

Analytica94, Inc.

Initial Study of U.S. Generating Unit Lives

2012

I. Introduction

Analytica94, Inc. (“A94”) performed an actuarial study of the lives of the principal types of U.S. generating units, using analytical techniques generally accepted in the utility industry and a database maintained by the U.S. Department of Energy (“DOE”). A94 concludes that the principal types of the U.S. generating units are experiencing the average life spans and retirement dispersions shown in Table A below.

Table A – 2012 Analysis

Generator Type	ASL	Iowa Curve	Units	Full Band
Steam – Coal (>50 MW)	67	R4.0	980	1928 - 2012
Steam – Natural Gas (>50 MW)	57	S3.0	320	1928 - 2011
Steam – Nuclear	31	L4.0	104	1960 - 1998
Combined Cycle - Steam	76	L1.5	667	1923 - 2012
Combined Cycle - Combustion	51	R3.0	1,160	1954 - 2012
Combustion (Gas) Turbine	60	L1.5	2,987	1900 - 2012
Combustion (Petro) Turbine	194	O4.0	639	1900 - 2012
Wind Turbine	60	R0.5	823	1900 - 2012
Hydraulic Turbine	180	L1.5	4,305	1891 - 2012
Internal Combustion	53	L1.0	5,751	1900 - 2012

II. Database

The DOE’s Energy Information Administration (“EIA”) requires every owner of an electric utility generating plant to file a Form 860 describing the status of its generating facilities. From these reports, EIA maintains data on the installation and retirements of generating units around the country.

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The data utilized in this study is available on the EIA's web site¹. The primary data used in A94's study is located in the Form 860 database files. After 2001, the EIA made some adjustments to the Form 860 database. One such adjustment was the removal of information regarding generating units retired before 2001.² A94 created its 2012 National Study Database ("Study Database") by updating its Form 860 Database (which contains the pre-2001 retirements taken from 2000 Form 860 Database) using the 2010 Form 860 Database and EIA's 2012 plant in-service and retirements reports, from which inputs were developed to be loaded into A94s actuarial analysis program.³

III. Results of Analysis

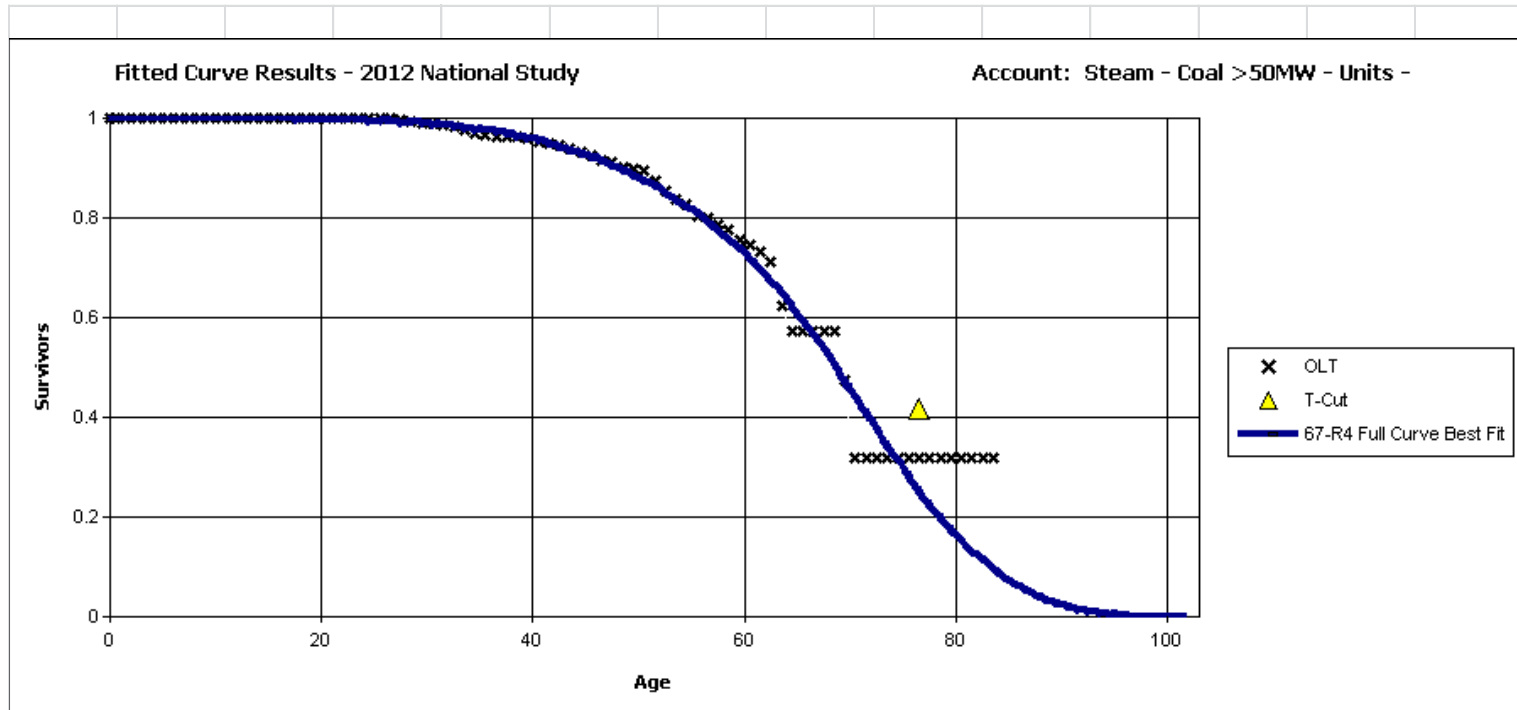
See Graphs and Charts below:

