

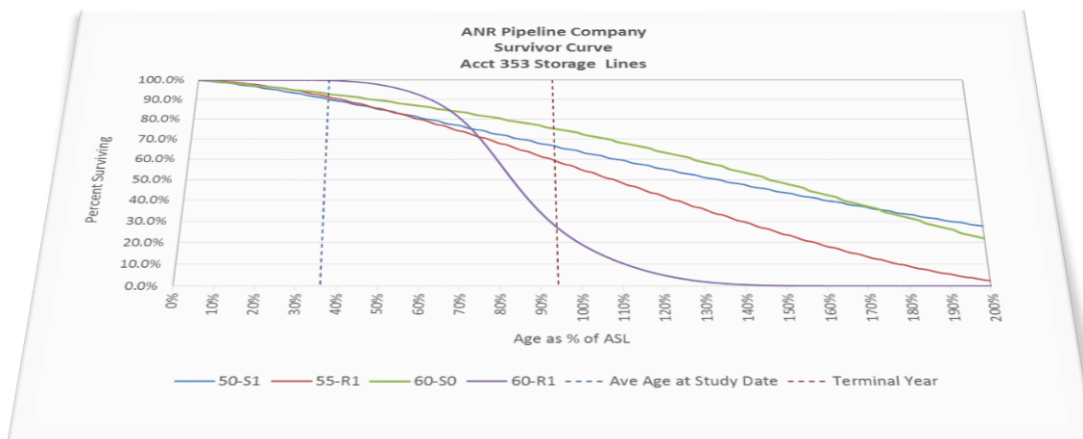
UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ANR Pipeline Company

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Docket No. RP16-____-000

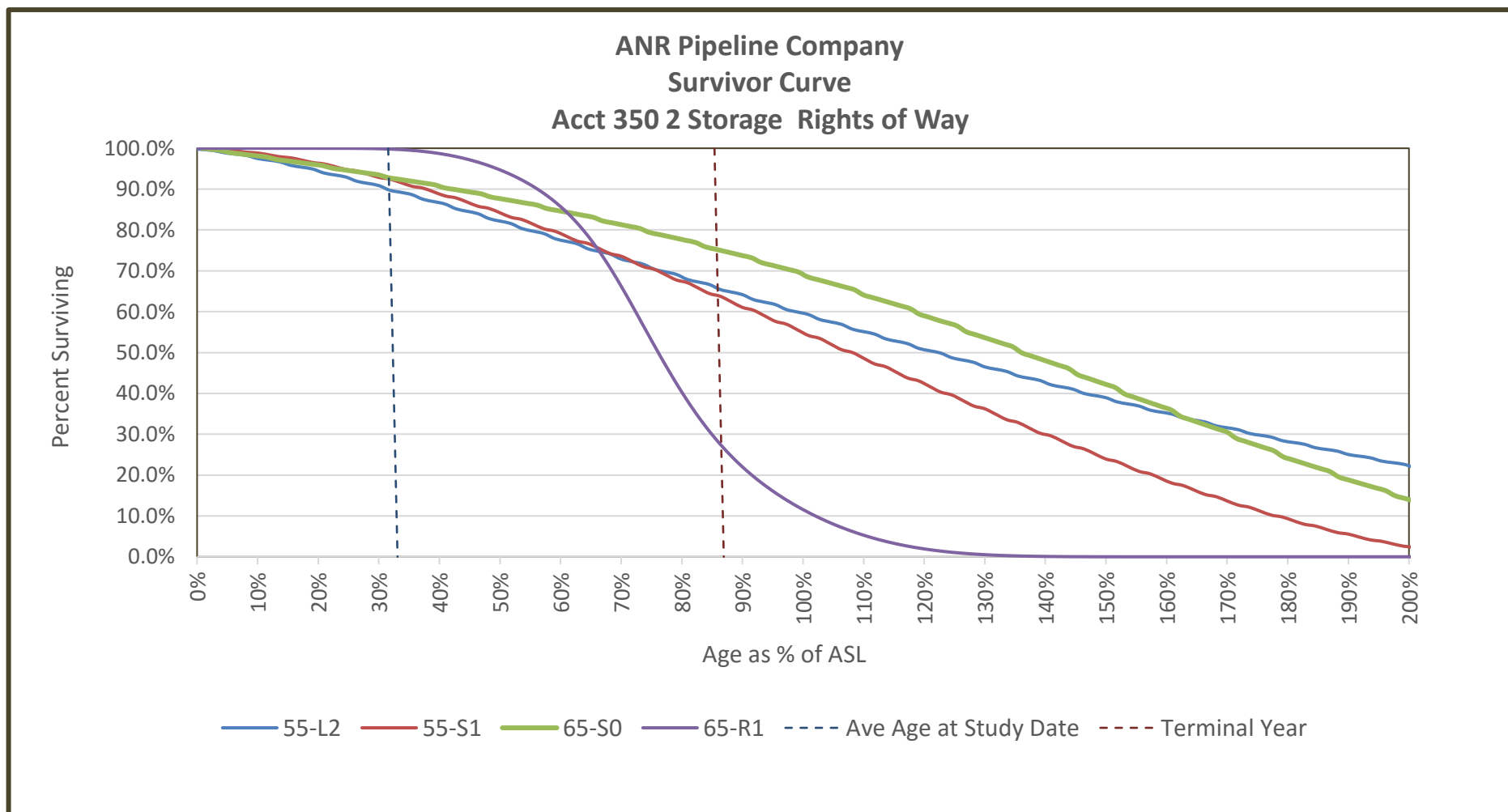
STORAGE PLANT
SURVIVOR CURVE ANALYSIS
SUPPORTING THE
PREPARED DIRECT TESTIMONY OF
PATRICK R. CROWLEY
ON BEHALF OF
ANR PIPELINE COMPANY



**ANR Pipeline Company
 Account 350 Storage Rights of Way**

Salient Statistical Results

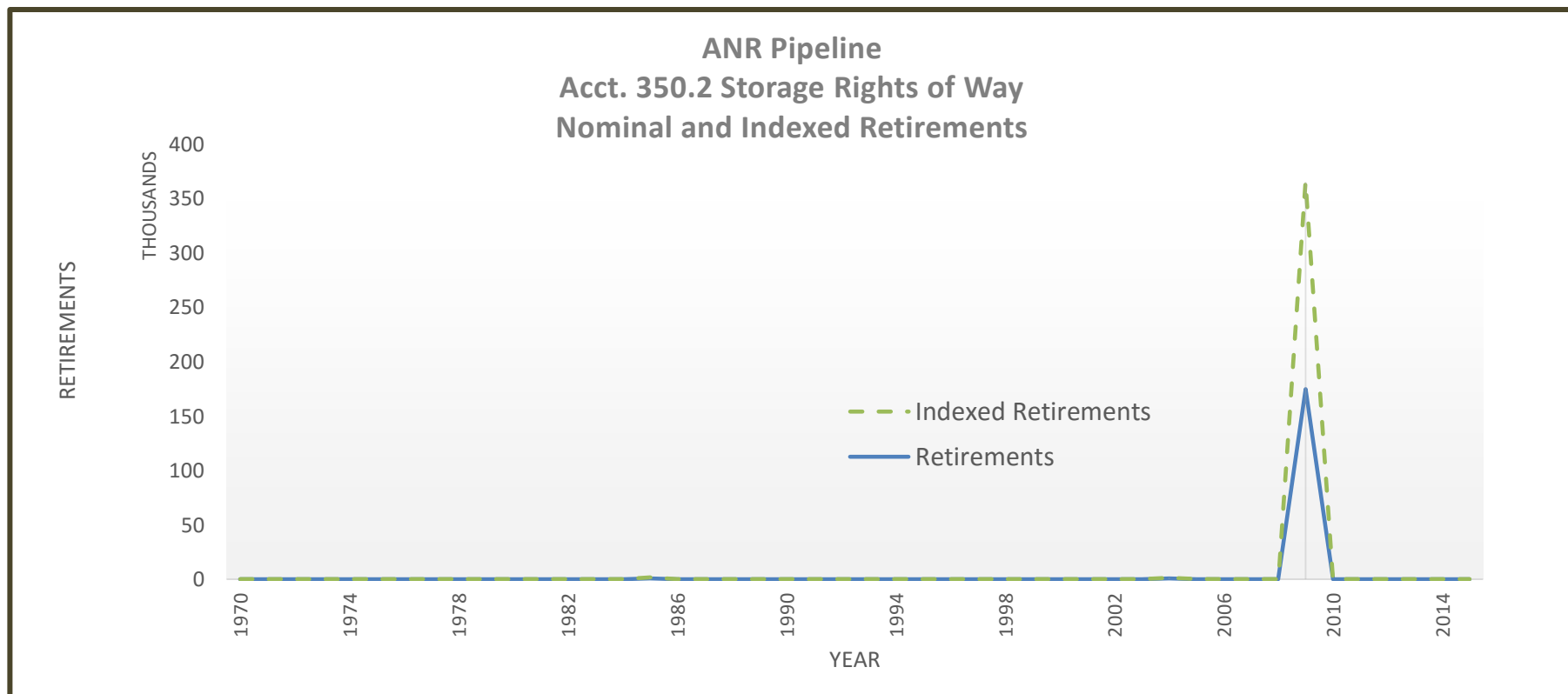
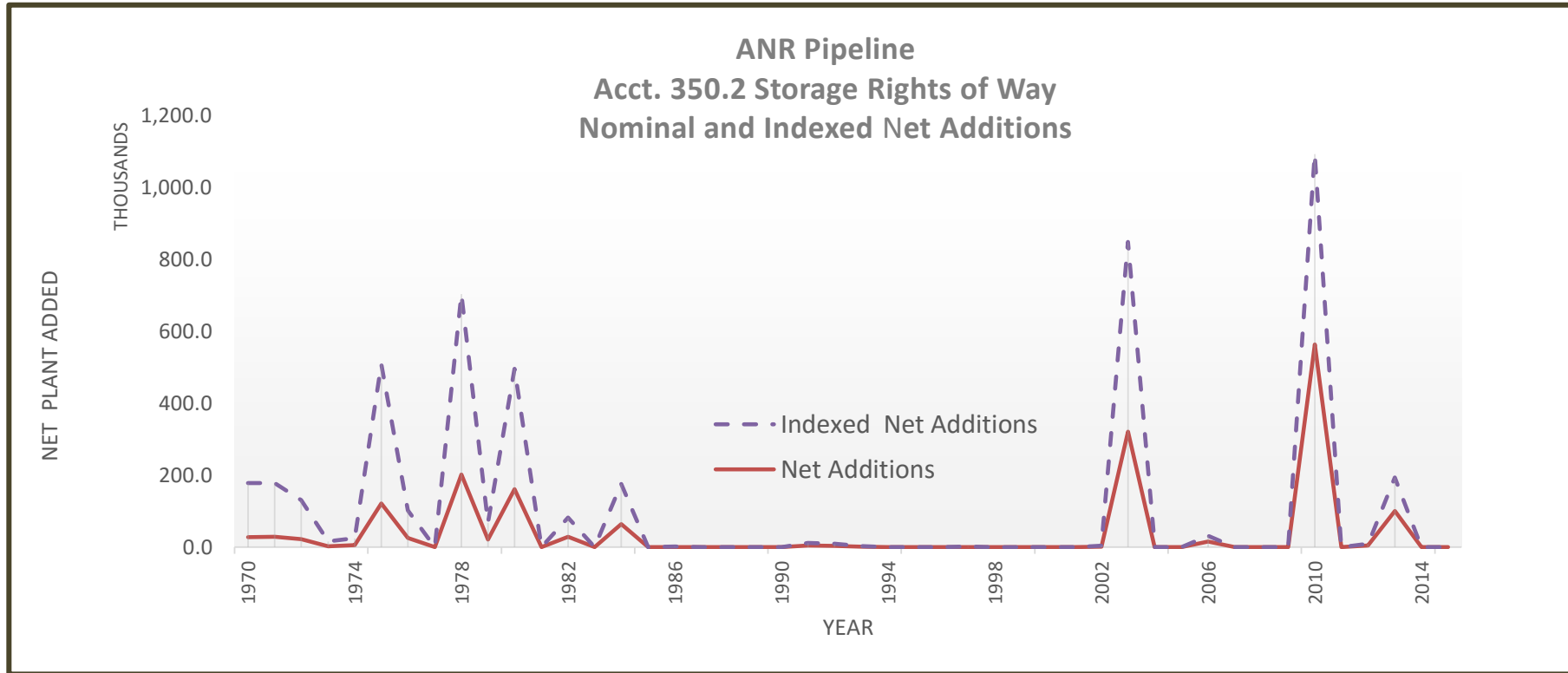
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
55-L2	27.5	55	50.0%	L2	24.37	280	564,899
55-S1	27.5	55	50.0%	S1	25.98	255	858,235
65-S0	27.5	65	42.3%	S0	28.74	490	549,973
65-R1	27.5	65	42.3%	R1	29.69	286	491,138



