

Snavely King Majoros O'Connor & Lee National Study of U.S. Steam Generating Unit Lives 50 MW and Greater 2006 Study

I. Introduction

Snavely King Majoros O'Connor & Lee, Inc. ("Snavely King") performed a study of U.S. Steam Generating Units Lives, 50 MW and Greater using analytical techniques generally accepted in the utility industry and a database maintained by the U.S. Department of Energy ("DOE"). Snavely King concludes that the lives of the U.S. Steam Generating Units (50 MW and Greater) are experiencing average life spans of approximately 60 years and these spans are lengthening almost on a year-to-year basis.

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.

The data utilized in this study is available on the EIA's web site. The primary data used in Snavely King's study is located in the Form 860 database files¹. The data was downloaded in several steps into a single Microsoft Access file and developed into inputs for Snavely King's actuarial analysis program.

III. Analysis

Snavely King initially study ("1999 Study") conducted a full band (1918-1999) resulting in a 54 L4 life and Iowa curve indication. Snavely King's initial ten-year band resulted in a 59 L4 indication and its initial rolling and shrinking band analysis showed trends toward longer lives – as long as 70 years.

Snavely King's 2000 update ("2000 Update") consisted of an analysis of the full band (1900-2000) and the most recent ten-year band (1991-2000) of data. The full band analysis had a best fit result of 60.5 L3, which indicates a 60 year life. The ten-year band best fit was a 59.5 R4, which indicates a 59 year life.

¹ Prior to 2001, the EIA Form-860 Database was split 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 Study, but in fact had been retired were reclassified as retired in the EIA data after 2000

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Snavelly King's 2006 update ("2006 Update") consisted of an analysis of the full band (1900-2006) and the most recent ten-year band (1997-2006) of data. The full band analysis had a best fit result of 59 S3, which indicates a 59 year life. The ten-year band best fit was a 58 R4, which indicates a 58 year life.

IV. Additional Analyses

Additional analyses were performed: an expanded full band analysis, rolling band analysis and a shrinking band analysis. The results are discussed and set forth in tabular form below.

Expanded Full band Analysis

The expanded full band analysis held the initial year constant, but used cut off dates of 2005, 2004, 2003, and 2002. The actuarial analyses yielded the following results:

Expanded Full Band Analysis

Band	Life	Curve Type
1900-2006	59	S3
1900-2005	59	S3
1900-2004	59	S3
1900-2003	58	S3
1900-2002	58	S3

Rolling Band Analysis

The ten-year band analyses for these data sets provided a "rolling band" analysis. The results are summarized in the table below:

Rolling Band Analysis

Band	Life	Curve Type
1997-2006	58	R4
1996-2005	58	R4
1995-2004	58	R4
1994-2003	57	R4
1993-2002	58	L5

This indicates an increase in lives of generating units probably coincident with the wide spread introduction of life extension programs and the reduction in investment by utilities in new base load generating units.

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Finally, Snavely King did a “shrinking band” analysis, in which the final 2000 year was held constant and the bands were continually shrunk.

Band	Width	Life	Curve Type
2002-2006	5	58	S4
1997-2006	10	58	R4
1992-2006	15	58	R4
1987-2006	20	58	R4
1982-2006	25	57	R4

The shrinking band analysis corroborated earlier results and conclusions.