¹ <http://www.eia.doe.gov/cneaf/electricity/page/data.html>

² Prior to 2001, the EIA Form-860 Database was split into two parts, Form-860A (Annual Electric Generator Report – Utility) and Form-860B (Annual Electric Generator Report – Nonutility). After 2001 the EIA combined Form-860A and Form-860B in a single Form-860 database. During the consolidation of the two Form-860 databases, the EIA removed all listed retirements in the 2000 database. From 2001 onwards, the Form-860 database started listing new retirements and re-classification of generating units that retired prior to 2001. In some cases plants that were classified as operable during 2000, but in fact had been retired, were reclassified as retired in the EIA data after 2000.

³ The primary data file used in constructing the Study Database is the Existing Generators file. In creating the 2008 Study Database, A94 first developed a list of all retired units from the 2000 Form 860 Database. Next a list of retired units was generated from the 2008 Form 860 Database. The 2000 Retirement list was cross referenced with the 2008 Retirement list and any duplicate retirement units was removed. The adjusted 2000 Retirement list was then merged with the 2008 Form 860 data to create the Study Database.

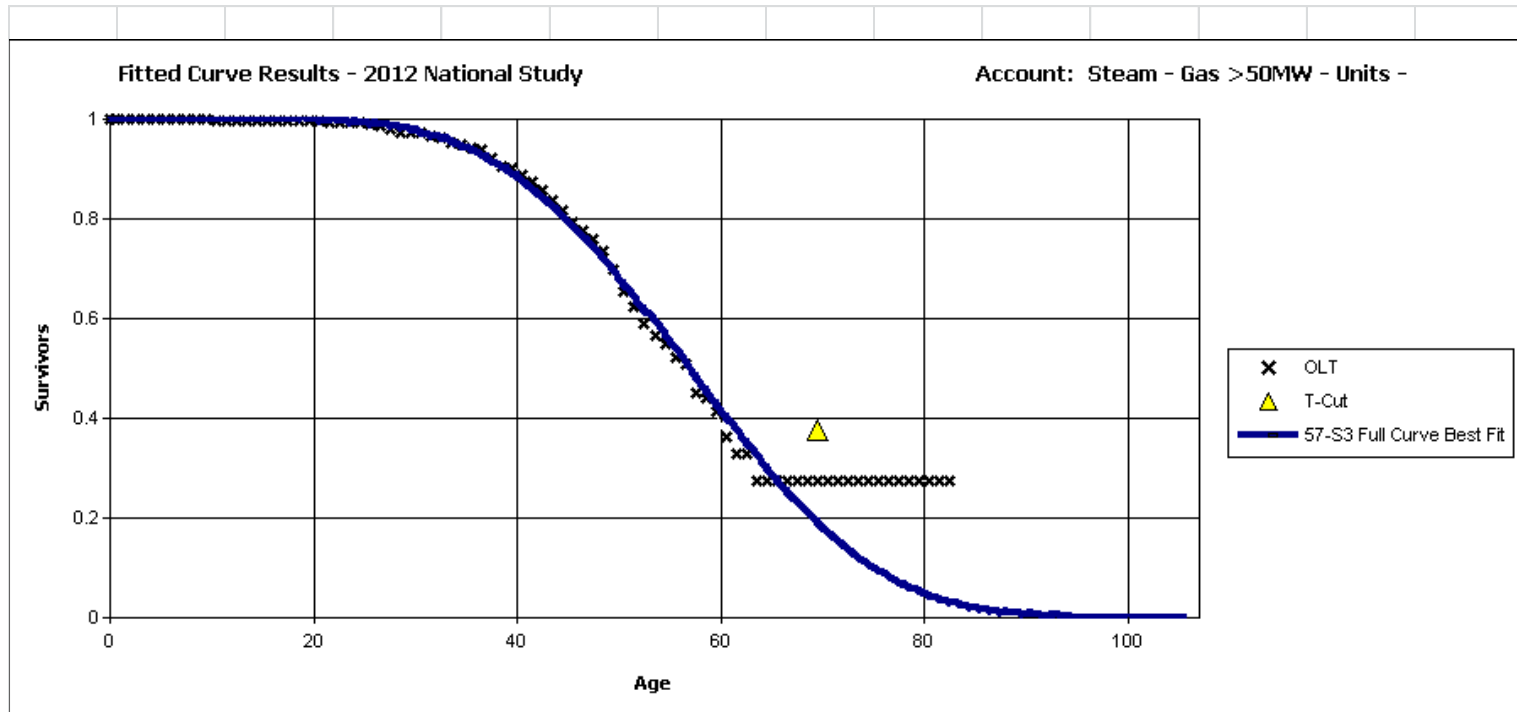
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Analytical Parameters

OLT Placement Band:	1928 - 2012
OLT Experience Band:	1928 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	78.0

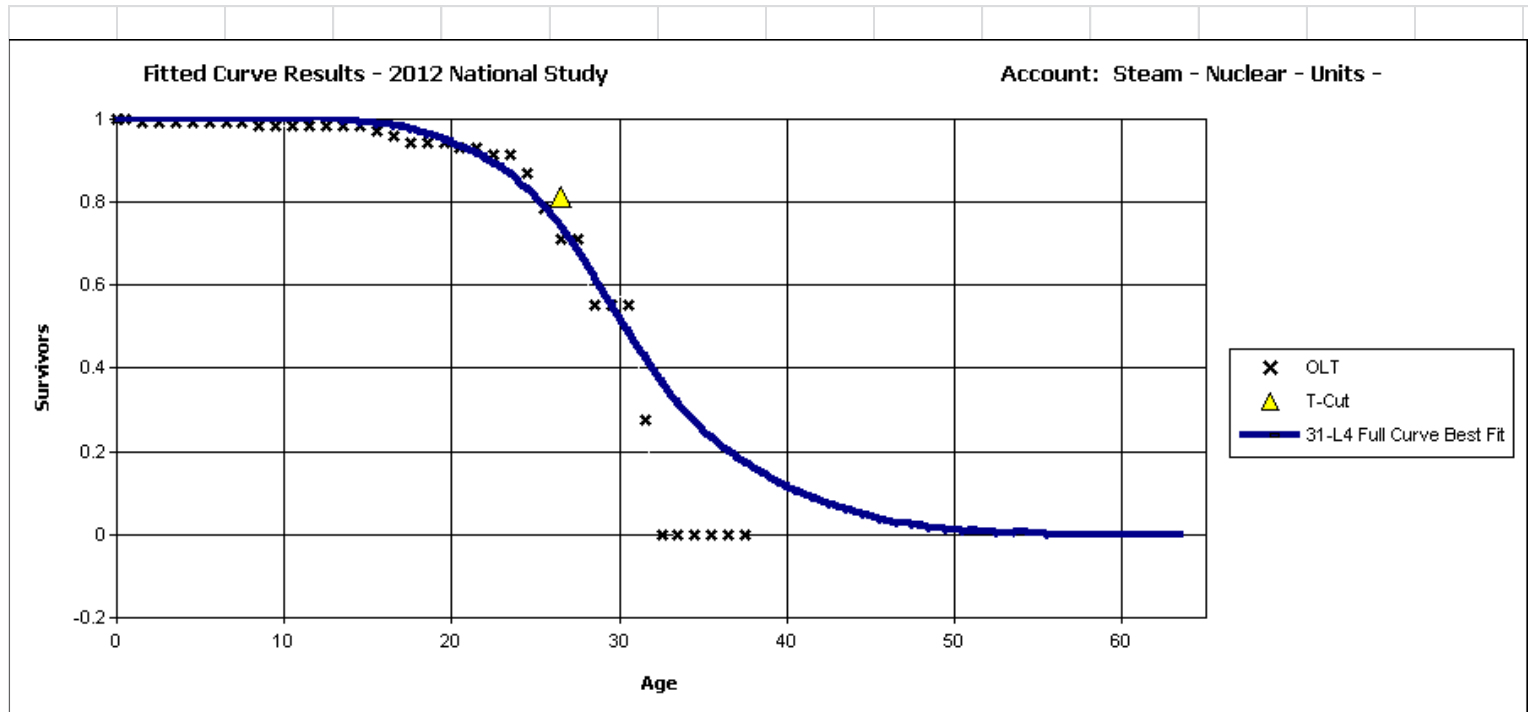
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Analytical Parameters