Account 350.2 Storage Rights of Way, includes the costs of rights-of-way agreements acquired for utility operations. The data for this account covers 1967 through 2014. ANR's Storage Rights-of-Way account has not seen significant expansion for most of its history with the exception of three years - 1980, 2003, and 2010. The history shows few retirements, with one large retirement in 2009/10 representing over 16% of the existing plant balance. The four best curves, as judged by the Conformance Indices, suggest an average physical life between 55 and 65 years old. The R1 Iowa Curve imposes an inherent steep retirement forecast that would be quite unusual for a rights-of-way account. The other three best curves have similarly sloping decline curves. I selected the 65 S0 Iowa Curve because it has the strongest Conformance index without contradicting influences. This curve results in a 29.1 year average remaining life.

**ANR Pipeline Company
 Account 350 Storage Rights of Way**

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. Start up plant additions are seen throughout the 1970s. The mid 1980s through to the mid-2000s saw little expansion but then a large spike in 2010. ANR's retirement records show almost no activity from the start up through 2009/10. The indexed average age is 27.5.

ANR Pipeline Company
Account 350 Storage Rights of Way

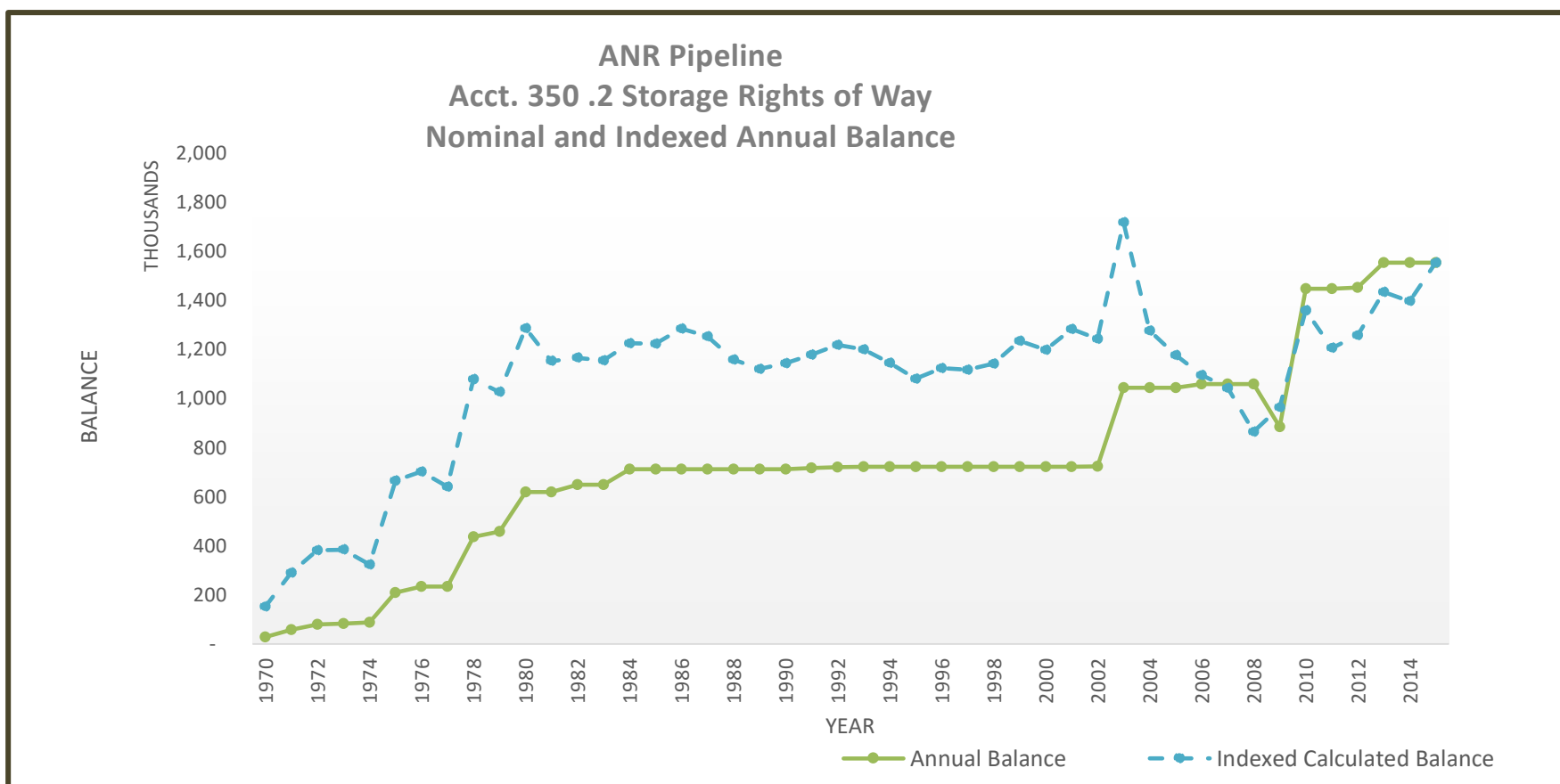
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	27,467	-	-	-	27,467	27,467	27,467
1971	29,210	-	-	-	29,210	56,677	56,677
1972	22,393	-	-	-	22,393	79,070	79,070
1973	2,811	-	-	-	2,811	81,881	81,881
1974	5,215	-	-	-	5,215	87,096	87,096
1975	121,349	-	-	-	121,349	208,445	208,445
1976	29,688	-	(4,273)	-	25,415	233,860	233,860
1977	(4,273)	-	4,273	-	-	233,860	233,860
1978	153,014	-	-	49,472	202,486	436,346	436,346
1979	34,345	-	(13,518)	-	20,827	457,173	457,173
1980	1,024,940	-	(543,554)	(320,270)	161,116	618,289	618,289
1981	(13,518)	-	13,518	-	-	618,289	618,289
1982	29,243	-	-	-	29,243	647,532	647,532
1983	(543,554)	-	543,554	-	-	647,532	647,532
1984	123,716	-	(59,151)	-	64,565	712,097	712,097
1985	-	573	-	-	-	711,524	711,524
1986	633	-	-	-	633	712,157	712,157
1987	-	-	-	-	-	712,157	712,157
1988	-	-	-	-	-	712,157	712,157
1989	-	-	-	-	-	712,157	712,157
1990	-	-	-	-	-	712,157	712,157

**ANR Pipeline Company
 Account 350 Storage Rights of Way**

Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	16,749	-	-	(12,309)	4,440	4,440	716,597
1992	3,372	-	-	-	3,372	7,812	719,969
1993	2,713	-	(1,724)	-	989	8,801	720,958
1994	-	-	-	-	-	8,801	720,958
1995	(1,724)	-	1,724	-	-	8,801	720,958
1996	-	-	(12,309)	12,309	-	8,801	720,958
1997	703	-	-	-	703	9,504	721,661
1998	42	-	-	-	42	9,546	721,703
1999	-	-	59,151	(59,151)	-	9,546	721,703
2000	(320,270)	-	-	320,270	-	9,546	721,703
2001	-	-	-	-	-	9,546	721,703
2002	1,672	-	-	-	1,672	11,218	723,375
2003	320,810	-	-	-	320,810	332,028	1,044,185
2004	-	566	-	-	-	331,462	1,043,619
2005	-	42	-	-	-	331,420	1,043,577
2006	15,258	-	-	-	15,258	346,678	1,058,835
2007	-	-	-	-	-	346,678	1,058,835
2008	-	-	-	-	-	346,678	1,058,835
2009	-	174,838	-	-	-	171,840	883,997
2010	563,598	-	-	-	563,598	735,438	1,447,595
2011	-	-	-	-	-	735,438	1,447,595
2012	4,816	-	-	-	4,816	740,254	1,452,411
2013	-	-	-	100,442	100,442	840,696	1,552,853
2014	-	-	-	-	-	840,696	1,552,853
2015	-	-	-	-	-	840,696	1,552,853
Total	1,650,418	176,019	(12,309)	90,763	1,728,872	-	-

