Included in the cost shall be all transformer equipment, control equipment, switching equipment, station metering equipment and the compartments or cubicles used to house such equipment, as well as general equipment such as cranes, hoists, test equipment, motors and the like. Moveable mountings or settings specially constructed for the particular equipment mounted therein shall also be included.

The detail of separate stations shall be entered in such a manner that an accurate record of their age, cost, location, and voltage characteristics will be evident.

1820 Distribution Station Equipment - Normally Primary Below 50 kV

This account shall include the installed cost of transforming and switching equipment used for the purpose of stepping down to distribution voltages.

The account shall include all equipment used in the above operation from the high voltage feeder through to the low voltage connection outside the station within the confines of the station area. Included in the cost shall be all transformer equipment, control equipment, switching equipment, station metering equipment and the compartments or cubicles used to house such equipment, as well as general equipment such as cranes, hoists, test equipment, motors and the like. Moveable mountings or settings specially constructed for the particular equipment mounted therein shall also be included.

The detail of separate stations shall be entered in such a manner that an accurate record of their age, cost, location, and voltage characteristics will be evident.

1825 Storage Battery Equipment

This account shall include the cost installed of storage battery equipment used for the purpose of supplying electricity to meet emergency or peak demands.

Example items:

- Batteries, including elements, tanks, tank insulators, etc
- Battery room connections, including cable or bus runs and connections
- Battery room flooring, when specially laid for supporting batteries
- Charging equipment, including motor generator sets and other charging equipment and connections, and cable runs from generator or station bus to battery room connections
- Miscellaneous equipment, including instruments, water stills, etc
- Switching equipment, including endcell switches and connections, boards and panels, used exclusively for battery control, not part of general station switchboard
- Ventilating equipment, including fans and motors, louvers, and ducts not part of building

Note: Storage batteries used for control and general station purposes shall not be included in this account but in the account appropriate for their use.

1830 Poles, Towers, and Fixtures

This account shall include the cost installed of poles, towers, and appurtenant fixtures used for supporting overhead distribution conductors and service wires.

Example items:

- Anchors, head arm, and other guys, including guy guards, guy clamps, strain insulators, pole plates, etc
- Brackets
- Crossarms and braces
- Excavation and backfill, including disposal of excess excavated material
- Extension arms
- Foundations
- Guards
- Insulator pins and suspension bolts
- Paving
- Permits for construction
- Pole steps and ladders
- Poles, wood, steel, concrete, or other material
- Racks complete with insulators
- Railings
- Reinforcing and stubbing
- Settings
- Shaving, painting, gaining, roofing, stenciling, and tagging

- Towers
- Transformer racks and platforms

Note: Sub-accounts should be used for sub-transmission Poles, Towers and Fixtures.

1835 Overhead Conductors and Devices

This account shall include the cost installed of overhead conductors and devices used for distribution purposes.

Example items:

- Circuit breakers
- Conductors, including insulated and bare wires and cables
- Ground wires, clamps, etc
- Insulators, including pin, suspension, and other types, and tie wire or clamps
- Lightning arresters
- Railroad and highway crossing guards
- Splices
- Switches
- Initial cost of tree trimming, including the cost of permits
- Other line devices

Note: The cost of conductors used solely for street lighting or signal systems shall not be included in this account but in account 1875, Street Lighting and Signal Systems.

1840 Underground Conduit

This account shall include the cost installed of underground conduit and tunnels used for housing distribution cables or wires.

Example items:

- Conduit, concrete, brick and tile, including iron pipe, fiber pipe, Murray duct, and standpipe on pole or tower
- Excavation, including shoring, bracing, bridging, backfill, and disposal of excess excavated material
- Foundations and settings specially constructed for and not expected to outlast the apparatus for which constructed
- Lighting systems
- Manholes, concrete or brick, including iron or steel frames and covers, hatchways, gratings, ladders, cable racks and hangers, etc., permanently attached to manholes
- Municipal inspection
- Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks
- Permits
- Protection of street openings
- Removal and relocation of subsurface obstructions
- Sewer connections, including drains, traps, tide valves, check valves, etc.
- Sumps, including pumps
- Ventilating equipment

Note: The cost of underground conduit used solely for street lighting or signal systems shall be included in Account 1875, Street Lighting and Signal Systems.

1845 Underground Conductors and Devices

This account shall include the cost installed of underground conductors and devices used for distribution purposes.

Example items:

- Armored conductors, buried, including insulators, insulating materials, splices, potheads, trenching, etc
- Armored conductors, submarine, including insulators, insulating materials, splices in terminal chamber, potheads, etc
- Cables in standpipe, including pothead and connection from terminal chamber or manhole to insulators on pole
- Circuit breakers
- Fireproofing, in connection with any items listed herein
- Hollow core oil filled cable, including straight or stop joints, pressure tanks, auxiliary air tanks, feeding tanks, terminals, potheads and connections, etc
- Lead and fabric covered conductors, including insulators, compound filled, oil filled or vacuum splices, potheads, etc
- Lightning arresters
- Municipal inspection and Permits
- Protection of street openings
- Racking of cables
- Switches
- Other line devices

Note: The cost of underground conductors and devices used solely for street lighting or signal systems shall be included in Account 1875, Street Lighting and Signal Systems.

1850 Line Transformers

A. This account shall include the cost installed of overhead and underground distribution line transformers and poletype and underground voltage regulators owned by the utility, for use in transforming electricity to the voltage at which it is to be used by the customer, whether actually in service or held in reserve.

B. The records covering line transformers shall be so kept that the utility can furnish the number of transformers of various capacities in service and those in reserve by:

- a) type (underground or overhead);
- b) capacity;
- c) function.

Example items:

- Transformers
- Transformer cutouts
- Grounding equipment
- Other material and labour necessary for installation (first installation only)
- Transformer lightning arresters
- Transformers, line and network
- Capacitors
- Network protectors

Note: The cost of removing and resetting line transformers shall not be charged to this account but to Account 5035, Overhead Distribution Transformers - Operations or Accounts 5055, Underground Distribution Transformers - Operations. The cost of line transformers used solely for street lighting or signal systems shall be included in Account 1875, Street Lighting and Signal Systems.

1855 Services

This account shall include the cost installed of overhead and underground conductors leading from a point where wires leave the last pole of the overhead system or the transformers or manhole, or the top of the pole of the distribution line, to the point of connection with the customer's electrical panel. Conduit used for underground service conductors shall be included herein.

Example items:

- Brackets
- Cables and wires
- Conduit
- Insulators
- Municipal inspection
- Overhead to underground, including conduit or standpipe and conductor from last splice on pole to connection with customer's wiring
- Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks
- Permits
- Protection of street openings
- Service switch
- Suspension wire

Records shall be maintained providing information on underground and overhead services separately and by capacity and function.

1860 Meters

A. This account shall include the cost installed of meters or devices and appurtenances thereto, for use in measuring the electricity delivered to its users, whether actually in service or held in reserve.

B. The records covering meters shall be so kept that the utility can furnish information as to the number of meters of various capacities in service and in reserve by:

- a) type (underground or overhead);
- b) capacity;
- c) function.

Example items:

- Labour and expense of first installation
- Inspection fees
- Alternating current, watt hour meters
- Current limiting devices
- Demand indicators
- Demand meters
- Direct current watt hour meters
- Graphic demand meters
- Instrument transformers
- Maximum demand meters
- Meter badges and their attachments
- Meter boards and boxes
- Meter fittings, connections, and shelves (first set)
- Meter switches and cutouts
- Prepayment meters
- Protective devices
- Testing new meters
- Interval Meters

- Smart Meters

Note A: This account shall not include meters for recording output of a generating station, substation meters, etc. Generation station high voltage meters shall be recorded in Account 1815, Transformer Station Equipment - Normally Primary Above 50 kV and substation meters shall be recorded in Account 1820, Distribution Station Equipment - Normally Primary Below 50 kV.

Note B: Generation related meter costs for renewable energy standard offer program, Feed-in Tariff ("FIT") and microFIT generation activities shall be recorded in a separate sub-account by meter type under this account. The revenues collected for the recovery of the generator connection costs including the meter costs shall be treated as capital contributions and recorded in Account 2440, Deferred Revenues. The meter cost is offset by the capital contribution (recorded in Account 2440, Deferred Revenues) and the depreciation expense is offset by the amortized deferred revenue (recorded in Account 4245, Government and Other Assistance Directly Credited to Income) in profit or loss. (See Article 430 *Contributions in Aid of Construction*.)

Note C: The cost of removing and resetting meters shall be charged to Account 5065, Meter Expenses.

1865 Other Installations on Customer Premises

This account shall include the cost installed of equipment on the customer's side of a meter when the utility incurs such cost and when the utility retains title to and assumes full responsibility for maintenance and replacement of such property. This account shall not include expenses related to leased equipment (see Account 1870, Leased Property on Customer Premises).

Example items:

- Cable vaults
- Commercial lamp equipment
- Foundations and settings specially provided for equipment included herein
- Frequency changer sets
- Motor generator sets
- Motors
- Switchboard panels, high or low tension
- Wire and cable connections to incoming cables

Note A: Do not include in this account any costs incurred in connection with merchandising or contract work activities. (See Account 4330).