OLT Placement Band:	1928 - 2011
OLT Experience Band:	1928 - 2011
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	71.0

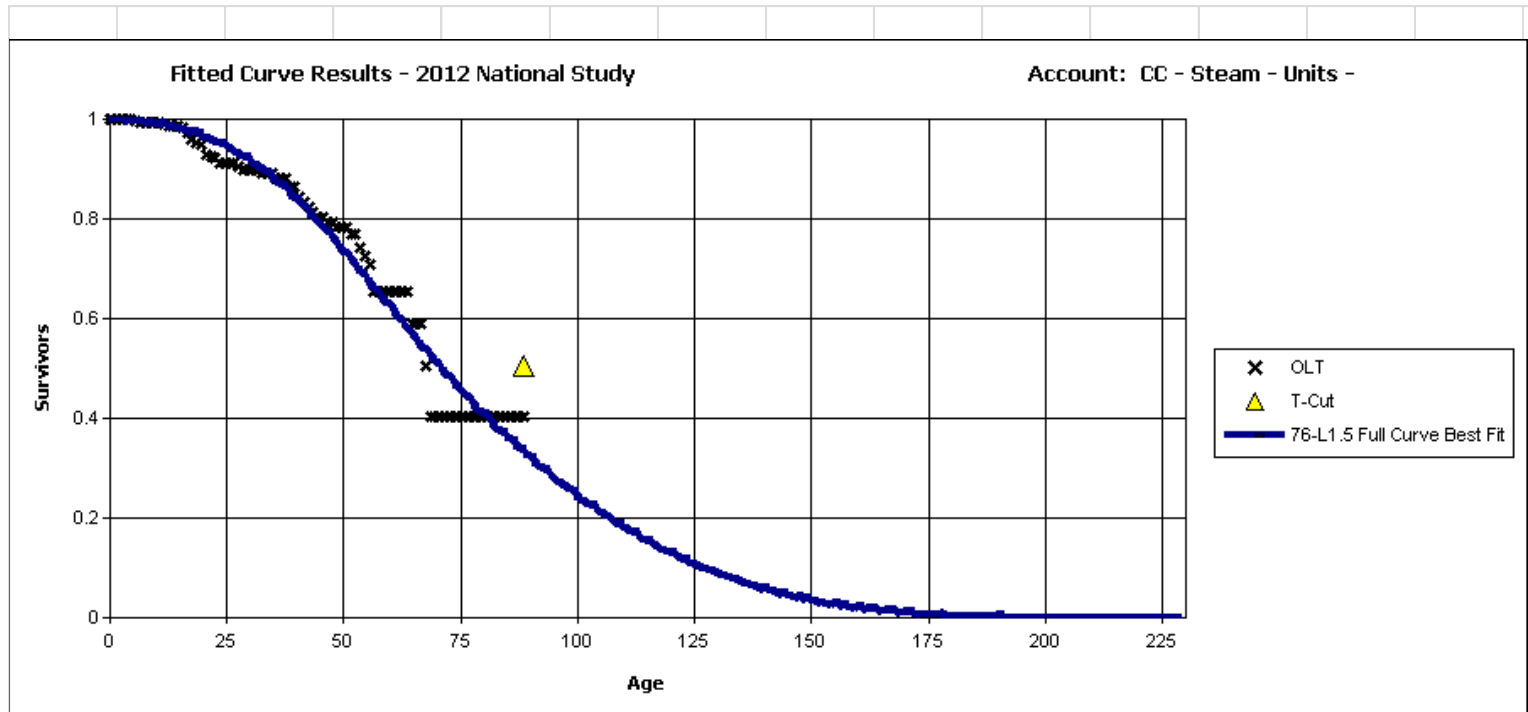
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Analytical Parameters