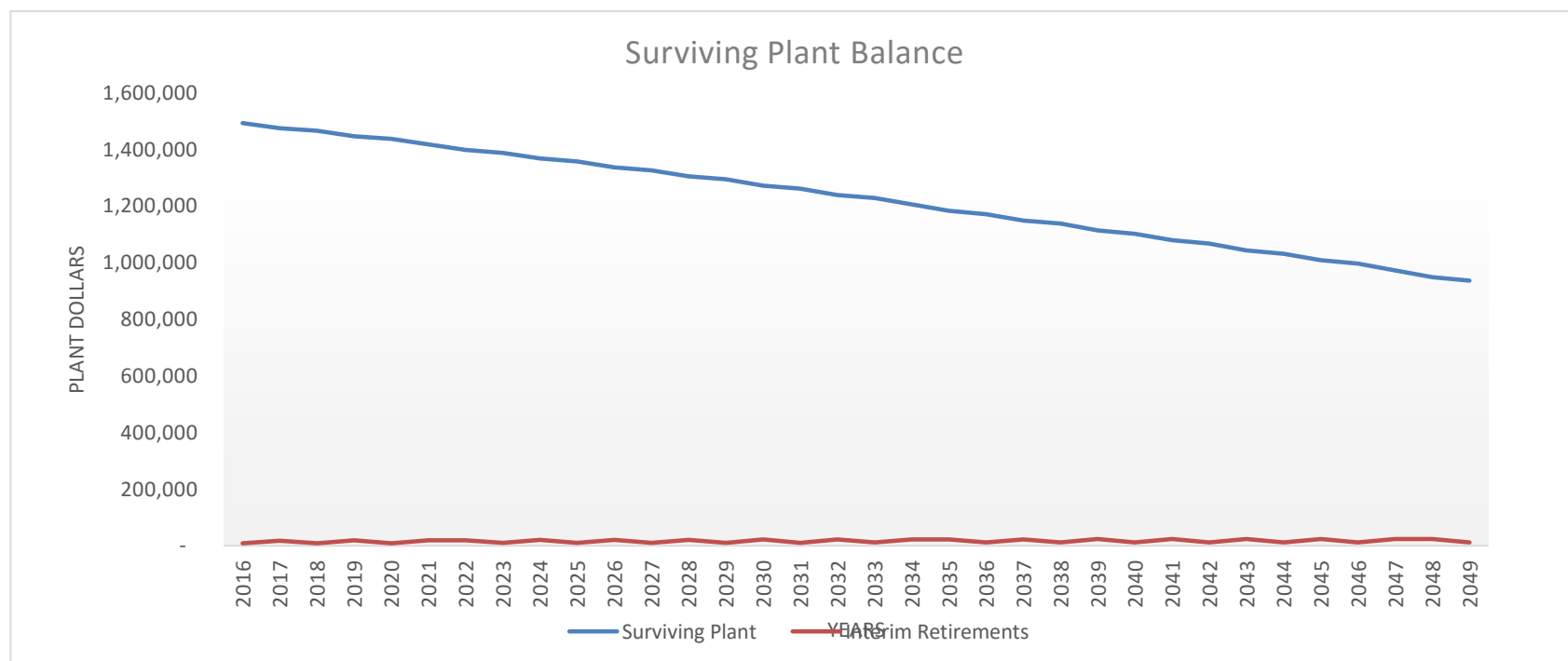


**ANR Pipeline Company
 Account 350 Storage Rights of Way**

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	65-S0		Interim Retirements
				Percent Surviving	Surviving Plant	
1	2015	27.47375978	42.3%	87%	1,501,362	
2	2016	28.47375978	43.8%	86%	1,492,462	8,900
3	2017	29.47375978	45.3%	85%	1,474,325	18,137
4	2018	30.47375978	46.9%	85%	1,465,093	9,232
5	2019	31.47375978	48.4%	84%	1,446,313	18,780
6	2020	32.47375978	50.0%	83%	1,436,770	9,543
7	2021	33.47375978	51.5%	82%	1,417,389	19,381
8	2022	34.47375978	53.0%	81%	1,397,630	19,759
9	2023	35.47375978	54.6%	80%	1,387,615	10,016
10	2024	36.47375978	56.1%	79%	1,367,322	20,293
11	2025	37.47375978	57.7%	78%	1,357,049	10,273
12	2026	38.47375978	59.2%	77%	1,336,262	20,788
13	2027	39.47375978	60.7%	77%	1,325,751	10,511
14	2028	40.47375978	62.3%	75%	1,304,506	21,245
15	2029	41.47375978	63.8%	75%	1,293,775	10,730
16	2030	42.47375978	65.3%	74%	1,272,109	21,666
17	2031	43.47375978	66.9%	73%	1,261,178	10,932
18	2032	44.47375978	68.4%	72%	1,239,127	22,051
19	2033	45.47375978	70.0%	71%	1,228,012	11,115
20	2034	46.47375978	71.5%	70%	1,205,613	22,400
21	2035	47.47375978	73.0%	68%	1,182,999	22,613
22	2036	48.47375978	74.6%	68%	1,171,618	11,382
23	2037	49.47375978	76.1%	66%	1,148,713	22,905
24	2038	50.47375978	77.7%	66%	1,137,194	11,519
25	2039	51.47375978	79.2%	64%	1,114,032	23,162
26	2040	52.47375978	80.7%	64%	1,102,393	11,639
27	2041	53.47375978	82.3%	62%	1,079,007	23,386
28	2042	54.47375978	83.8%	62%	1,067,265	11,743
29	2043	55.47375978	85.3%	60%	1,043,688	23,576
30	2044	56.47375978	86.9%	60%	1,031,859	11,830
31	2045	57.47375978	88.4%	58%	1,008,125	23,734
32	2046	58.47375978	90.0%	58%	996,225	11,900
33	2047	59.47375978	91.5%	56%	972,367	23,858
34	2048	60.47375978	93.0%	55%	948,444	23,923
35	2049	61.47375978	94.6%	54%	936,462	11,981
					43,150,055	

Interim Retirements **564,899**
 Average Remaining Life **28.74** Interim Retirements



**ANR Pipeline Company
 Account 350 Storage Rights of Way**

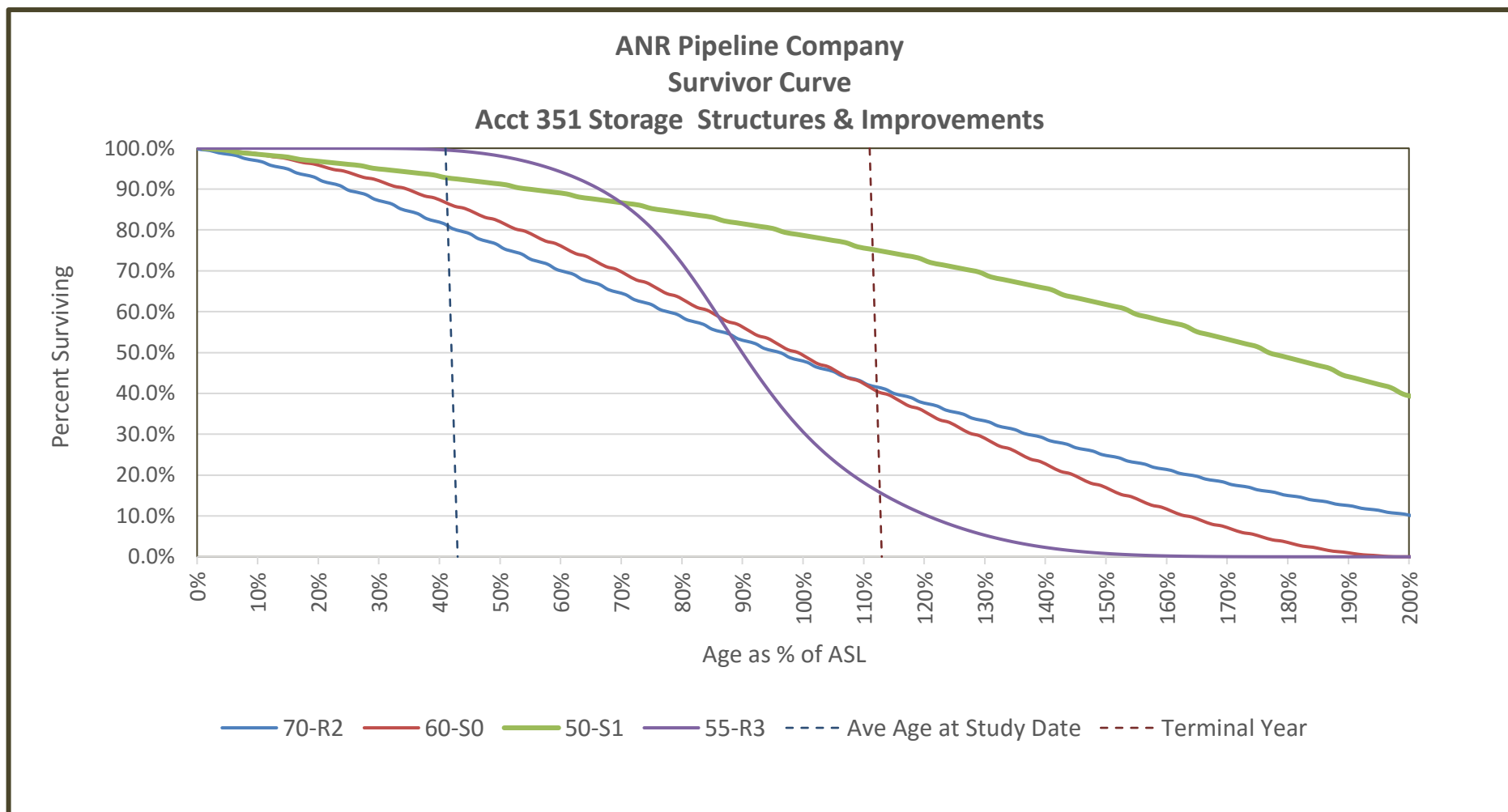
Conformance Indices

Curve	ASLs						
	50	55	60	65	70	75	80
L0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
L1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
L2	30.6	279.8	47.2	24.7	18.0	15.0	13.4
L3	118.1	25.2	16.1	12.9	11.5	10.7	10.2
L4	19.2	13.2	11.1	10.1	9.6	9.3	9.1
L5	12.1	10.0	9.3	9.0	8.9	8.8	8.8
S0	18.7	31.1	75.1	489.8	64.6	38.8	29.0
S1	51.0	254.5	42.3	25.5	19.4	16.3	14.5
S2	99.8	28.1	18.1	14.3	12.4	11.4	10.7
S3	26.1	15.6	12.2	10.8	10.0	9.6	9.3
S4	13.7	10.7	9.6	9.1	9.0	8.9	8.9
S5	10.2	9.1	8.9	8.8	8.8	8.8	8.8
S6	9.1	8.8	8.8	8.8	8.8	8.8	8.8
R1	18.8	29.7	60.3	286.2	120.7	59.8	40.8
R2	94.5	100.8	38.0	25.7	20.4	17.7	16.0
R3	37.4	21.2	16.1	13.7	12.4	11.6	11.1
R4	18.2	13.5	11.5	10.5	10.0	9.6	9.4
R5	11.5	9.8	9.2	9.0	8.9	8.9	8.8
MAX	118	280	75	490	121	60	41