Note B: It is intended that only equipment used in furnishing special service or service of a character different from that normally supplied shall be included in this account.

Note C: Maintenance costs relating the items in this account are to be charged to Account 5195, Maintenance of Other Installations on Customer Premises.

1870 Leased Property on Customer Premises

This account shall include the cost of electric motors, transformers, and other equipment on customers' premises (including municipal corporations), leased or loaned to customers, but not including property held for sale.

Note A: The cost of setting and connecting such appliances or equipment on the premises of customers and the cost of resetting or removal shall not be charged to this account but to operating expenses, Account 5178, Customer Installations Expenses - Leased Property.

Note B: Do not include in this account any costs incurred in connection with merchandising. (See Account 4330).

1875 Street Lighting and Signal Systems

If street lighting and signal systems are authorized by the Board for ratemaking, this account shall include the cost installed of equipment used wholly for public street and highway lighting or traffic, fire alarm, police, and other signal systems.

Example items:

- Armored conductors, buried or submarine, including insulators, insulating materials, splices, trenching, etc
- Automatic control equipment
- Conductors, overhead or underground
- Lamps, incandescent, or other types, including glassware, suspension fixtures, brackets, etc
- Municipal inspection
- Ornamental lamp posts
- Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks
- Permits
- Posts and standards
- Protection of street openings
- Relays or time clocks
- Series contactors
- Switches
- Transformers, pole or underground

Article 220 - Uniform System of Accounts
Balance Sheet Accounts
Electric Plant in Service - Detailed Accounts
E. General Plant

1905 Land

This account shall include the cost of land used for utility purposes, the cost of which is not properly included in other land account. (See Article 230 *Definitions and Instructions* No. 8 for detail guidance.)

1908 Buildings and Fixtures

This account shall include the cost in place of buildings and fixtures used for utility purposes, the cost of which is not properly included in other Buildings and Fixtures accounts. (See Article 230 *Definitions and Instructions* No. 9.)

1910 Leasehold Improvements

This account shall include the cost of additions, improvements or alterations made to premises the utility leases from others. The cost of the leasehold improvements shall be amortized over the term of the lease or the service life of the improvement, whichever is shorter. Renewal provisions in the lease agreement shall be disregarded in amortizing leasehold improvements.

This account shall be subdivided into as many classifications as are required.

1915 Office Furniture and Equipment

This account shall include the cost of the general office furniture and equipment. Articles of low value and/or relatively short life should be charged to the appropriate operating account when purchased.

The account shall be maintained in such a manner as to provide the cost of each piece of equipment, and be subdivided into as many classifications as are required.

1920 Computer Equipment - Hardware

This account shall include the costs of acquiring computer hardware. Hardware includes all physical equipment associated with input, processing, storage and output functions, also word processing equipment.

This account shall be subdivided as considered necessary.

1930 Transportation Equipment

These accounts shall include the cost of automobiles, small trucks, truck chassis, special truck bodies, aerial ladders, trailers and other mobile equipment.

These accounts shall be subdivided into the following:

- Automobiles
- Trucks - Under 3 tons
- Trucks - 3 tons and over.

The accounts shall be maintained in such a manner as to provide the cost of each piece of equipment.

Note: Work and service equipment is to be included in Account 1950, Power Operated Equipment.

1935 Stores Equipment

This account shall include the cost of equipment used for the receiving, shipping, handling, and storage of materials and supplies.

Example items:

- Chain falls
- Counters
- Cranes (portable)
- Elevating and stacking equipment (portable)
- Hoists
- Lockers
- Scales
- Shelving
- Storage bins
- Trucks, hand and power driven
- Wheelbarrows

1940 Tools, Shop and Garage Equipment

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or included in other accounts.

Example items:

- Air compressors
- Anvils
- Automobile repair shop equipment
- Battery charging equipment
- Belts, shafts and countershafts
- Boilers
- Cable pulling equipment
- Concrete mixers
- Drill presses
- Derricks
- Electric equipment
- Engines
- Forges
- Furnaces
- Foundations and settings specially constructed
- Gas producers
- Greasing tools and equipment
- Hoists
- Ladders
- Lathes
- Machine tools
- Motor-driven tools
- Pneumatic tools
- Pumps
- Riveters
- Smithing equipment
- Tool racks
- Vises
- Welding apparatus
- Work benches
- Line belt and harness for line crews

- Chain saws

1945 Measurement and Testing Equipment

This account shall include the cost installed of laboratory equipment used for general laboratory purposes and not specifically provided for or included in other departmental or functional plant accounts.

Example items:

- Ammeters
- Current batteries
- Frequency changers
- Galvanometers
- Inductometers
- Laboratory standard millivolt meters and volt meters
- Meter testing equipment
- Millivolt meters
- Motor generator sets
- Panels
- Phantom loads
- Portable graphic ammeters, voltmeters, and wattmeters
- Portable loading devices
- Potential batteries
- Potentiometers
- Rotating standards
- Standard cell, reactance, resistor, and shunt
- Switchboards
- Synchronous timers
- Testing panels
- Testing resistors
- Transformers
- Voltmeters
- Other testing, laboratory, or research equipment not provided for elsewhere
- Telescopic guns

1950 Power Operated Equipment

This account shall include the cost of power operated equipment used in construction, repair and service work exclusive of equipment included in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted.

Example items:

- Air compressors, including driving unit and vehicle
- Backhoe machines
- Boring machines
- Bulldozers
- Cranes and hoists
- Pipe cleaning machines
- Pipe coating or wrapping machines
- Tractors Crawler type
- Trenchers
- Other power operated equipment

Note: It is intended that this account include only such large units as are generally self-propelled or mounted on movable equipment.

1955 Communication Equipment

This account shall include the cost installed of telephone and wireless equipment for general use in connection with utility operations.

1960 Miscellaneous Equipment

This account shall include the cost of equipment, apparatus, etc., used in the utility operations, which is not included in any other account of this Uniform System of Accounts.

Example items:

- Kitchen equipment
- Employees' recreation equipment
- Operators' cottage furnishings
- Other miscellaneous equipment

Note: Miscellaneous equipment of the nature indicated above wherever practicable shall be included in the utility plant accounts on a functional basis.

1970 Load Management Controls - Customer Premises

This account shall include the cost of control equipment on customer premises in connection with the remote control of water heaters, and other customer equipment.

1975 Load-Management Controls - Utility Premises

This account shall include the cost of all control devices situated on utility premises, used for the purpose of controlling equipment in Account 1970 above.

1980 System Supervisory Equipment

This account shall include the costs of all control equipment used for the purposes of remote operation and control of utility transformer stations and distribution equipment.

1985 Sentinel Lighting Rental Units

These accounts shall include the installed cost of all Sentinel Lighting Rental Units. The accounts shall be subdivided into as many classifications as are required.

1990 Other Tangible Property

This account shall include the cost of tangible utility plant not provided for elsewhere.

1995 Contributions and Grants - Credit

Effective until December 31, 2011, (or date of IFRS adoption, if early adoption was elected) this account shall include amounts relating to contributions or grants in cash, services or property from governments or government agencies, corporations, individuals and others received in aid of construction or for acquisition of fixed assets.

This account shall be maintained so that the company can supply information as to the purpose of each contribution or grant, the conditions, if any, on which it was made, the amount of contributions or grants from governments or government agencies, corporations, individuals and others and the amount applicable to each Electric Plant in Service detail Account (i.e. Accounts 1606 to 1990).

Note A: Effective on January 1, 2012, (or date of IFRS adoption, if early adoption was elected) customer contributors will be recorded in Account 2440, Deferred Revenues.

Note B: Effective on the date of IFRS adoption on January 1, 2012, (or date of IFRS adoption, if early adoption was elected by the utility), the balance in this account should be adjusted to zero in accordance with the guidance in Article 510 *Transitional Issues Relating to the Adoption of IFRS*.

Note C: After the adoption of IFRS, the utility shall continue to maintain detail records as evidence in support of the amounts recorded in this account as at December 31, 2011 (or date of IFRS adoption, if early adoption was elected) relating to contributions or grants in cash, services or property from governments or government agencies, corporations, individuals and others received in aid of construction or for acquisition of fixed assets.

Article 220 - Uniform System of Accounts
Balance Sheet Accounts
Electric Plant in Service - Detailed Accounts
Other Capital Assets

2005 Property Under Finance Leases

A. This account shall include the amount recorded under finance leases for plant leased from others and used by the utility in its utility operations.

B. The electric property included in this account shall be classified separately according to the detailed Accounts (1606 to 1990) prescribed for Electric Plant in Service.

C. Records shall be maintained with respect to each finance lease reflecting: (1) name of lessor, (2) basic details of lease, (3) termination date, (4) original cost or fair market value of property leased, (5) future minimum lease payments, (6) executory costs, (7) present value of minimum lease payments, (8) the amount representing interest and the interest rate used, and (9) expenses paid.