OLT Placement Band:	1960 - 1998
OLT Experience Band:	1960 - 1998
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	28.0

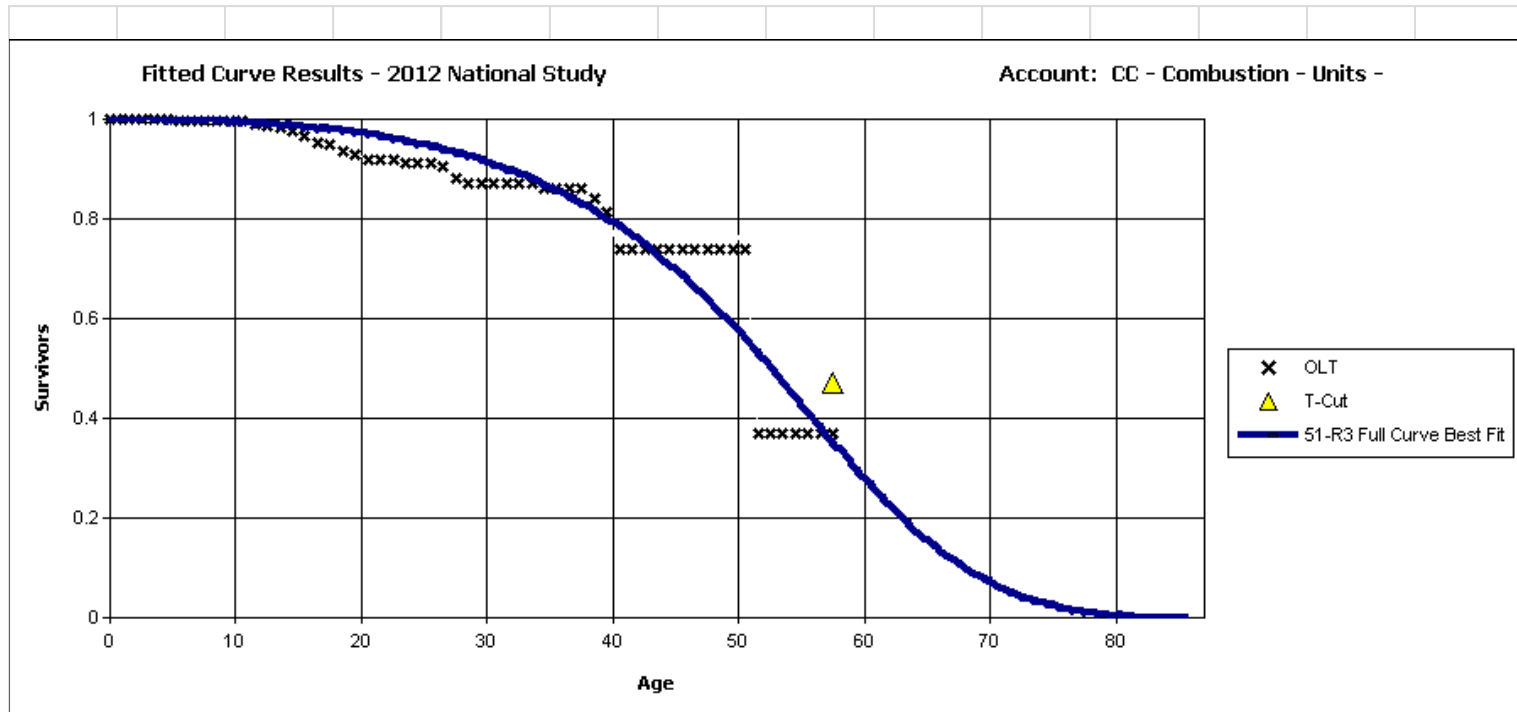
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Analytical Parameters