ANR Pipeline Company Account 351 Storage Structures & Improvements

Salient Statistical Results

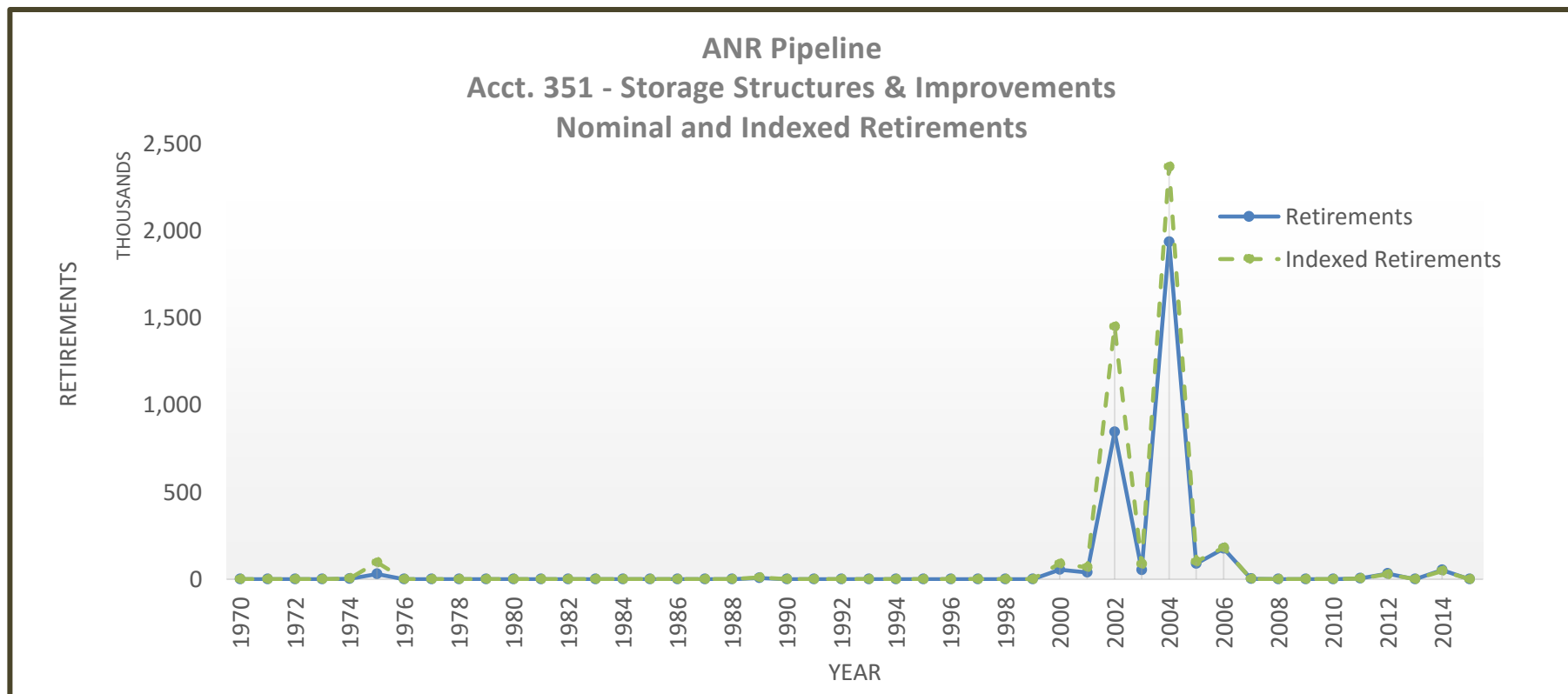
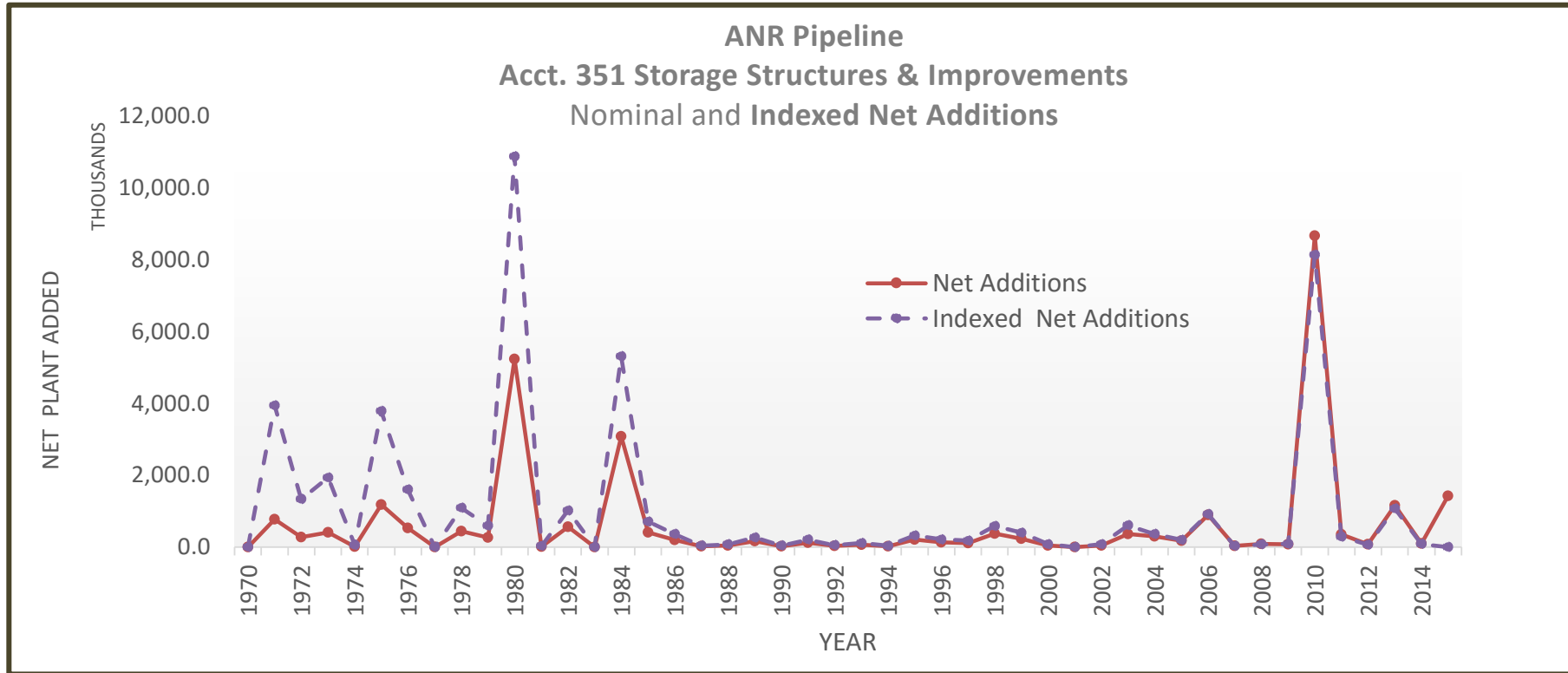
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
70-R2	28.4	70	40.6%	R2	30.62	694	7,953,223
60-S0	28.4	60	47.4%	S0	27.64	401	10,290,336
50-S1	28.4	50	56.9%	S1	23.90	138	15,800,315
55-R3	28.4	55	51.7%	R3	26.68	112	16,794,855



Account 351, Storage Structures and Improvements, includes the buildings, garages, access roads, fencing, garage doors, cabinets, lighting systems, sheds, and other housing material in which storage operating equipment is housed as well as improvements to the structures over time. ANR's Storage Structures & Improvements account had a very long period of plant additions with almost no retirements from 1970 through 2000. There was a cluster of large retirements from 2000 to 2007 but they were minor in comparison to the total balance. Using the 70-R2 Iowa Curve, which has a strong Conformance Index and should providing a good indicator of future interim retirements. Using this curve forecasts \$7.9 million in interim retirements that, in turn, produce an average remaining life of 30.6 years over the remaining economic life of 35 years.

**ANR Pipeline Company
 Account 351 Storage Structures & Improvements**

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. Start up plant additions are seen throughout the 1970s with a major addition in 1980 and 1985. The mid 1980s through to the mid-2000s saw little expansion but then a large spike in 2010. ANR's retirement records show almost no activity from the start up through 2000. The indexed average age of the account is 28.4, which when applied to the survivor curve indicates an annual level of retirements in the area of \$300,000.