Note: The related obligations shall be recorded in Account 2285, Obligations Under Finance Leases - Current and Account 2325, Obligations Under Finance Leases - Non-current.

2010 Electric Plant Purchased or Sold

A. This account shall be charged with the cost of electric plant acquired as an operating unit or system by purchase, merger, consolidation liquidation, or otherwise, and shall be credited with the selling price of like property transferred to others pending the distribution to appropriate accounts in accordance with Article 230 *Definitions and Instructions* No. 7.

B. Within six months from the date of acquisition or sale of property recorded herein, the utility shall file with the Board the proposed journal entries to clear from this account the amounts recorded herein.

2020 Experimental Electric Plant Unclassified

A. This account shall include the cost of electric plant which was constructed as a development plant under the provisions of paragraph C, Account 2055, Construction Work in Progress Electric, and due to the nature of the plant it is desirable to operate it for a period of time in an experimental status.

B. Amounts in this account shall be transferred to Electric Plant in Service Accounts 1606 to 1990, or Account 2075, Non Rate-Regulated Utility Property Owned or Under Finance Leases, as appropriate when the project is no longer considered as experimental.

C. The amortization of property in this account shall be charged to Account 5705, Amortization Expense, and credited to Account 2105, Accumulated Depreciation of Electric Utility Plant. The amounts herein shall be amortized over a period which would correspond to the estimated useful life of the relevant project considering the characteristics involved. However, when projects are transferred to relevant Electric Plant in Service accounts, the projects shall be reviewed and a new depreciation rate based on the revised service life and unamortized amounts will be established as required.

D. Records shall be maintained with respect to each unit of experiment so that full details may be obtained as to the cost, depreciation and the experimental status.

E. Should it be determined that experimental plant recorded in this account will fail to satisfactorily perform its function, the costs thereof shall be accounted for as directed or authorized by the Board.

2030 Electric Plant and Equipment Leased to Others

A. This account shall include the original cost of electric plant and equipment owned by the utility, but leased to others as operating units or systems, where the lessee has exclusive possession.

B. The property included in this account shall be classified according to the detailed Accounts (1606 to 1990) prescribed for Electric Plant in Service and this account shall be maintained in such detail as though the property were used by the owner in its utility operations.

2040 Electric Plant Held For Future Use

A. This account shall include the original cost of electric plant (for land and land rights see B below) owned and held for future use in electric service under a definite plan for such use, to include: (1) Property acquired (for land and land rights see B below) but never used by the utility in electric service, but held for such service in the future under a definite plan, and (2) property (for land and land rights see B below) previously used by the utility in service, but retired from such service and held pending its reuse in the future, under a definite plan, in electric service.

B. This account shall also include the original cost of land and land rights owned and held for future use in electric service under a plan for such use, to include land and land rights: (1) Acquired but never used by the utility in electric service, but held for such service in the future under a plan, and (2) previously held by the utility in service, but retired from such service and held pending its reuse in the future under a plan, in electric service. See Article 230 *Definitions and Instructions* No. 8 for detailed guidance.

C. In the event that property recorded in this account shall no longer be needed or appropriate for future utility operations, the company shall request Board approval of journal entries to remove such property from this account when the gain realized from the sale or other disposition of the property is material, prior to their being recorded. Such filings shall include the description and original cost of individual properties removed from this account, the accounts charged upon removal, and any associated gains realized upon disposition of such property.

D. Gains or losses from the sale of land and land rights or other disposition of such property previously recorded in this account and not placed in utility service shall be recorded directly in Accounts 4345 or 4350, as appropriate, except when determined to be significant by the Board. Upon such a determination, the amounts shall be transferred to Account 2410, Deferred Gains from Disposition of Utility Plant, or Account 1530, Deferred Losses from Disposition of Utility Plant, and amortized to Accounts 4345, Gains from Disposition of Utility Plant, or 4350, Losses from Disposition of Utility Plant, as appropriate.

E. The property included in this account shall be classified according to the detail Accounts (1606 to 1990) prescribed for Electric Plant in Service and the account shall be maintained in such detail as though the property were in service.

Note: Materials and supplies, meters and transformers held in reserve, and normal spare capacity of plant in service shall not be included in this account.

2050 Completed Construction Not Classified—Electric

At the end of the year or such other date as a balance sheet may be required by the Board, this account shall include the total of the balances of work orders for electric plant which has been completed and placed in service but which work orders have not been classified for transfer to the detailed electric plant accounts.

Note: For the purpose of reporting to the Board the classification of Electric Plant in Service by Accounts (1606 to 1990), the utility shall also report the balance in this account tentatively classified as accurately as practicable according to prescribed account classifications. The purpose of this provision is to avoid any significant omissions in reported amounts of Electric Plant in Service.

2055 Construction Work in Progress—Electric

A. This account shall include the total of the balances of work orders for electric plant in process of construction.

B. Work orders shall be cleared from this account as soon as practicable after completion of the job. Further, if a project, such as a hydroelectric project, a steam station or a transmission line, is designed to consist of two or more units or circuits which may be placed in service at different dates, any expenditures which are common to and which will be used in the operation of the project as a whole shall be included in Electric Plant in Service upon the completion and the readiness for service of the first unit. All expenditures which are identified exclusively with units of property not yet in service shall be included in this account.

C. Expenditures on development projects for construction of utility facilities are to be included in a separate subdivision in this account. Records must be maintained to show separately each project along with complete detail of the nature and purpose of the development project together with the related costs.

2060 Electric Plant Acquisition Adjustments

A. This account shall include the difference between (1) the cost to the accounting utility of electric plant acquired as an operating unit or system by purchase, merger, consolidation, liquidation, or otherwise, and (2) the original cost, estimated, if not known, of such property, less the amount or amounts credited by the accounting utility at the time of acquisition to accumulated provisions for amortization and contributions in aid of construction with respect to such property. The goodwill shall be recorded as a debit in this account and the credit is to Account 3030, Miscellaneous Paid-in Capital in the case of goodwill resulting from pushdown accounting by the parent to its subsidiary.

B. This account shall be subdivided so as to show the amounts included for each property acquisition and to Electric Plant in Service, Electric Plant Held for Future Use and Electric Plant Leased to Others. (See Article 230 *Definitions and Instructions* No. 7.)

C. Amounts recorded in this account related to an operating unit or system acquisition may be amortized to Account 5720, Amortization of Electric Plant Acquisition Adjustments, pursuant to an approval or order of the Board, over a period not longer than the estimated remaining life of the properties to which such amounts relate.

D. Amounts included in this account shall be disposed subject to Board approval.

Note: The provisions of this account shall not be construed as approving or authorizing the recording of appreciation of electric plant.

2065 Other Electric Plant Adjustments

A. This account shall include the difference between the original cost, estimated if not known, and the book cost of electric plant to the extent that such difference is not included in Account 2060, Electric Plant Acquisition Adjustments (See Article 230 *Definitions and Instructions* No. 7 under —"General classification of electric plant".)

B. Amounts included in this account shall be classified in such manner as to show the origin of each amount and shall be disposed of as the Board may approve or direct. Note: The provisions of this account shall not be construed as approving or authorizing the recording of appreciation of electric plant.

2070 Other Utility Plant

This account shall include the cost of land, structures, equipment and other tangible and intangible plant assets owned by the utility, but not used in its utility operations and not included in Accounts 2030, Electric Plant and Equipment Leased to Others, 2040, Electric Plant Held for Future Use, and 2055, Construction Work in Progress - Electric.

Non rate-regulated utility assets shall not be included in this account but in Account 2075.

2075 Non Rate-Regulated Utility Property Owned or Under Finance Leases

A. This account shall include the book cost of land, structures, equipment, or other tangible or intangible property owned by the utility or under a finance lease, but not used in utility service and not included in Account 2040, Electric Plant Held for Future Use.

B. This account shall also include the amount recorded under finance leases for property leased from others and used by the utility in its non rate-regulated utility operations. Records shall be maintained with respect to each lease reflecting: (1) name of lessor, (2) basic details of lease, (3) terminal date, (4) original cost or fair market value of property leased, (5) future minimum lease payments, (6) executory costs, (7) present value of minimum lessee payments, (8) the amount representing interest and the interest rate used, and (9) expenses paid.

C. This account shall be subdivided so as to show the amount of property used in operations which are non-utility in character but nevertheless constitute a distinct operating activity of the company and the amount of miscellaneous property not used in operations. The records in support of each sub-account shall be maintained so as to show an appropriate classification of the property.

Note A: The gain from the sale or other disposition of property included in this account which had been previously recorded in Account 2040, Electric Plant Held for Future Use, shall be accounted for in accordance with paragraph C of Account 2040.

Note B: The related obligations shall be recorded in Account 2285, Obligations Under Finance Leases - Current and Account 2325, Obligations Under Finance Leases - Non-current.

2075 Non Rate-Regulated Utility Property Owned or Under Finance Leases, Sub-account Generation Facility Assets

A. This account shall include the book cost of qualifying generation facilities or assets owned by the utility or under a finance lease, but not used in utility service and not included in Account 2040, Electric Plant Held for Future Use.