OLT Placement Band:	1923 - 2012
OLT Experience Band:	1923 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	90.0

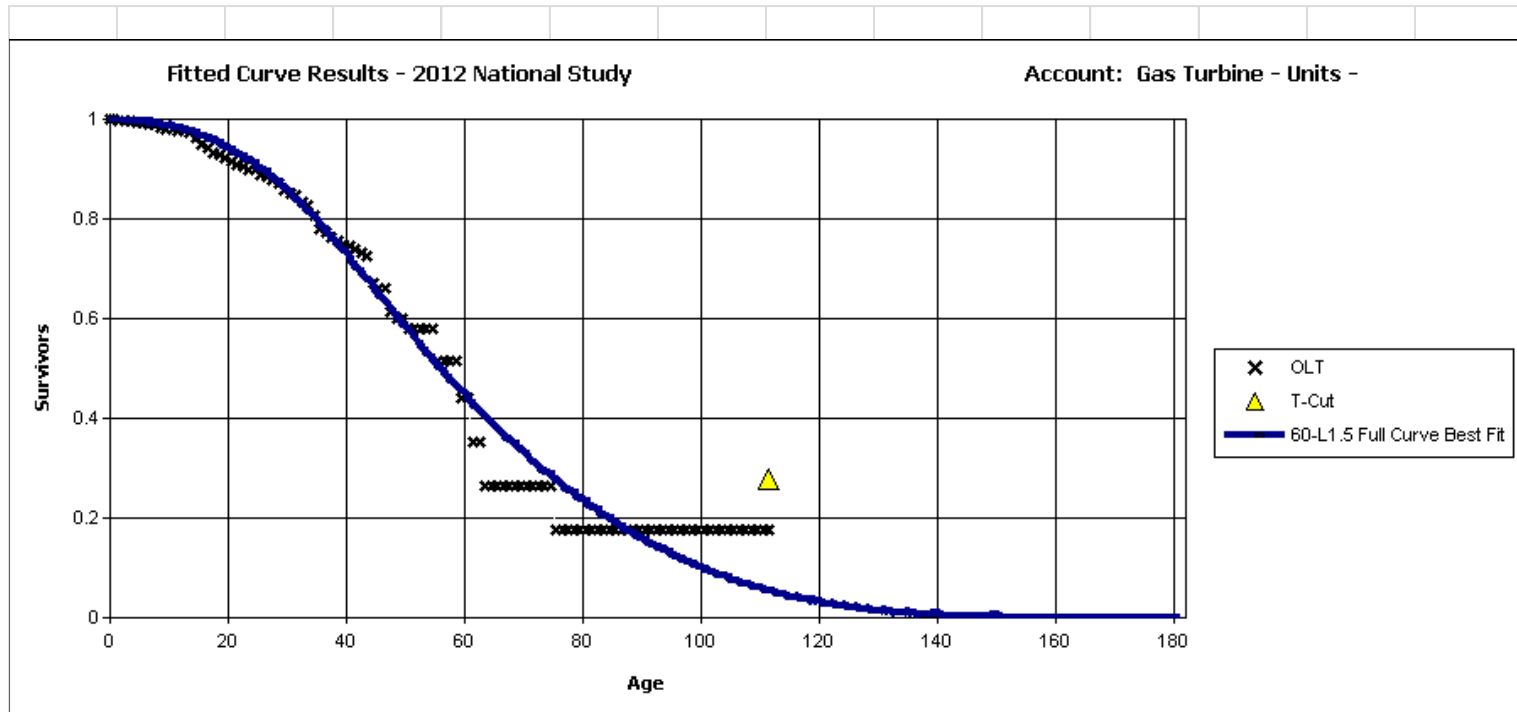
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Analytical Parameters

OLT Placement Band:	1954 - 2012
OLT Experience Band:	1954 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	59.0