**ANR Pipeline Company
 Account 351 Storage Structures & Improvements**

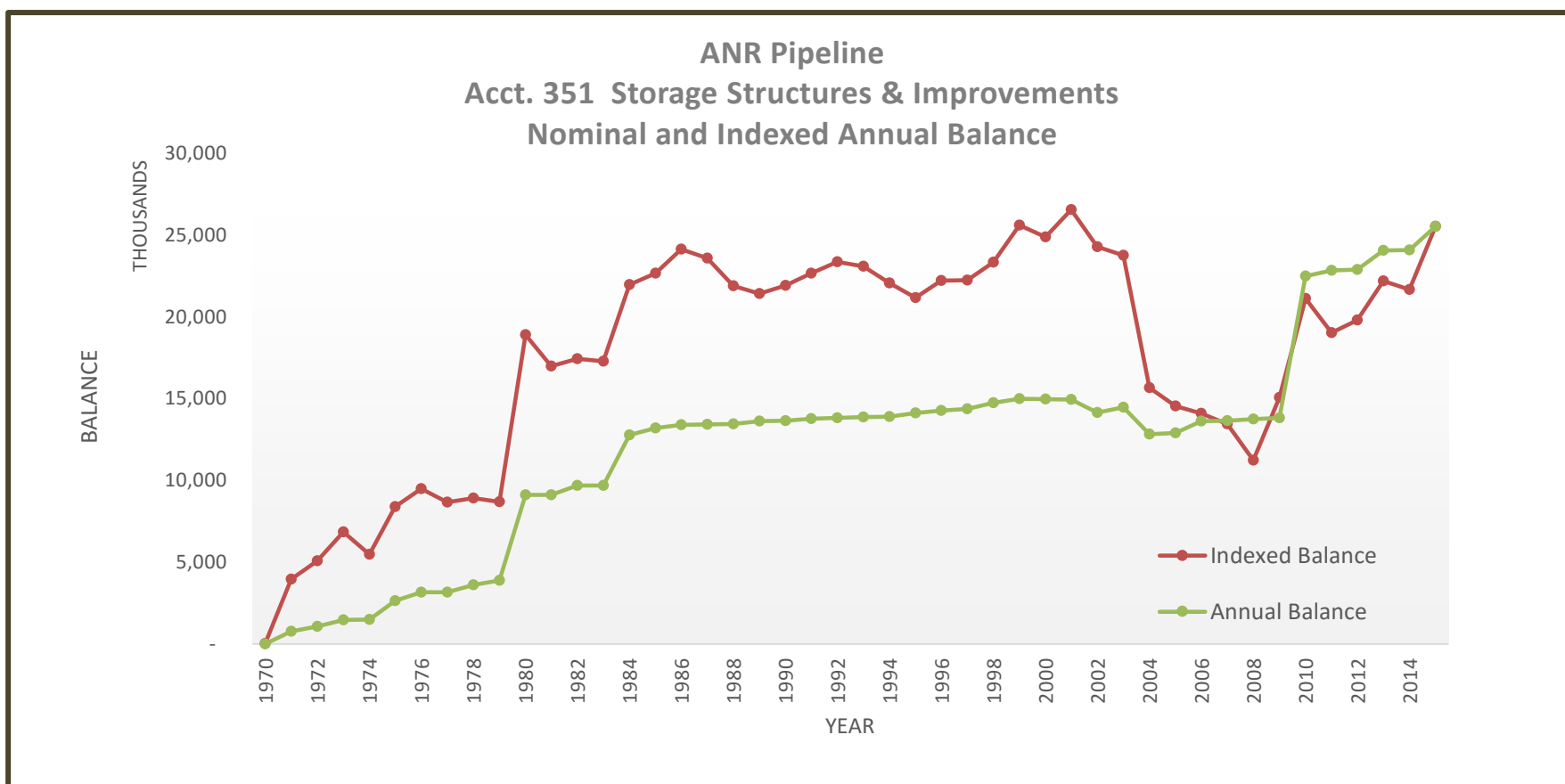
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	324	-	-	-	324	324	324
1971	770,698	-	-	-	770,698	771,022	771,022
1972	276,635	-	-	-	276,635	1,047,657	1,047,657
1973	412,053	-	-	-	412,053	1,459,710	1,459,710
1974	15,887	760	-	-	15,887	1,474,837	1,474,837
1975	1,751,910	30,079	(597,213)	29,634	1,184,331	2,629,089	3,226,302
1976	532,237	-	-	-	532,237	3,161,326	3,758,539
1977	(597,213)	-	597,213	-	-	3,161,326	3,161,326
1978	440,435	-	-	-	440,435	3,601,761	3,601,761
1979	263,926	-	-	-	263,926	3,865,687	3,865,687
1980	5,838,833	-	(612,714)	-	5,226,119	9,091,806	9,704,520
1981	17,877	-	-	-	17,877	9,109,683	9,722,397
1982	567,267	-	-	-	567,267	9,676,950	10,289,664
1983	(612,714)	-	612,714	3,312	3,312	9,680,262	9,680,262
1984	3,082,805	-	-	-	3,082,805	12,763,067	12,763,067
1985	413,953	-	-	-	413,953	13,177,020	13,177,020
1986	200,157	-	-	-	200,157	13,377,177	13,377,177
1987	23,404	-	-	-	23,404	13,400,581	13,400,581
1988	45,720	-	-	-	45,720	13,446,301	13,446,301
1989	172,580	5,723	-	-	172,580	13,613,158	13,613,158
1990	27,376	-	-	-	27,376	13,640,534	13,640,534

**ANR Pipeline Company
 Account 351 Storage Structures & Improvements**

Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	128,179	-	-	-	128,179	13,768,713	13,768,713
1992	31,387	-	-	-	31,387	13,800,100	13,800,100
1993	69,220	-	-	-	69,220	13,869,320	13,869,320
1994	25,307	-	-	-	25,307	13,894,627	13,894,627
1995	216,822	-	-	-	216,822	14,111,449	14,111,449
1996	138,099	-	-	-	138,099	14,249,548	14,249,548
1997	647,098	-	(530,913)	-	116,185	14,365,733	14,896,646
1998	371,529	-	-	-	371,529	14,737,262	15,268,175
1999	234,840	-	530,913	(530,913)	234,840	14,972,102	14,972,102
2000	47,939	53,791	-	-	47,939	14,966,250	14,966,250
2001	-	37,614	-	-	-	14,928,636	14,928,636
2002	46,774	844,874	-	-	46,774	14,130,536	14,130,536
2003	369,672	52,493	-	-	369,672	14,447,715	14,447,715
2004	297,745	1,938,045	-	-	297,745	12,807,415	12,807,415
2005	181,030	89,620	-	-	181,030	12,898,825	12,898,825
2006	890,583	175,104	-	-	890,583	13,614,304	13,614,304
2007	24,588	1,698	-	6,898	31,486	13,644,092	13,644,092
2008	92,018	-	-	-	92,018	13,736,110	13,736,110
2009	84,103	-	-	-	84,103	13,820,213	13,820,213
2010	7,574,942	-	-	1,080,877	8,655,819	22,476,032	22,476,032
2011	351,138	4,816	-	-	351,138	22,822,354	22,822,354
2012	77,356	31,533	-	-	77,356	22,868,177	22,868,177
2013	378,715	-	-	785,406	1,164,121	24,032,298	24,032,298
2014	99,475	51,905	-	-	99,475	24,079,868	24,079,868
2015	1,426,914	-	-	-	1,426,914	25,506,782	25,506,782
Total	27,449,623	3,318,055	-	1,375,214	28,824,837	-	-
		17,650.80					

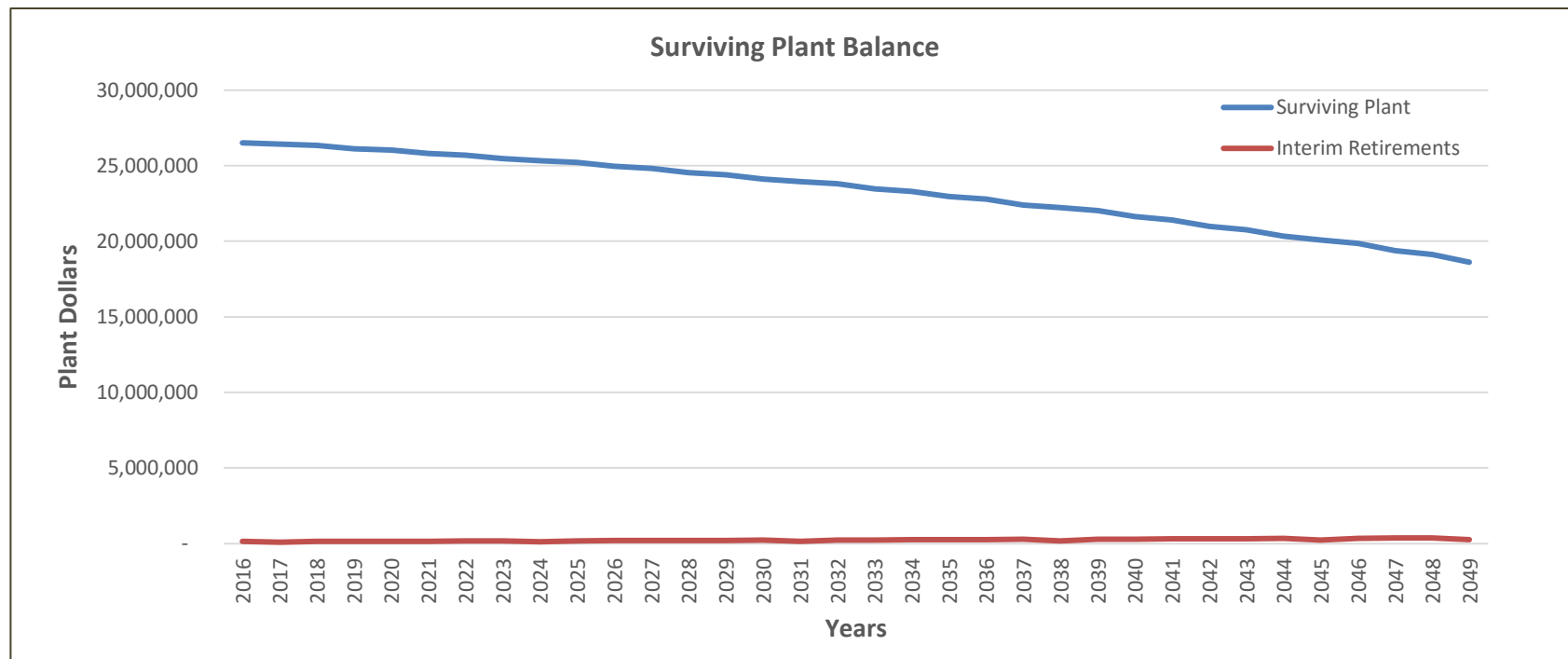


**ANR Pipeline Company
 Account 351 Storage Structures & Improvements**

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	70-R2		Interim Retirements
				Percent Surviving	Surviving Plant	
1	2015	28.4	40.6%	93%	26,700,572	
2	2016	29.4	42.1%	92%	26,518,631	138,251
3	2017	30.4	43.5%	92%	26,424,069	95,791
4	2018	31.4	44.9%	91%	26,327,049	149,316
5	2019	32.4	46.4%	91%	26,125,438	153,150
6	2020	33.4	47.8%	90%	26,020,749	161,043
7	2021	34.4	49.2%	90%	25,803,351	165,104
8	2022	35.4	50.6%	89%	25,690,541	173,455
9	2023	36.4	52.1%	88%	25,456,441	177,747
10	2024	37.4	53.5%	88%	25,335,047	122,877
11	2025	38.4	54.9%	87%	25,210,687	191,095
12	2026	39.4	56.4%	87%	24,952,858	195,702
13	2027	40.4	57.8%	86%	24,819,282	205,156
14	2028	41.4	59.2%	85%	24,542,546	210,002
15	2029	42.4	60.6%	85%	24,399,279	219,930
16	2030	43.4	62.1%	84%	24,102,685	225,012
17	2031	44.4	63.5%	83%	23,949,255	155,176
18	2032	45.4	64.9%	83%	23,792,334	240,717
19	2033	46.4	66.4%	81%	23,467,821	246,102
20	2034	47.4	67.8%	81%	23,300,131	257,086
21	2035	48.4	69.2%	80%	22,953,649	262,681
22	2036	49.4	70.6%	79%	22,774,768	274,067
23	2037	50.4	72.1%	78%	22,405,515	279,852
24	2038	51.4	73.5%	77%	22,215,065	192,415
25	2039	52.4	74.9%	76%	22,020,684	297,529
26	2040	53.4	76.4%	75%	21,620,006	303,516
27	2041	54.4	77.8%	74%	21,413,652	315,602
28	2042	55.4	79.2%	73%	20,988,802	321,690
29	2043	56.4	80.6%	72%	20,770,272	333,924
30	2044	57.4	82.1%	70%	20,320,953	340,057
31	2045	58.4	83.5%	70%	20,090,158	232,837
32	2046	59.4	84.9%	69%	19,855,279	358,421
33	2047	60.4	86.4%	67%	19,373,317	364,502
34	2048	61.4	87.8%	66%	19,126,275	376,546
35	2049	62.44668287	89.2%	65%	18,620,224	253,025
					817,487,385	