B. This account shall also include the amount recorded under finance leases for generation property leased from others and used by the utility in its non rate-regulated utility operations. Records shall be maintained with respect to each lease reflecting: (1) name of lessor, (2) basic details of lease, (3) terminal date, (4) original cost or fair market value of property leased, (5) future minimum lease payments, (6) executory costs, (7) present value of minimum lessee payments, (8) the amount representing interest and the interest rate used, and (9) expenses paid.

C. This account shall be subdivided so as to show the amount of property used in operations which are non-utility in character but nevertheless constitute a distinct operating activity of the company and the amount of miscellaneous property not used in operations. The records in support of each sub-account shall be maintained so as to show an appropriate classification of the generation property.

Article 220 - Uniform System of Accounts
Income Statement
Distribution Expenses - Operations

5005 Operation Supervision and Engineering

This account shall include the cost of labour and expenses incurred in the general supervision and direction of the operation of the distribution system. Direct supervision of specific activities, such as station operation, line operation, meter department operation, etc., shall be charged to the appropriate operations account in the 5000 series based on the nature of the activity in relation to the account descriptions . (See Article 230 *Definitions and Instructions* No. 4.)

5010 Load Dispatching

This account shall include the cost of labour, materials used and expenses incurred in load dispatching operations pertaining to the distribution of electricity.

Example items:

Labour:

- Directing switching
- Arranging and controlling clearances for construction, maintenance, test and emergency purposes
- Controlling system voltages
- Preparing operating reports
- Obtaining reports on the weather and special events

Expenses:

- Communication service provided for system control purposes
- System record and report forms
- Meals, traveling and incidental expenses
- SCADA equipment related expenses

5012 Station Buildings and Fixtures Expenses

This account shall include the cost of labour, materials used and expenses incurred in operating distribution station building and fixtures recorded in Account 1808 Buildings and Fixtures and Account 1810 Leasehold Improvements.

Example items:

Labour:

- Standing watch, guarding and patrolling station and station yard
- Sweeping, mopping and tidying station
- Care of grounds, including snow removal, cutting grass, etc

Station Supplies and Expenses:

- Taxes (e.g. property taxes), light, heat, telephone
- Building service expenses
- Tool expenses
- Transportation expenses
- Meals, traveling and incidental expenses

The accounts shall be sub-divided to show the cost of operating individual stations.

5014 Transformer Station Equipment - Operating Labour

These accounts shall include labour with payroll burden incurred in operating the transformer station equipment recorded in Account 1815. The accounts shall be subdivided to obtain the cost of operating individual stations. General supervision shall be recorded in Account 5005.

Example items:

- Supervision specific to transformer station equipment operation
- Adjusting station equipment where such adjustment primarily affects performance, such as regulating the flow of cooling water, adjusting current in fields of a machine or changing voltage of regulators, changing station transformer taps
- Inspecting, testing and calibrating station equipment for the purpose of checking its performance
- Keeping station log and records and preparing reports on station equipment operation
- Operating switching and other station equipment

5015 Transformer Station Equipment - Operating Supplies and Expenses

These accounts shall include the cost of material, trucking and other expenses incurred in operating the transformer station equipment recorded in Account 1815.

Example items:

- Operating supplies, such as lubricants, commutator brushes, water, and rubber goods
- Station meter and instrument supplies, such as ink and charts
- Station record and report forms
- Small hand tools
- Transportation expenses
- Meals, traveling, and incidental expenses

5016 Distribution Station Equipment - Operating Labour

These accounts shall include labour with payroll burden incurred in operating the transformer station equipment recorded in Account 1820. The accounts shall be subdivided to obtain the cost of operating individual stations. General supervision shall be recorded in Account 5005.

Example items:

- Supervision specific to transformer station equipment operation
- Adjusting station equipment where such adjustment primarily affects performance, such as regulating the flow of cooling water, adjusting current in fields of a machine or changing voltage of regulators, changing station transformer taps
- Inspecting, testing and calibrating station equipment for the purpose of checking its performance
- Keeping station log and records and preparing reports on station equipment operation
- Operating switching and other station equipment

Note: If the utility owns storage battery equipment used for supplying electricity to customers in periods of emergency, the cost of operating labour should be recorded in this account and the cost of supplies, such as acid, gloves, hydrometers, thermometers, soda, automatic cell fillers, acid proof shoes, etc., shall be included in Account 5017. If significant in amount, a separate subdivision in each account shall be maintained for such expenses.

5017 Distribution Station Equipment - Operating Supplies and Expenses

These accounts shall include the cost of material, trucking and other expenses incurred in operating the transformer station equipment recorded in Account 1820.

Example items:

- Operating supplies, such as lubricants, commutator brushes, water, and rubber goods
- Station meter and instrument supplies, such as ink and charts
- Station record and report forms
- Small hand tools
- Transportation expenses
- Meals, traveling, and incidental expenses

5020 Overhead Distribution Lines and Feeders - Operation Labour

This account shall include labour with payroll burden incurred in operating overhead lines from the low voltage connection in the distribution station to the customers' premises but not operating labour incurred in relation to customer premises (Account 5070).

Example items

- Supervision specific to line operation
- Changing line transformer taps
- Inspecting and testing lightning arresters, line circuit breakers, switches and grounds
- Inspecting and testing line transformers for the purpose of determining load, temperature or operating performance
- Patrolling lines
- Load tests and voltages surveys of feeders and circuits

5025 Overhead Distribution Lines and Feeders - Operation Supplies and Expenses

These accounts shall include the cost of material, trucking and other expenses incurred in operating overhead lines from the low voltage connection in the distribution station to the customer's premises but not operating supplies and expenses incurred in relation to customer premises (Account 5075).

Line Supplies and Expenses examples:

- Voltage surveys, either routine or upon request of customers, including voltage tests at customers' main switch
- Transferring loads, switching and reconnecting circuits and equipment for operation purposes
- Electrolysis surveys
- Inspecting and adjusting line testing equipment
- Tool expenses
- Transportation expenses
- Meals, traveling and incidental expense
- Operating supplies, such as instrument charts, rubber goods, etc

5030 Overhead Subtransmission Feeders - Operation

These accounts shall include labour with payroll burden, material, trucking and other expenses incurred in inspecting, patrolling and testing the overhead sub transmission feeder system.

5035 Overhead Distribution Transformers - Operation

This account shall include labour with payroll burden, material, trucking and other expenses incurred in removing and resetting overhead transformers and devices and also the inspection and testing while in service. The account shall be subdivided as necessary.

Note: The cost of the original setting shall be charged to Account 1850, Line Transformers.

5040 Underground Distribution Lines and Feeders - Operation Labour

These accounts shall include labour with payroll burden incurred in operating underground distribution lines from the low voltage connection in the municipal distribution station to the customers' premises but not operating labour incurred in relation to customer premises (Account 5070).

Line Labour examples:

- Supervision specific to line operation
- Changing line transformer taps
- Inspecting and testing lightning arresters, line circuit breakers, switches and grounds
- Inspecting and testing line transformers for the purpose of determining load, temperature or operating performance
- Patrolling lines
- Load tests and voltages surveys of feeders and circuits

5045 Underground Distribution Lines and Feeders - Operation Supplies and Expenses

These accounts shall include the cost of material, trucking and other expenses incurred in operating underground distribution lines from the low voltage connection in the municipal distribution station to the customers' premises but not operating supplies and expenses incurred in relation to customer premises (Account 5070).

Example items

- Voltage surveys, either routine or upon request of customers, including voltage tests at customers' main switch
- Transferring loads, switching and reconnecting circuits and equipment for operation purposes
- Electrolysis surveys
- Inspecting and adjusting line testing equipment
- Tool expenses
- Transportation expenses
- Meals, traveling and incidental expense
- Operating supplies, such as instrument charts, rubber goods, etc

5050 Underground Subtransmission Feeders - Operation

These accounts shall include labour with payroll burden, material, trucking and other expenses incurred in inspecting, patrolling and testing the underground subtransmission feeder system.

5055 Underground Distribution Transformers - Operation

This account shall include labour with payroll burden, material, trucking and other expenses incurred in removing and resetting underground transformers and devices and also the inspection and testing while in service. The account shall be subdivided as necessary.

Note: The cost of the original setting shall be charged to Account 1850, Line Transformers.

5060 Street Lighting and Signal System Expenses

This account shall include the cost of labour, materials used and expenses incurred in the operation of such plant owned by the utility, if authorized by the Board and where such work is done regularly as a part of the street lighting and signal system service.

Example items:

Labour:

- Supervision specific to street lighting and signal systems operation
- Replacing lamps and consequential cleaning of glassware and fixtures
- Routine patrolling for lamp outages, extraneous nuisances or encroachments, etc
- Testing lines and equipment including voltage and current measurement

- Winding and inspection of time switch and other controls

Materials and Expenses:

- Street lamp renewals
- Transportation and tool expense
- Meals, traveling, and incidental expenses

Note: Where the utility does not own the street lighting assets, the revenues and expenses from the provision or maintenance of street lighting services should be recorded in Account 4375, Revenues from Non-Utility Operations and 4380, Expenses from Non-Utility Operations, respectively.

