HYDRO OTTAWA LIMITED

Components and Estimated Useful Lives

Property, Plant And Equipment

Background

The following document outlines the rationale for establishing the useful life of assets as well as the depreciation method for property, plant and equipment. It is important to note that many factors can influence the useful life of assets and therefore it should not be based simply on the advertised technical life expectancy of those assets (ie. the average natural asset life).

The discussion below will highlight the relevant points in order to support the estimate of useful life in order to calculate depreciation to be recorded under IFRS. The following guidance out of IAS 16.56 and 57 was considered when assessing the useful life of the assets:

(a) Expected usage of the asset. Usage is assessed by reference to the asset's expected capacity or physical output.
(b) Expected physical wear and tear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance program, and the care and maintenance of the asset while idle.
(c) Technical or commercial obsolescence arising from changes or improvements in production, or from a change in the market demand for the product or service output of the asset.
(d) Legal or similar limits on the use of the asset, such as the expiry dates of related leases.

The useful life of an asset is defined in terms of the asset's expected utility to the entity. The asset management policy of the entity may involve the disposal of assets after a specified time or after consumption of a specified proportion of the future economic benefits embodied in the asset. Therefore, the useful life of an asset may be shorter than its economic life. The estimation of the useful life of the asset is a matter of judgement based on the experience of the entity with similar assets.

The nature of the evidence used in order to support the useful lives is relatively consistent amongst the assets. The evidence to support the useful lives is based on useful life estimates of professional engineers within the company that have history and extensive experience in the industry. Asset management plans and historical records were also consulted.

Please note that the documentation below is more extensive for those assets with significant dollar amounts. Assets with a lower historical cost have less documentation to support the useful lives given the fact that they have less ability to impact the depreciation recorded in the statement of operations.

Note on annual review process: In accordance with IAS 16, paragraph 51, "The residual value and the useful life of an asset shall be reviewed at least at each financial year-end and, if expectations differ from previous estimates, the change(s) shall be accounted for as a change in an accounting estimate in accordance with IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors.

Note on residual values: In accordance with IAS 16, paragraph 53, "The depreciable amount of an asset is determined after deducting its residual value. In practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount".

- They have been assigned 30 years to remain in step with other vault equipment (transformers above) and are likely to be replaced due to load and building changes.
- The asset management plan calls for a 45-50 year replacement for the air switchgear, however, this is theoretical life and not the actual life per experience
- The replacement of the switchgear is not dependant on other assets, it will be replaced upon their failure, not the failure of other assets

PILC Cable

Component Code **6730**
Useful Life **60 Years**
OEB USofA **1845 Underground Conductors and Devices**
JDE Description **U/G PILC Cable**

PILC Cables are high voltage cables that have oil soaked paper insulation wrapped in a lead sheath. The core conductor is typically made of copper. The expected life has been determined based on the following:

- Historical experience has shown that PILC cables are capable of lasting longer than 60 years, however, the reality is that lead is a controlled substance and could be subject federal or provincial regulations. We have chosen to base life expectancy on other factor such as load changes and growth that would require circuit upgrades. Road rework will also be a factor that will reduce life expectancy.
- The PILC Cable is run to failure and there is nothing specific in the asset management plan that requires replacement prior to that point.
- This component includes U/G Cable Connections (elbows, stress cones, potheads, splices) these form part of the cable network and are therefore included in this component.

Underground Conduit and cable chambers

Component Code **6900**
Useful Life **40 Years**
OEB USofA **1840 Underground Conduit**
JDE Description **U/G Conduit and cable chambers**

Conduit is comprised of the following: 1) Concrete encased duct; 2) direct buried duct; 3) underground cable chambers; and 4) Concrete Equipment bases for pad-mounted switches and transformers. These conduits are used for the installation of both primary and secondary underground cables and may on occasion be replaced in conjunction with these assets. Replacement is likely to occur due to road widening and other municipal activities. The useful life for all of the categories of conduit has been determined to be 40 years based on the following:

- They are made of concrete that can last well in excess of 40 years
- Industry standard is 40 years for the concrete
- The replacement of the conduit is dependent on other factors (roadwork, growth), they will be replaced upon their failure, or the other factors as noted
- The asset management plan calls for replacement at 40 years
- Some conduits are replaced prior to 40 years, in conjunction with municipal road reconstruction, however, on average most last 40 years

Line Transformers Overhead & Underground

Component Code **7500**
Useful Life **30 Years**
OEB USofA **1850 Line Transformers**
JDE Description **Line Transformers O/H & U/G**

The life of a transformer is dependent on the loading profiles and ambient temperature change. Other factors such as mechanical damage, exposure to corrosive salts, and voltage surges also have a strong effect. A combination of these factors is used in order to arrive at the useful life.

Underground Transformers

Underground transformers are run to failure and typically have a life of 30 years. The useful life has been determined based on the following factors:

- Asset management plan indicates that the life of a transformer can be in excess of 50 years, however, this is the theoretical life and not in line with actual experience
- The replacement of these transformers are not dependant on other assets, they will be replaced upon their failure, not the failure of other assets
- Industry standard is presumed to be 35 years (obtained based on experience and through discussion with other utilities)
- The useful life of these transformers is shorter than the vault transformer due to it being outside and being susceptible to the elements (heat, rain, snow, cold, salt etc), where the vault transformer remains indoors

Overhead Transformers

Overhead transformers run to failure and typically have a life of 30 years. These transformers rest on poles. The useful life has been determined based on the following factors:

- Asset management plans indicate the theoretical life is 57 years (which is the maximum expected point of failure)
- The replacement of these transformers can be dependent on other assets, they will be replaced upon their failure, and/or the failure of poles
- The useful life of these transformers is shorter than the vault transformer due to the continual exposure to the outdoor elements (heat, rain, snow, cold, salt etc), where the vault transformer are indoors.
- The load profiles/service factors are higher than the vault transformers – load profiles are sometimes in excess of 125% of the rating on the transformer, which diminishes the useful life

Presenting multiple types of transformers would not provide any additional value to users, therefore one component was deemed appropriate.

Line Transformers Vault

Component Code **7510**
Useful Life **35 Years**
OEB USofA **1850 Line Transformers**
JDE Description **Line Transformers Vault**