Interim Retirements 7,989,378
Average Remaining Life 30.62 Interim Retirements



**ANR Pipeline Company
 Account 351 Storage Structures & Improvements**

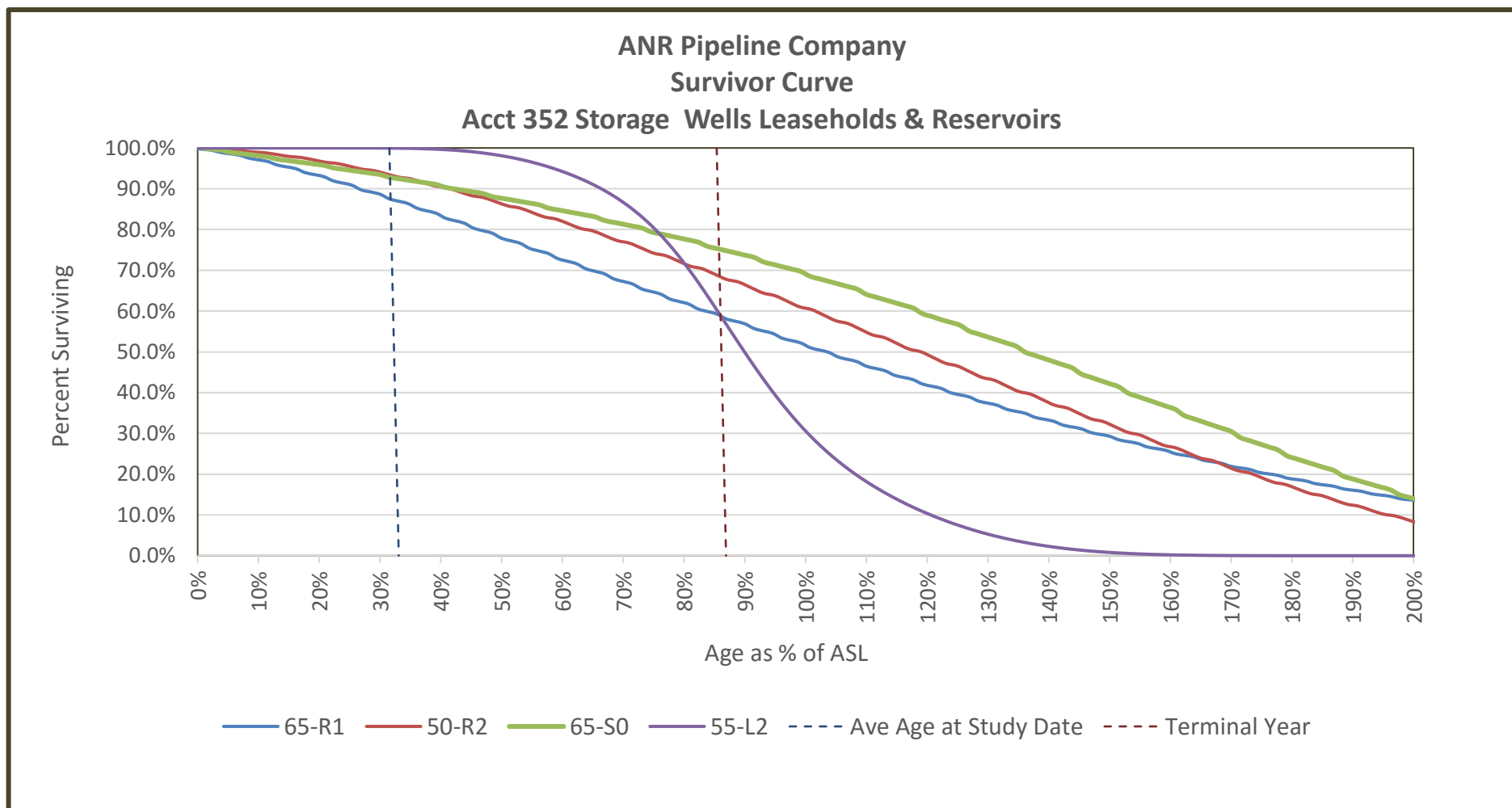
Conformance Indices

Curve	ASLs							
	50	55	60	65	70	75	80	
L0	1.3	1.3	1.3	1.2	1.2	1.2	1.2	
L1	1.3	1.2	1.2	1.2	1.1	1.1	1.1	
L2	54.5	80.5	26.7	17.4	13.8	12.0	11.0	
L3	33.6	16.6	12.3	10.5	9.5	9.0	8.7	
L4	13.4	10.4	9.2	8.5	8.2	8.0	7.9	
L5	9.5	8.4	7.9	7.8	7.7	7.7	7.7	
S0	22.6	45.9	401.2	70.8	35.7	26.1	21.1	
S1	138.4	57.2	26.6	18.5	14.9	13.1	11.9	
S2	36.2	18.7	13.7	11.4	10.2	9.5	9.0	
S3	16.5	11.8	9.9	9.0	8.5	8.2	8.0	
S4	10.4	8.8	8.1	7.9	7.8	7.7	7.7	
S5	15.9	14.0	13.5	13.4	13.4	13.4	13.4	
S6	13.9	13.4	13.4	13.4	13.4	13.4	13.4	
R1	10.3	13.0	16.8	21.9	29.6	39.5	57.3	
R2	19.4	32.5	69.0	694.1	113.7	62.2	45.1	
R3	88.9	111.8	42.7	29.3	23.8	21.1	19.4	
R4	50.5	26.2	20.1	17.4	16.0	15.2	14.8	
R5	18.8	15.3	14.2	13.7	13.5	13.4	13.4	
MAX	138	112	401	694	114	62	57	

**ANR Pipeline Company
 Account 352 Storage Wells, Leaseholds, and Reservoirs**

Salient Statistical Results

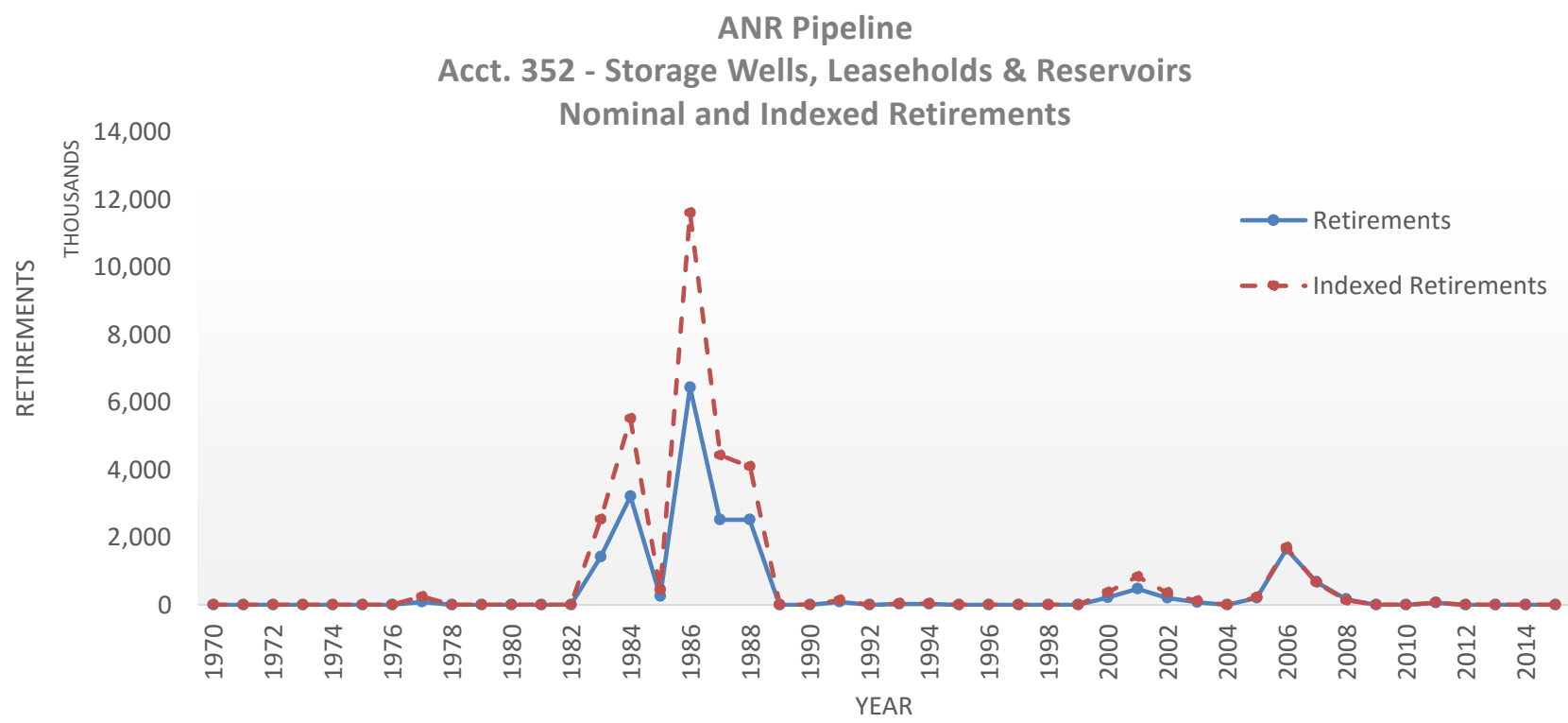
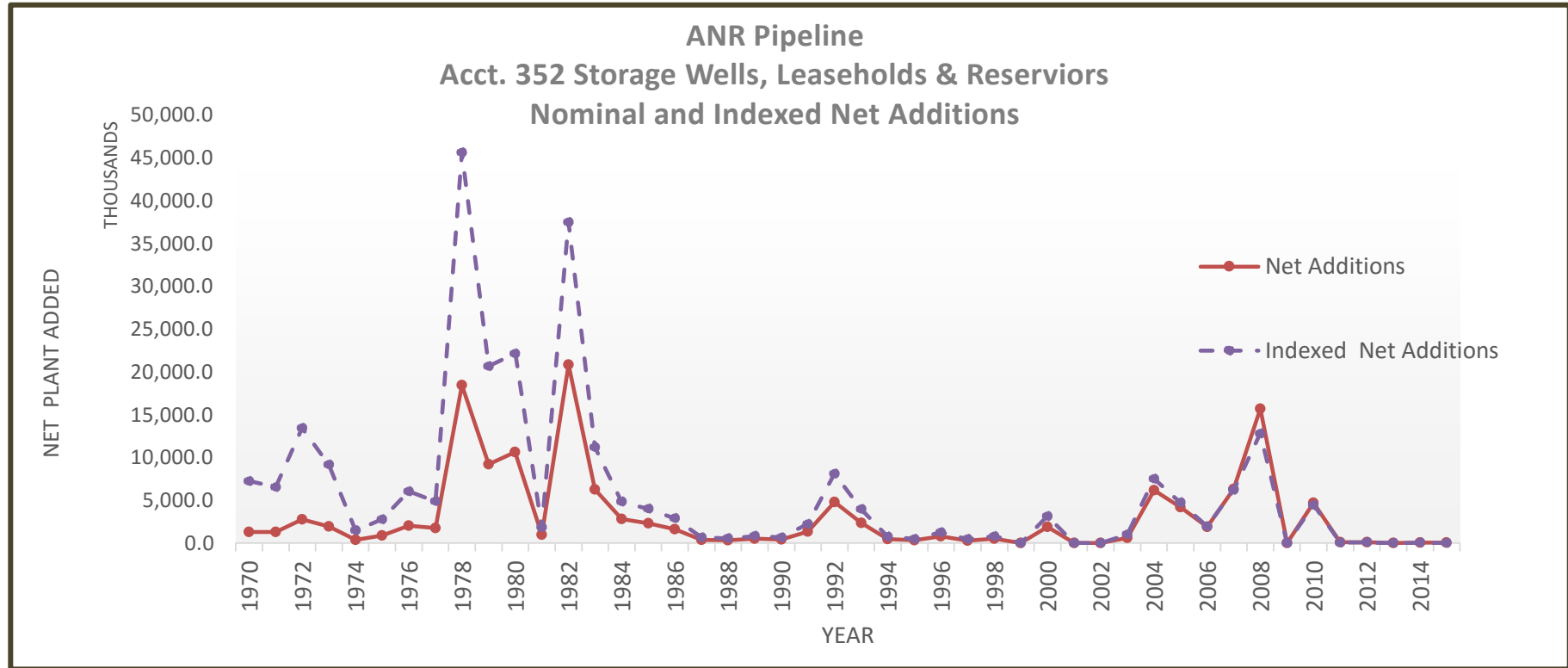
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
65-R1	31.5	65	48.5%	R1	29.10	207	42,809,475
50-R2	31.5	50	63.1%	R2	23.23	251	82,988,766
65-S0	31.5	65	48.5%	S0	28.17	121	45,844,316
55-L2	31.5	55	57.4%	L2	23.23	146	74,676,515