5065 Meter Expenses

This account shall include the cost of labour, materials used and expenses incurred in the operation of customer meters and associated equipment.

Example items:

Labour:

- Supervision specific to meter operation
- Clerical work on meter history and associated equipment record cards, test cards, and reports
- Disconnecting and reconnecting, removing and reinstalling, sealing and unsealing meters and other metering equipment in connection with initiating or terminating services including the cost of obtaining meter readings, if incidental to such operation
- Consolidating meter installations due to elimination of separate meters for different rates of service
- Changing or relocating meters, instrument transformers, time switches, and other metering equipment
- Resetting time controls, checking operation of demand meters and other metering equipment, when done as an independent operation
- Inspecting and adjusting meter testing equipment
- Inspecting and testing meters, instrument transformers, time switches, and other metering equipment on premises or in shops excluding inspecting and testing incidental to maintenance
- Replacing or removing broken meters

Materials and Expenses:

- Meter seals and miscellaneous meter supplies
- Transportation expenses
- Meals, traveling, and incidental expenses
- Tool expenses
- Replacing or removing broken meters

Note: The cost of the first setting, including the government inspection fee, and testing of a meter is chargeable to utility plant Account 1860, Meters. The cost of removing and resetting for government inspection, including the fees, shall be a charge to this account.

5070 Customer Premises - Operating Labour

This account shall include labour with payroll burden related to providing service on assets on customers' premises which are included in Account 1855, Services.

Example items:

- Inspecting premises, including check of wiring for code compliance

- Investigating, locating, and clearing grounds on customers' wiring
- Investigating service complaints, including load tests of motors and lighting and power circuits on customers' premises; field investigations of complaints on bills or of voltage
- Radio, television and similar interference work including erection of new aerials on customers' premises and patrolling of lines, testing of lightning arresters, inspection of pole hardware, etc., and examination of customers' wiring to locate cause of interference
- Investigation of current diversion including setting and removal of check meters discovery and settlement of current diversion
- Changes in customer wiring and any other labour cost identifiable as caused by current diversion

Note A: Amounts billed customers for any work, the cost of which is charged to this account, shall be transferred to Account 4235, Miscellaneous Service Revenues.

Note B: Do not include in this account expenses incurred in connection with merchandising.

5075 Customer Premises - Materials and Expenses

This account shall include trucking, materials and other expenses related to providing services to assets on customers' premises which are included in Account 1855, Services.

Examples of services include inspection, voltages tests and the like related to labour examples listed in 5070, Customer Premises - Operating Labour.

Example items:

Materials and Expenses:

- Lamp and fuse renewals
- Materials used in the course of performing inspection, voltage tests, etc
- Tool expense
- Transportation expense, including pickup and delivery charges
- Meals, traveling and incidental expenses
- Rewards paid for discovery of current diversion

Note A: Amounts billed customers for any work, the cost of which is charged to this account, shall be transferred to Account 4235, Miscellaneous Service Revenues.

Note B: Do not include in this account expenses incurred in connection with merchandising and contract work.

5085 Miscellaneous Distribution Expenses

This account shall include the cost of labour, materials used and expenses incurred in distribution system operation not provided for elsewhere.

Example items:

Labour:

- General records of physical characteristics of lines and substations, such as capacities, etc
- Ground resistance records
- Joint pole maps and records
- Distribution system voltage and load records
- Preparing maps and prints
- Service interruption and trouble records

- General clerical and stenographic work except that chargeable to account 5065, Meter expenses

Material and Expenses:

- Operating records covering poles, transformers, manholes, cables, and other distribution facilities. Exclude meter records chargeable to Account 5065, Meter Expenses and station records chargeable to Account 5012, Station Building and Fixtures Expenses
- Janitorial work at distribution office buildings including snow removal, cutting grass, etc
- Communication service
- Building service expenses
- Miscellaneous office supplies and expenses, printing, and stationery, maps and records and first aid supplies
- Research, development, and demonstration expenses

5090 Underground Distribution Lines and Feeders - Rental Paid

This account shall include rents of property of others used, occupied, or operated in connection with the distribution system, including payments to the government authorities and others for the use and occupancy of public lands and reservations for underground distribution line rights of way. (See Article 230 *Definitions and Instructions* No. 5.) Records should permit identification of payments and parties to whom they were made.

5095 Overhead Distribution Lines and Feeders - Rental Paid

This account shall include rents of property of others used, occupied, or operated in connection with the distribution system, including payments to the government authorities and others for the use and occupancy of public lands and reservations for overhead distribution line rights of way. (See Article 230 *Definitions and Instructions* No. 5.) Records should permit identification of payments and parties to whom they were made.

5096 Other Rent

This account shall include rents for property of others used, occupied or operated in connection with the operation of the distribution system. Include rentals paid for railroad crossings, rights of ways, payments to government bodies and others for use of public or private land, etc., not otherwise included in Accounts 5090, Underground Distribution Lines and Feeders Rental Paid or 5095, Overhead Distribution Lines and Feeders - Rental Paid.

Article 220 - Uniform System of Accounts
Income Statement
Distribution Expenses - Maintenance

5105 Maintenance Supervision and Engineering

This account shall include the cost of labour and expenses incurred in the general supervision and direction of maintenance of the distribution system that cannot be directly allocated to any particular job/project. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account in the 5100 series based on the nature of the activity in relation to the account descriptions. (See Article 230 *Definitions and Instructions* No. 4.)

5110 Maintenance of Buildings and Fixtures - Distribution Stations

This account shall include the cost of labour, materials used and expenses incurred in maintenance of structures, the book cost of which is included in Account 1808, Buildings and Fixtures, and 1810, Leasehold Improvements.

5112 Maintenance of Transformer Station Equipment

This account shall include the cost of labour, materials used and expenses incurred in maintenance of plant, the book cost of which is included in Account 1815, Transformer Station Equipment - Normally Primary above 50kV.

5114 Maintenance of Distribution Station Equipment

This account shall include the cost of labour, materials used and expenses incurred in maintenance of plant, the book cost of which is included in Account 1820, Distribution Station Equipment - Normally Primary below 50kV, and Account 1825, Storage Battery Equipment.

Records should permit the identification of expenses relating to each type of equipment listed above.

5120 Maintenance of Poles, Towers and Fixtures

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of overhead distribution line facilities, the book cost of which is included in Account 1830, Poles, Towers and Fixtures.

Example items:

Work of the following character on poles, towers, and fixtures:

- Installing additional clamps or removing clamps or strain insulators on guys in place.
- Moving line or guy pole in relocation of pole or section of line.
- Painting poles, towers, cross arms, or pole extensions.
- Readjusting and changing position of guys or braces.
- Realigning and straightening poles, cross arms, braces, pins, racks, brackets, and other pole fixtures.
- Reconditioning reclaimed pole fixtures.
- Relocating crossarms, racks, brackets, and other fixtures on poles.
- Repairing pole supported platform.
- Repairs by others to jointly owned poles.
- Shaving, cutting rot, or treating poles or crossarms in use or salvaged for reuse.
- Stubbing poles already in service.
- Supporting conductors, transformers, and other fixtures and transferring them to new poles during pole replacements.
- Maintaining pole signs, stencils, tags, etc.

The accounts shall be subdivided to show costs for subtransmission feeders and distribution lines and feeders separately.

5125 Maintenance of Overhead Conductors and Devices

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of overhead distribution line facilities, the book cost of which is included in Account 1835, Overhead Conductors and Devices.

Example items:

Work of the following character on overhead conductors and devices:

- Overhauling and repairing line cutouts, line switches, line breakers, and capacitor installations
- Cleaning insulators and bushings
- Refusing line cutouts
- Repairing line oil circuit breakers and associated relays and control wiring. Repairing grounds
- Resagging, retying, or rearranging position or spacing of conductors
- Standing by phones, going to calls, cutting faulty lines clear or similar activities at times of emergency
- Sampling, testing, changing, purifying, and replenishing insulating oil
- Transferring loads, switching, and reconnecting circuits and equipment for maintenance purposes
- Repairing line testing equipment

The accounts shall be subdivided to show costs for subtransmission feeders and distribution lines and feeders separately.

5130 Maintenance of Overhead Services

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of overhead distribution line facilities, the book cost of which is included in Account 1855, Services.

Example items:

Work of the following character on overhead services:

- Moving position of service either on pole or on customers' premises
- Pulling slack in service wire
- Retying service wire
- Refastening or tightening service bracket

5135 Overhead Distribution Lines and Feeders - Right of Way

These accounts shall include labour with payroll burden, material, trucking, and other expenses incurred in connection with tree trimming, etc. and other costs incurred in maintaining right of way subsequent to construction of a line.

These accounts may be further subdivided as follows:

- Labour and Payroll Burden
- Material
- Truck Expense
- Other Expense

5145 Maintenance of Underground Conduit

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of underground distribution line facilities, the book cost of which is included in account 1840, Underground Conduit.

5150 Maintenance of Underground Conductors and Devices

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of underground distribution line facilities, the book cost of which is included in Account 1845, Underground Conductors and Devices.