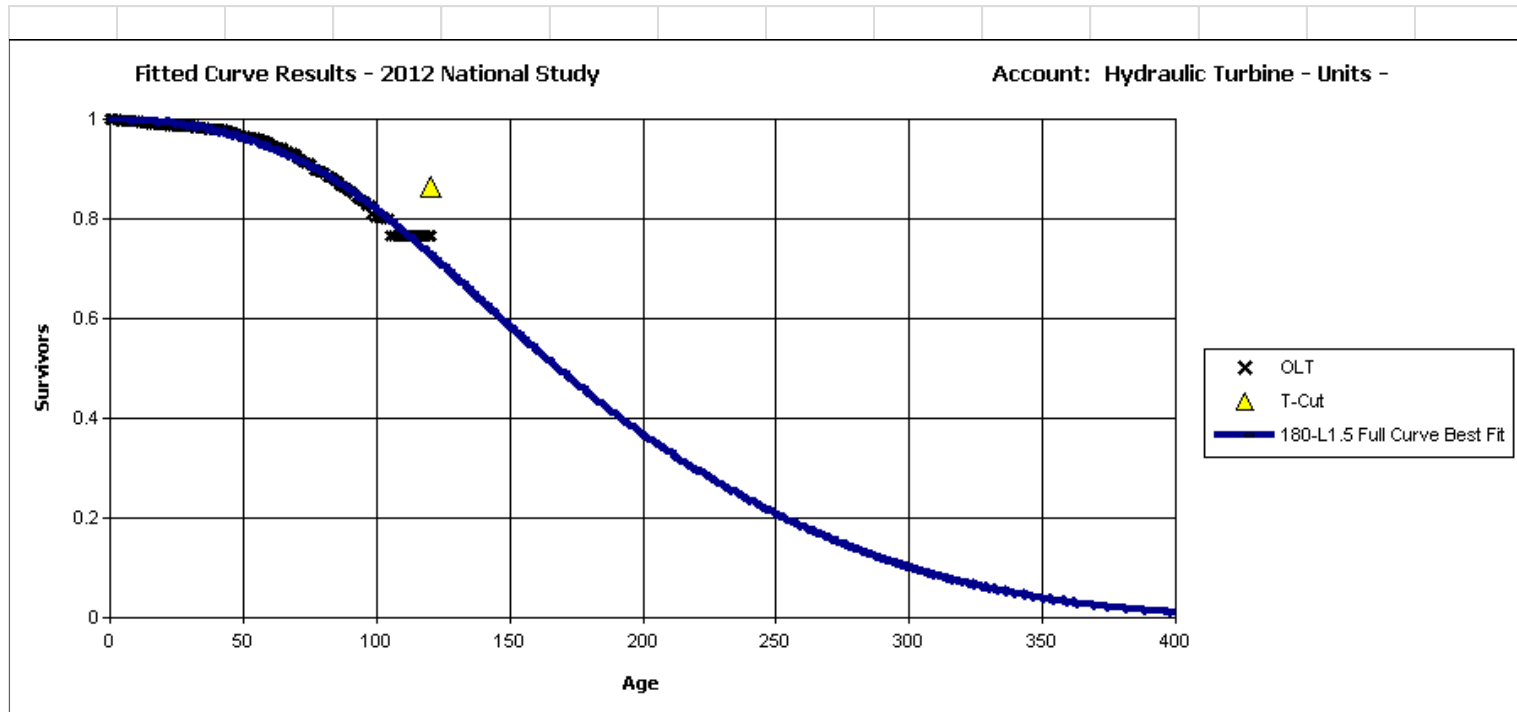
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Analytical Parameters

OLT Placement Band:	1900 - 2012
OLT Experience Band:	1900 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	113.0