Account 352 is made up of three subaccounts: 352.0 Wells, 352.1 Leaseholds, and 352.2 Reservoirs. The account includes the costs of drilling wells, christmas trees, deeds and leases, and mineral rights. In this account there are a number of large retirements that are somewhat clustered around 1986 and 2006. The Conformance Index for the 65-R1 curve indicates a good match with the original data. Using the 65 R1 curve forecasts interim retirements that, in turn, produce an average remaining life of 29 years over the remaining economic life of 35 years.

ANR Pipeline Company
Account 352 Storage Wells, Leaseholds, and Reservoirs

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. Substantial start up plant additions are seen throughout the 1970s and 80s with a major addition in the mid 2000s. ANRs retirement records show a major retirement project in the mid 1980s. The indexed average age is 31.5.

**ANR Pipeline Company
 Account 352 Storage Wells, Leaseholds, and Reservoirs**

Plant Balances

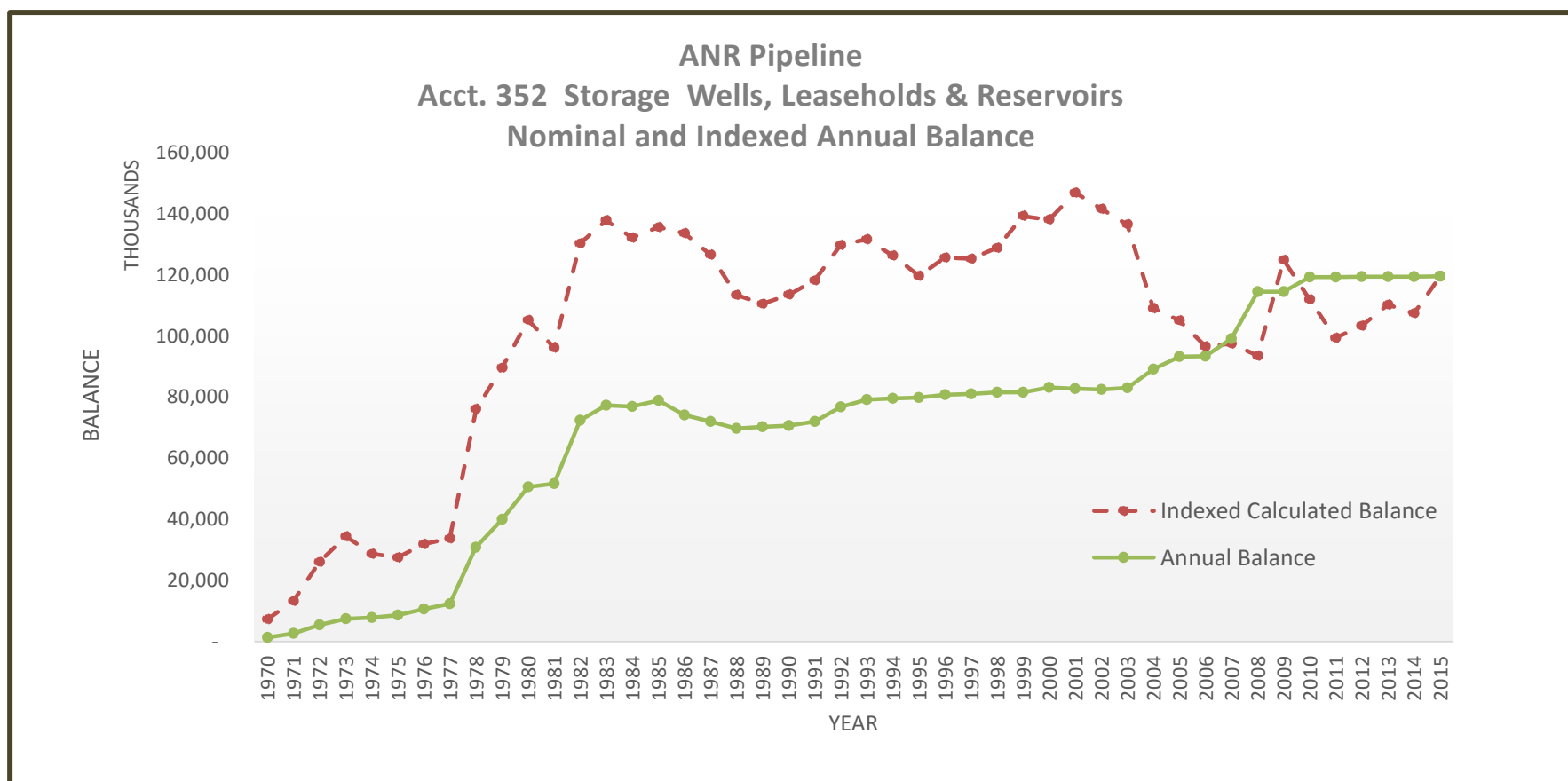
Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	1,315,898	-	-	-	1,315,898	1,315,898	1,315,898
1971	1,276,926	-	-	-	1,276,926	2,592,824	2,592,824
1972	2,782,898	-	-	-	2,782,898	5,375,722	5,375,722
1973	1,949,125	-	-	-	1,949,125	7,324,847	7,324,847
1974	396,705	-	-	-	396,705	7,721,552	7,721,552
1975	170,366	-	-	702,235	872,601	8,594,153	8,594,153
1976	2,016,048	-	-	-	2,016,048	10,610,201	10,610,201
1977	1,777,066	89,853	-	-	1,777,066	12,297,414	12,297,414
1978	18,425,941	-	-	-	18,425,941	30,723,355	30,723,355
1979	9,194,964	-	-	-	9,194,964	39,918,319	39,918,319
1980	10,637,239	-	-	-	10,637,239	50,555,558	50,555,558
1981	987,741	-	-	-	987,741	51,543,299	51,543,299
1982	20,805,981	-	-	-	20,805,981	72,349,280	72,349,280
1983	6,316,229	1,418,874	-	(51,000)	6,265,229	77,195,635	77,195,635
1984	2,719,873	3,205,622	-	83,148	2,803,021	76,793,034	76,793,034
1985	2,318,239	258,175	-	-	2,318,239	78,853,098	78,853,098
1986	1,598,397	6,437,472	-	-	1,598,397	74,014,023	74,014,023
1987	378,590	2,515,854	-	-	378,590	71,876,759	71,876,759
1988	332,604	2,515,853	-	-	332,604	69,693,510	69,693,510
1989	519,456	-	-	-	519,456	70,212,966	70,212,966
1990	417,833	1,605	-	-	417,833	70,629,194	70,629,194

**ANR Pipeline Company
 Account 352 Storage Wells, Leaseholds, and Reservoirs**

Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	6,384,582	82,099	(5,037,967)	-	1,346,615	1,264,516	76,931,677
1992	4,796,513	-	-	-	4,796,513	6,061,029	81,728,190
1993	2,373,127	17,104	-	-	2,373,127	8,417,052	84,084,213
1994	480,740	21,155	-	-	480,740	8,876,637	84,543,798
1995	314,488	-	-	-	314,488	9,191,125	84,858,286
1996	802,513	-	(316)	-	802,197	9,993,322	85,660,483
1997	292,300	-	-	-	292,300	10,285,622	85,952,783
1998	505,042	-	-	-	505,042	10,790,664	86,457,825
1999	2,331,920	-	5,037,967	(7,369,887)	-	10,790,664	81,419,858
2000	2,768,564	219,467	(877,413)	-	1,891,151	12,462,348	83,968,955
2001	-	468,324	-	-	-	11,994,024	83,500,631
2002	(877,413)	204,189	877,413	-	-	11,789,835	82,419,029
2003	616,841	66,766	-	-	616,841	12,339,910	82,969,104
2004	6,145,712	-	-	-	6,145,712	18,485,622	57,184,013
2005	4,186,279	198,523	-	-	4,186,279	22,473,378	61,171,769
2006	1,876,396	1,643,282	-	-	1,876,396	22,706,492	61,404,883
2007	6,306,575	671,530	-	6,726	6,313,301	28,348,263	67,046,654
2008	15,991,302	157,175	(328,997)	-	15,662,305	43,853,393	82,880,781
2009	(328,997)	159	328,997	-	-	43,853,234	82,551,625
2010	4,732,230	-	-	(28,582)	4,703,648	48,556,882	87,255,273
2011	78,095	65,019	-	-	78,095	48,569,958	87,268,349
2012	112,098	-	-	-	112,098	48,682,056	87,380,447
2013	1,479	-	-	-	1,479	48,683,535	87,381,926
2014	39,248	-	-	-	39,248	48,722,783	87,421,174
2015	54,244	-	-	-	54,244	48,777,027	87,475,418
Total	146,321,997	20,258,100	(316)	(6,657,360)	139,664,321	-	-