Example items:

Work of the following character on underground conductors and devices:

- Repairing circuit breakers, switches, cutouts, network protectors, and associated relays and control wiring
- Repairing grounds
- Retraining and reconnecting cables in manholes including transfer of cables from one duct to another
- Repairing conductors and splices
- Repairing or moving junction boxes and potheads
- Refireproofing cables and repairing supports
- Repairing electrolysis preventive devices for cables
- Repairing cable bonding systems
- Sampling, testing, changing, purifying and replenishing insulating oil
- Transferring loads, switching and reconnecting circuits and equipment for maintenance purposes
- Repairing line testing equipment
- Repairing oil or gas equipment in high voltage cable systems and replacement of oil or gas

The accounts shall be subdivided to show costs for sub transmission feeders and distribution lines and feeders separately.

5155 Maintenance of Underground Services

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of underground distribution line facilities, the book cost of which is included in the underground portion of Account 1855, Services.

Example items:

Work of the following character on underground services:

- Cleaning ducts
- Repairing any underground service plant

5160 Maintenance of Line Transformers

This account shall include the cost of labour, materials used and expenses incurred in maintenance of distribution line transformers, the book cost of which is included in Account 1850, Line Transformers. The cost shall include renewing oil, painting and the like, necessary to keep the equipment in service.

Note: All lightning arresters on the distribution system, excluding pothead arresters, are considered to be transformer equipment or devices and the maintenance thereof is chargeable to this account. Records shall be kept to separately show costs related to overhead and underground transformers.

5165 Maintenance of Street Lighting and Signal Systems

This account shall include the cost of labour, materials used and expenses incurred in maintenance of plant, the book cost of which is included in Account 1875, Street Lighting and Signal Systems.

5170 Sentinel Lights - Labour

This account shall include labour related to servicing rental sentinel lights.

5172 Sentinel Lights - Materials and Expenses

This account shall include trucking, materials and other expenses related to servicing rental sentinel lights.

5175 Maintenance of Meters

This account shall include the cost of labour, materials used and expenses incurred in the maintenance of meters and meter testing equipment, the book cost of which is included in Account 1860, Meters, and Account 1945, Measurement and Testing Equipment, respectively.

The cost shall include cleaning and painting and other work necessary to keep the equipment in service. The labour and expenses incident to the operation of the meter repair department shall be a charge to these accounts.

5178 Customer Installations Expenses - Leased Property

This account shall include the cost of labour, materials used and expenses incurred in work on customer installations of leased property included in account 1870, Leased Property on Customer Premises and in rendering services to customers of the nature of those indicated by the list of items hereunder.

Example items:

Labour:

- Supervision specific to customer installations work
- Installing, connecting, reinstalling, or removing leased property on customers' premises
- Testing, adjusting, and repairing customers' fixtures and appliances in shop or on premises
- Cost of changing customers' equipment due to changes in service characteristics

Materials and Expenses:

- Materials used in servicing customers' fixtures, appliances and equipment
- Power, light, heat, telephone, and other expenses of appliance repair department
- Tool expense
- Transportation expense, including pickup and delivery charges
- Meals, traveling and incidental expenses

5195 Maintenance of Other Installations on Customer Premises

This account shall include the cost of labour, materials used and expenses incurred in maintenance of plant the book cost of which is included in Account 1865, Other Installations on Customer Premises.

Article 220 - Uniform System of Accounts
Income Statement
Other Expenses

5205 Purchase of Transmission and System Services

This account will be used to record expenses related to purchase of transmission and system services.

5210 Transmission Charges

This account will be used to record Transmission Charges incurred.

5215 Transmission Charges Recovered

This account will be used to record Transmission Charges recovered from customers. Records shall be maintained so that the quantity of electricity supplied each party and the related revenues shall be readily available.

Article 220 – Uniform System of Accounts
Electric Plant in Service - Detailed Accounts
A. Intangible Plant

1606 Organization

This account shall include all fees paid to federal or provincial governments for the privilege of incorporation and expenditures incident to organizing the corporation, and putting it into readiness to do business.

Example items

- Cost of obtaining certificates authorizing an enterprise to engage in the public utility business
- Fees and expenses for incorporation
- Fees and expenses for mergers or consolidations
- Office expenses incident to organizing the utility
- Stock and minute books and corporate seal.

Note A: This account shall not include any discounts upon securities issued or assumed; nor shall it include any costs incident to negotiating loans, selling bonds or other evidences of debt or expenses in connection with the authorization, issuance or sale of capital stock.

Note B: When charges are made to this account for expenses incurred in mergers, consolidations, or reorganizations, etc. amounts previously included herein or in similar accounts in the books of the entities concerned shall be excluded from this account.

Note C: This account shall include amounts related to transfer by-laws.

1608 Franchises and Consents

A. This account shall include amounts paid to the federal, provincial, or other government in consideration for franchises, consents, water power licenses, or certificates, running in perpetuity or for a specified term of more than one year, together with necessary and reasonable expenses incident to procuring such franchises, consents, water power licenses, or certificates of permission and approval.

B. If a franchise, consent, water power license or certificate is acquired by assignment, the charge to this account shall not exceed the amount paid by the utility.

C. The amortization related to any item in this account shall be recorded in Account 2120, Accumulated Amortization of Electric Utility Plant - Intangibles.

D. Records supporting this account shall be kept so as to show separately the book cost of each franchise or consent.

Note: Annual or other periodic payments under franchises shall not be included herein but in the appropriate operating expense account.

1609 Capital Contributions Paid

This account shall include capital contributions paid by a distributor to a host distributor, a transmitter or a generator for capital expenditures (e.g., under a Connection and Cost Recovery Agreement) that meet the IAS 38 Intangible Assets requirements for classification as an intangible asset. The amortization related to any item in this account shall be recorded in Account 2120, Accumulated Amortization of Electric Utility Plant – Intangibles.

1610 Miscellaneous Intangible Plant

A. This account shall include the cost of patent rights, licenses, privileges, capitalizable load profile development costs and other intangible property necessary or valuable in the conduct of utility operations and not specifically chargeable to any other account.

B. The amortization related to any item in this account shall be recorded in Account 2120, Accumulated Provision for Amortization of Electric Utility Plant - Intangibles.

C. This account shall be maintained in such a manner that the utility can furnish full information with respect to the amounts included herein.

1611 Computer Software

This account shall include the cost of developed or purchased computer operating and application software that is material in amount.

Example items:

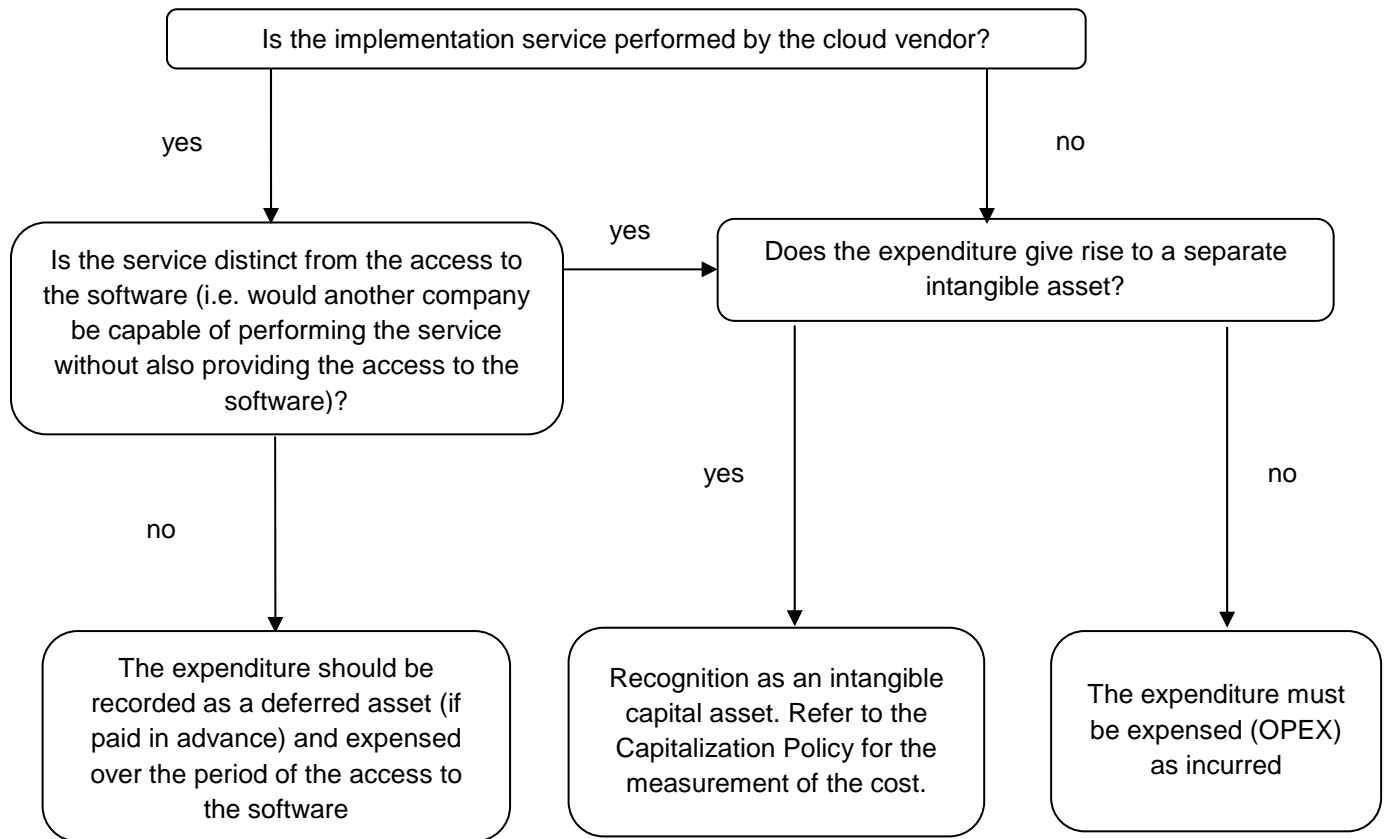
- Accounting packages
- Customer Information System (CIS)
- Groupware packages (e.g. e-mail, scheduling & conferencing programs, etc.)
- Database management system packages
- Software development tools.
- Primary development tools.