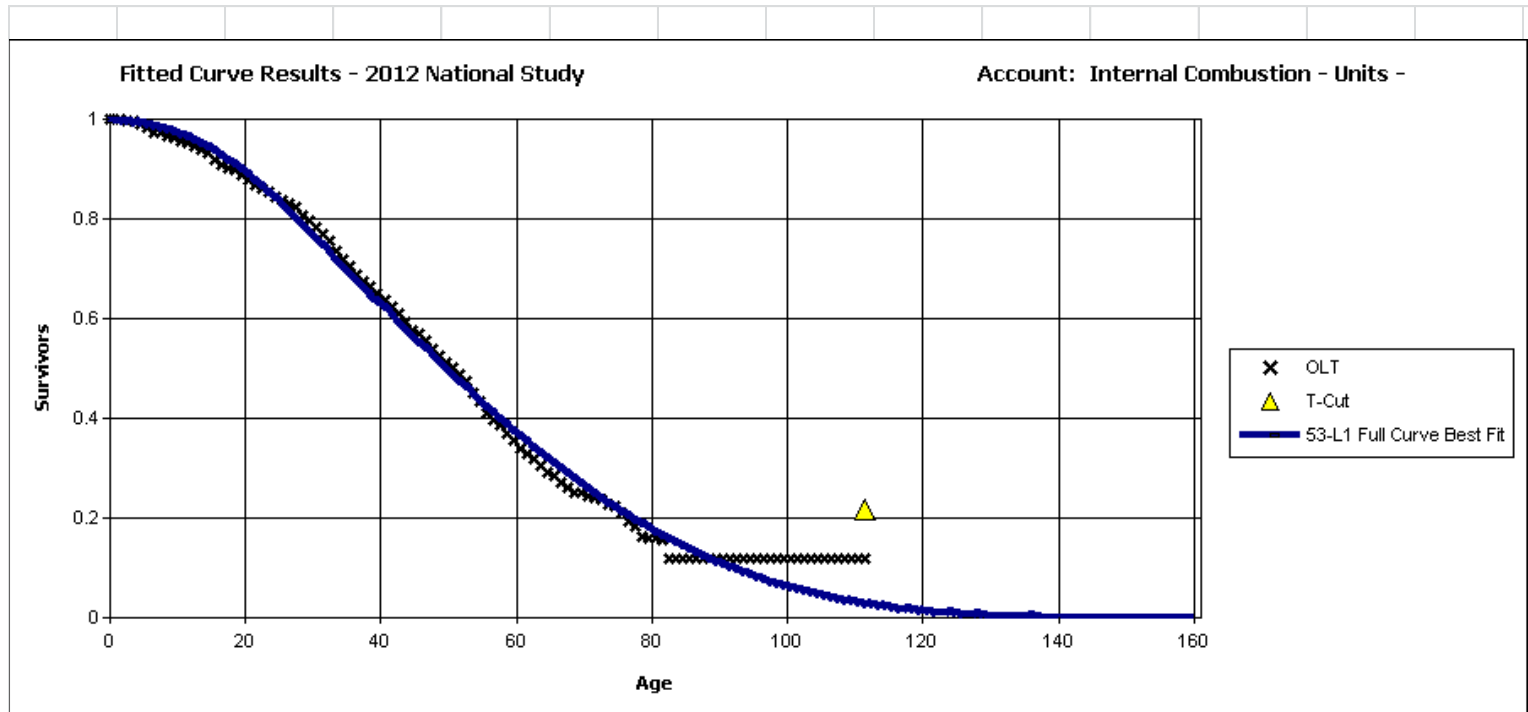
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Analytical Parameters

OLT Placement Band:	1891 - 2012
OLT Experience Band:	1891 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	500
Life Increment Parameter:	1
Max Age (T-Cut):	122.0

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Analytical Parameters

OLT Placement Band:	1900 - 2012
OLT Experience Band:	1900 - 2012
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	113.0

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IV. About Analytica94

OUR MISSION FOR MAIN STREET

Analytica94, Inc. ("A94") - a non-profit organization.

A94's provides the research, economic models and training necessary to evaluate the effectiveness of economic regulation of U.S. industries to *determine if it is protecting Main Street's interests.*

A94 is a *solution, a leveling mechanism* and a *vehicle* to fund the research, development and training required to respond effectively.

A94© Benefits:

- *Unbiased analyses* of the effectiveness of free market and regulatory cost containment points along monopoly supply chains.
- *Independent tests* of alternative mandates and policy changes.
- *Unique understanding* of the industry's and Main Street's costs, price drivers and elasticity coefficients, and
- *Proactive response* capabilities to potential legislative efforts.

For more information please visit our website at analytica94.org or contact the following person:

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