1612 Land Rights

This account(s) shall include the cost of rights, interests and privileges held by the utility in land owned by others. See Article 230 Definitions and Instructions No. 8 for detail guidance.

Note: Do not include in this account the cost of permits to erect poles, towers, etc., or to trim trees. See Account 1830, Poles, Towers and Fixtures, and Account 5135, Overhead Distribution Lines and Feeders - Tree Trimming.

CAPITALIZATION POLICY
APPENDIX C: DECISION TREE – IMPLEMENTATION COSTS FOR A SERVICE CONTRACT OF CLOUD COMPUTING ARRANGEMENTS



1 **OVERHEAD COSTS**

2

3 This schedule provides a breakdown of operational, maintenance and administrative
4 (OM&A) expenses before capitalization, in accordance with section 2.2.9 of the OEB's Filing
5 Requirements for Electricity Distribution Rate Applications (December 15, 2022). OEB
6 Appendix 2-D (Overhead Costs) is attached to this schedule.

7

8 **1. BURDEN RATES**

9 Toronto Hydro's capital work is bundled into projects which are compromised primarily of
10 labour, material and vehicle costs. As set out in Toronto Hydro's Capitalization Policy filed at
11 Exhibit 2A, Tab 4, Schedule 1, Appendix A, and consistent with the utility's last rebasing
12 application, Toronto Hydro charges these costs directly to projects as they are incurred. This
13 section details each of these three cost activities, and explain how the costs are allocated
14 across projects.

15

16 **1.1 Labour Costs**

17 Toronto Hydro uses a standard labour rate ("SLR") to allocate labour costs to projects by
18 using timesheets, consistent with the common industry practice. The SLR is a fully burdened
19 hourly rate which is calculated by dividing the total compensation costs by total available
20 hours. The total available hours consist of: (i) total working hours in a year less: (ii) leaves
21 (e.g. vacation, sick time, and statutory holidays), as well as (iii) time not spent working on a
22 specific operating or capital project (e.g. legislative training requirements, safety meetings,
23 downtime, etc.).

24

25 Toronto Hydro calculates SLRs for each role in its workforce. These rates are updated on an
26 annual basis and are initially derived based on the inputs gathered during the annual

1 planning process, which are subsequently adjusted for actuals at the year-end for any
2 variances to the budgeted amounts.

3

4 As described in Exhibit 4, Tab 4, Schedule 3, Toronto Hydro has a diverse workforce of highly-
5 skilled employees responsible for executing different types of work. The utility organizes its
6 workforce under multiple labour classes based on management and operational needs and
7 as such, different labour rates apply to each workforce segment. The methodology for
8 calculating Toronto Hydro's SLRs is consistent with the last rate application.

9

10 **1.2 Material Handling On-cost**

11 A material handling on-cost charge is applied to material issuances from the warehouse to
12 allocate the fully burdened rate of material costs to projects. Toronto Hydro applies a
13 standard fixed on-cost rate on material moving average price to recover costs associated
14 with procurement, and warehousing activities. The methodology for calculating on-cost
15 rate, described in more detail below, is consistent with the last rebasing application.¹

16

17 The on-cost rate is calculated by dividing procurement and warehousing related operating
18 expenses that meet the capitalization criteria as described in Toronto Hydro's Capitalization
19 Policy² with the dollar value of material moving through the warehouse in a given year. This
20 rate is applied as a fixed percentage on all material issuances to capital and operating
21 projects to recover cost of supply chain services to projects. The costs recovered in the
22 material surcharge include costs as described in the Supply Chain Services program (Exhibit
23 4, Tab 2, Schedule 13), the Facilities Management program (Exhibit 4, Tab 2, Schedule 12),
24 and the Allocations and Recoveries schedule (Exhibit 4, Tab 2, Schedule 21).

¹ EB-2018-0165, Exhibit 4A, Tab 2, Schedule 13.

² Exhibit 2A, Tab 4, Schedule 1, Appendix A.

1 Toronto Hydro calculates the on-cost rate on an annual basis, initially derived based on the
2 inputs gathered during the annual planning process, and subsequently adjusted for actuals
3 at the year-end process.

4

5 **1.3 Vehicle Costs**

6 Toronto Hydro uses a standard vehicle hire rate (“VHR”) to allocate vehicle costs to projects
7 by using timesheets, consistent with the common industry practice. The VHR is a fully
8 burdened hourly rate which is calculated by dividing: (i) operation, maintenance, and repair
9 costs as described in the Fleet and Equipment Services program (Exhibit 4, Tab 2, Schedule
10 11), (ii) fuel costs, and (iii) depreciation by total available hours. The methodology for
11 calculating VHR is consistent with the last rebasing application with minor changes described
12 in more detail below.

13

14 The total available hours consist of: (i) total working hours in a year less: (ii) leaves (as the
15 vehicles are not operated when employees are on leaves such as vacation and statutory
16 holidays), as well as (iii) time not spent working on a specific operating or capital projects
17 (e.g. legislative training requirements, safety meetings, downtime, etc.).

18

19 Toronto Hydro calculates the VHR for each of the vehicles in its fleet. These rates are
20 updated on an annual basis, initially derived based on the inputs gathered during the
21 planning process, which subsequently adjusted for actuals at the year-end process.

22 Since the last rebasing application, Toronto Hydro updated its approach for the calculation
23 of available hours to deduct leaves and time not spent working on specific operating or
24 capital jobs from total working hours; previously total working hours were deducted for a
25 factor for vehicle repairs and maintenance.

1 **2. CAPITALIZED OVERHEAD COSTS**

2 Tables 1 and 2 below summarize Toronto Hydro’s capitalized overhead costs for the current
 3 2020-2024 and the future 2025-2029 rate period.

5 **Table 1: 2020-2024 Actual and Bridge Overhead Capitalization Costs (\$ Millions)**

Capitalized OM&A	2020 Actuals	2021 Actuals	2022 Actuals	2023 Bridge	2024 Bridge
Labour Capitalization	(117.7)	(99.0)	(117.5)	(115.0)	████████
Vehicle Capitalization	(4.2)	(5.7)	(6.0)	(5.4)	(5.6)
Material Handling On-cost	(12.4)	(12.0)	(14.1)	(15.8)	(17.8)
Total Capitalized OM&A	(134.3)	(116.7)	(137.6)	(136.2)	████████

6

7 **Table 2: 2025-2029 Forecast Overhead Capitalization Costs (\$ Millions)**

Capitalized OM&A	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast
Labour Capitalization	████████	████████	████████	████████	████████
Vehicle Capitalization	(5.6)	(5.7)	(5.8)	(5.8)	(5.9)
Material Handling On-cost	(20.3)	(22.1)	(23.5)	(24.0)	(25.6)
Total Capitalized OM&A	████████	████████	████████	████████	████████

8

9 Tables 3 and 4 below summarize the percentage of OM&A capitalized during the current
 10 2020-2024 rate period and the future 2025-2029 rate period, respectively.

11 **Table 3: 2020-2024 Actual and Bridge Percentage of Capitalized OM&A**

OM&A (\$ Millions)	2020 Actuals	2021 Actuals	2022 Actuals	2023 Bridge	2024 Bridge
Total OM&A Before Capitalization (B)	422.4	394.2	418.0	437.7	479.8
Total Capitalized OM&A (A)	(134.3)	(116.7)	(137.6)	(136.2)	████████
% of Capitalized OM&A (A/B)	-32%	-30%	-33%	-31%	████████

1 **Table 4: 2025-2029 Forecast Percentage of Capitalized OM&A**

OM&A (\$ Millions)	2025	2026	2027	2028	2029
Total OM&A Before Capitalization (B)	509.8	537.7	561.9	588.0	615.0
Total Capitalized OM&A (A)					
% of Capitalized OM&A (A/B)					

2

3 In the current 2020-2024 rate period, capitalized OM&A averages at ■ percent per year,
 4 whereas in the next rate period the average is forecasted at ■ percent. This is primarily
 5 attributed to greater labour capitalization driven by increased headcount as set out in the
 6 utility’s workforce plan at Exhibit 4, Tab 4. At a macro level, this trend shows that the utility’s
 7 workforce plan is driven in large part by the need to support the execution of a larger capital
 8 plan as outlined in Exhibit 2B. Since not all workforce-related costs can be directly attributed
 9 to the construction or creation of capital assets, a corresponding increase in OM&A (after
 10 capitalization) is also necessary to enable the execution of a larger capital work program.
 11 Please see Exhibit 4, Tab 1, Schedule 1 for a further discussion of the relationship between
 12 OM&A, capital expenditures and workforce.

1 **COST OF ELIGIBLE INVESTMENTS FOR THE CONNECTION OF QUALIFYING**
2 **GENERATION FACILITIES**

3

4 This schedule summarizes the treatment of costs incurred to connect, or enable the
5 connection, of Renewable Energy Generation (“REG”) facilities to Toronto Hydro’s
6 distribution system, as eligible investments for provincial rate recovery under section 79.1
7 of the *Ontario Energy Board Act, 1998*.¹ Chapter 5.3 and Appendix A of the OEB’s Filing
8 Requirements for Electricity Distributor Rate Applications invites distributors to apply for
9 provincial rate protection associated with costs incurred to make eligible investments.²

10

11 **1. REG CONNECTIONS**

12 As of December 31, 2022, Toronto Hydro connected 2,280 REG projects representing over
13 116.2 MW of capacity, and completed approximately 751 MW of pre-assessment capacity
14 reviews. Toronto Hydro anticipates over 1,700 new REG connections during the 2023
15 through 2029 period, with a corresponding capacity of 74 MW. By the end of the decade,
16 the utility forecasts approximately 200 MW of total REG capacity connected to its grid.³

17

18 As part of its capacity planning process outlined in Exhibit 2B, Section D4, the utility
19 identified a number of constraints that impact DER (including REG) connections to the
20 distribution grid, including: limited breaker and station equipment capacity due to short
21 circuit capacity constraints; reverse power flow limitations based on transformer thermal
22 capacity and minimum load requirements; anti-islanding conditions for DG; and system
23 thermal limits and load transfer capability.

¹ Cost Recovery re Section 79.1 of the Act, O. Reg. 330/09, at s. 1(2).

² See also O. Reg. 330/09 made under the Act.

³ For further information, please refer to Customer Connections (Exhibit 2B, Section E5.1).

1 Short circuit capacity constraints on station equipment are the primary constraint for REG
2 connections. To determine the short circuit capacity at stations and other locations on the
3 distribution system, Toronto Hydro employs sophisticated fault and power flow simulation
4 models. These models predict how much fault current will flow to a specific location from
5 generators located throughout the distribution system. The presence of REG on distribution
6 feeders can contribute to fault current that can cause station equipment, such as circuit
7 breakers, to exceed short circuit capacity limits. Toronto Hydro completes a study for each
8 new REG application to monitor the available existing short circuit capacity of the system.

9

10 **2. REI INVESTMENT SUMMARY**

11 To address the above-noted constraints at the distribution level, Toronto Hydro intends to
12 undertake a number of Renewable Enabling Improvement (“REI”) investments as part of its
13 2025-2029 Distribution System Plan (“DSP”) filed at Exhibit 2B.

14

15 **2.1 Generation Protection, Monitoring, and Control (GPMC) Program**

16 The GPMC program includes two types of REI investments:

- 17 • **Bus-Tie Reactors:** Bus-tie reactors lower the short circuit current on the station bus
18 and distribution system by insertion of an impedance at the bus-tie point. Toronto
19 Hydro proposes to work with Hydro One to install bus-tie reactors at Richview,
20 Runnymede, Cecil, Esplanade, Leslie and Woodbridge TS to eliminate the existing
21 fault current constraint, which will enable REG connections. For additional details,
22 please refer to the Generation Protection, Monitoring, and Control (GPMC) Program
23 (Exhibit 2B, Section E5.5).
- 24 • **Remote Monitoring and Control of Generation (SCADA):** During the 2020-2024 plan
25 period, Toronto Hydro is installing monitoring and control systems for all new
26 distributed generation (“DG”) connections. These real-time monitoring and control

1 systems communicate with REG resources via communication networks connected
2 to the utility’s supervisory control and data acquisition (“SCADA”) system to enable
3 safe operation of the distribution system and feeder management of bi-directional
4 distribution grid flows. The technology provides system planners and operators real-
5 time visibility to manage generation-to-load ratios within tolerable levels and ensure
6 that the anti-islanding feature of DG facilities operate in the event of a distribution
7 system fault.

8
9 Toronto Hydro must continue to invests in the GPMC program to enable safe and reliable
10 connection and integration of REG resources in the 2025-2029 rate period. In accordance
11 with the DSC, the utility’s costs associated with installing monitoring and control technology
12 are limited to REG resources, as non-renewable generation projects bear the cost of this
13 technology.

14 15 **2.2 Energy Storage**

16 Studies show that significant penetration of REG can lead to destabilizing grid parameters.⁴
17 Energy storage systems (“ESS”) can be leveraged to stabilize the grid by balancing the
18 minimum load to generation ratios (“MLGR”) on feeders with REG connections. Rather than
19 curtailing the generation output of REG facilities connected to feeders where minimum load
20 is low, renewable enabling ESS can be deployed (as a load) to increase the load to generation
21 ratio to the recommended threshold. Toronto Hydro plans to deploy nine energy storage
22 systems with an aggregate capacity of 10.2 MW on nine distribution feeders that are
23 forecast to have high generator to minimum load ratios over the 2025-2029 period.

⁴ M. Begovic et. al., *Impact of Renewable Distributed Generation on Power Systems*, Proceedings of the 34th Hawaii International Conference on System Sciences (2001), available at <<https://pserc.wisc.edu/ecow/get/publicatio/2000public/CSSAR01.PDF>>.

1 In the 2020-2024 Decision (EB-2018-0165), the OEB directed Toronto Hydro to provide an
 2 assessment of the appropriate share of benefits for ESS projects as a part of future requests
 3 for funding for provincial rate application when ESS projects may provide additional benefits
 4 to the distribution system, like demand response and grid capacity relief.⁵ However, Toronto
 5 Hydro notes that the 2020-2024 ESS program included proposed investments in grid
 6 performance ESS and customer-specific ESS, in addition to renewable enabling ESS.⁶ In the
 7 2025-2029 rate period, Toronto Hydro’s ESS program targets the enablement of REG
 8 connections and does not contemplate additional use cases to support the distribution
 9 system. As a result, Toronto Hydro proposes to apply the generic 6 percent direct benefit
 10 assumption for enabling improvement investments in accordance with the Chapter 2 Filing
 11 Requirements.⁷

12

13 **2.3 IESO Letter of Comment Regarding REG Investments**

14 The IESO reviewed Toronto Hydro’s REG investment plans, and confirmed that the
 15 forecasted REG and other DER connections are an input to the regional planning process.
 16 For more information, please refer to Exhibit 2B, Section B at Appendix G.

17

18 **3. ELIGIBLE INVESTMENTS COSTS**

19 Table 1 summarizes the cost of planned REI investments in 2025 to 2029 rate period.⁸

20

21 **Table 1: Renewable Enabling Improvements (“REI”) from 2025-2029 (\$ Millions)**

Capital Program	2025	2026	2027	2028	2029	Total
Generation, Protection, Monitoring, and Control	5.9	6.1	6.3	6.5	10.3	35.0

⁵ EB-2018-0165, Decision and Order (December 19, 2019) at pages 117 and 119.

⁶ Ibid. at pages 109-110.

⁷ Ontario Energy Board, Filing Requirements for Electricity Distributor Rate Applications, Chapter 2 (December 15, 2022), Appendix A.

⁸ Toronto Hydro is not proposing any specific Renewable Expansion investments during 2025-2029.

Capital Program	2025	2026	2027	2028	2029	Total
Energy Storage	3.6	3.6	7.5	3.8	4.0	22.5
Totals	9.5	9.7	13.8	10.3	14.3	57.5

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11

4. PROVINCIAL RATE PROTECTION

Toronto Hydro applied the six percent direct benefit percentage provided by the OEB with respect to REI investments to calculate the provincial rate protection amounts. The detailed breakdown is provided in the OEB Appendices 2-FA and 2-FB at Exhibit 2A, Tab 5, Schedules 2 and 3.⁹ Two versions of the OEB Appendices 2-FA and 2-FB are filed: one for Energy Storage and one for Generation, Protection, Monitoring, and Control systems. This is necessary, as the useful lives of these assets are different. Further, the OEB Appendices reflect the 2020 opening balances, which arise from the REI in the utility’s 2020-2024 Rate Application.¹⁰ The opening balances reflect the current forecast for REI programs previously approved by the OEB.

⁹ Appendix 2-FC provided in Schedule 4 is not applicable.
¹⁰ EB-2018-0165, Decision and Order (December 19, 2019).