13,004

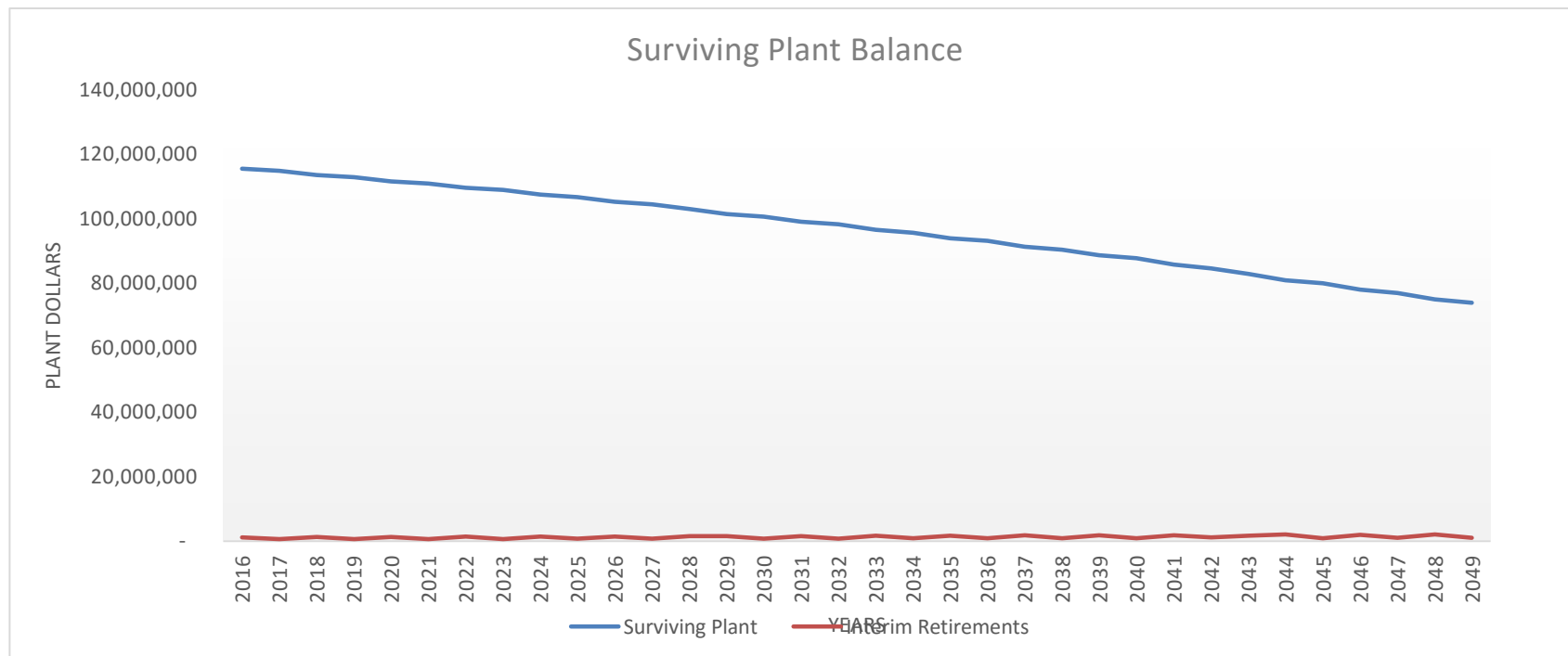


**ANR Pipeline Company
 Account 352 Storage Wells, Leaseholds, and Reservoirs**

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	65-R1		Interim Retirements
				Percent Surviving	Surviving Plant	
1	2015	31.5	48.5%	84%	116,685,183	
2	2016	32.5	50.1%	83%	115,454,042	1,231,141
3	2017	33.5	51.6%	82%	114,827,871	626,171
4	2018	34.5	53.1%	81%	113,553,629	1,274,241
5	2019	35.5	54.7%	81%	112,905,307	648,322
6	2020	36.5	56.2%	80%	111,585,577	1,319,730
7	2021	37.5	57.8%	79%	110,913,932	671,646
8	2022	38.5	59.3%	78%	109,546,492	1,367,439
9	2023	39.5	60.8%	78%	108,850,475	696,017
10	2024	40.5	62.4%	77%	107,433,343	1,417,132
11	2025	41.5	63.9%	76%	106,712,033	721,310
12	2026	42.5	65.5%	75%	105,243,532	1,468,501
13	2027	43.5	67.0%	75%	104,496,175	747,358
14	2028	44.5	68.5%	74%	102,974,923	1,521,252
15	2029	45.5	70.1%	73%	101,417,931	1,556,992
16	2030	46.5	71.6%	72%	100,625,923	792,008
17	2031	47.5	73.1%	71%	99,014,769	1,611,154
18	2032	48.5	74.7%	70%	98,195,568	819,201
19	2033	49.5	76.2%	69%	96,529,931	1,665,637
20	2034	50.5	77.8%	69%	95,683,510	846,422
21	2035	51.5	79.3%	67%	93,963,543	1,719,966
22	2036	52.5	80.8%	67%	93,090,069	873,475
23	2037	53.5	82.4%	65%	91,316,374	1,773,695
24	2038	54.5	83.9%	65%	90,416,279	900,095
25	2039	55.5	85.5%	63%	88,589,973	1,826,307
26	2040	56.5	87.0%	63%	87,663,942	926,030
27	2041	57.5	88.5%	61%	85,786,616	1,877,326
28	2042	58.5	90.1%	61%	84,576,663	1,209,954
29	2043	59.5	91.6%	59%	82,909,308	1,667,355
30	2044	60.5	93.1%	58%	80,860,300	2,049,008
31	2045	61.5	94.7%	57%	79,961,874	898,426
32	2046	62.5	96.2%	56%	77,960,191	2,001,683
33	2047	63.5	97.8%	55%	76,948,896	1,011,295
34	2048	64.5	99.3%	54%	74,906,431	2,042,465
35	2049	65.5	100.8%	53%	73,875,708	1,030,723
					3,395,476,312	

Interim Retirements **42,809,475**
Average Remaining Life **29.10 Interim Retirements**



**ANR Pipeline Company
 Account 352 Storage Wells, Leaseholds, and Reservoirs**

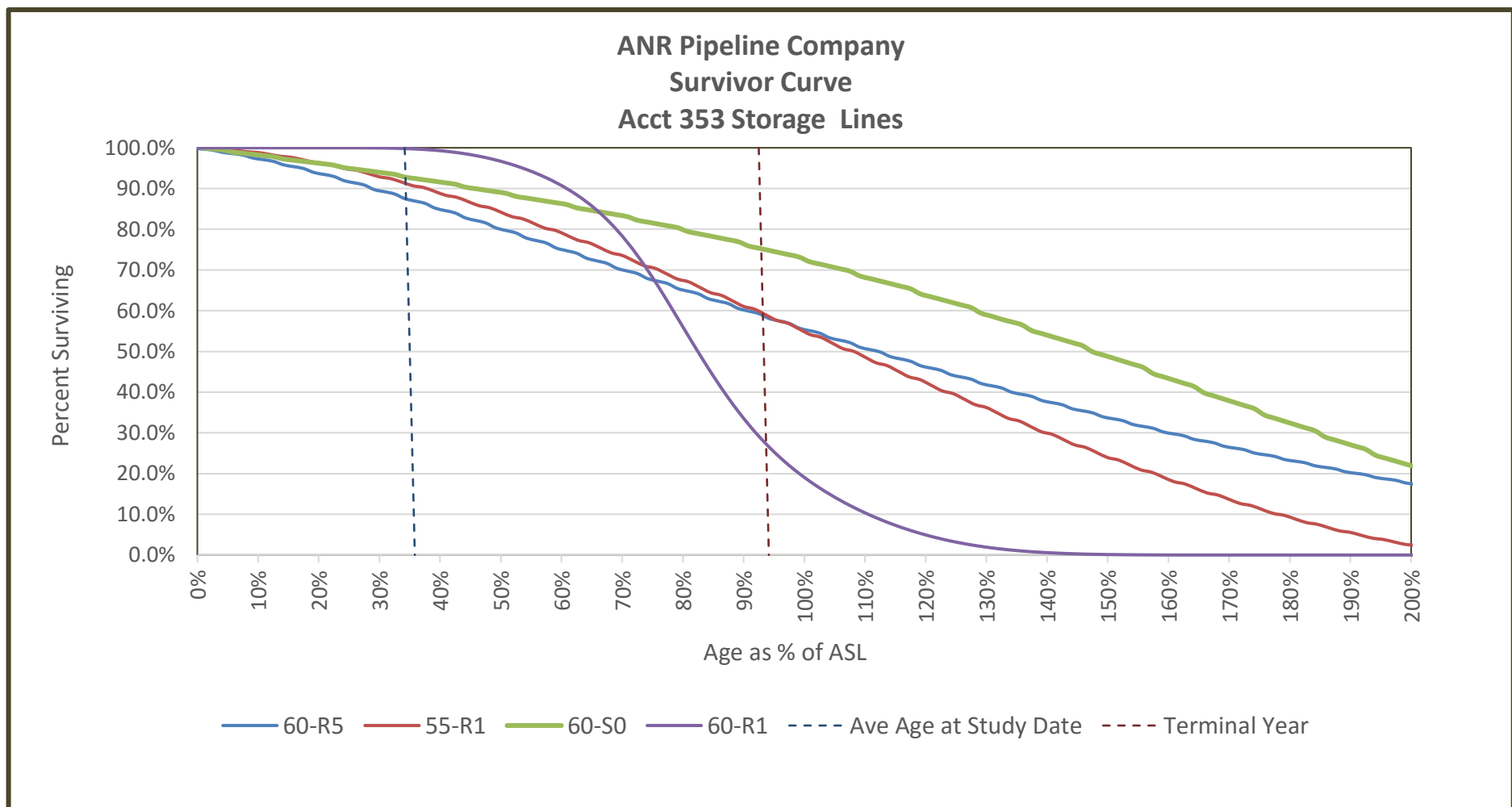
Conformance Indices

Curve	ASLs						
	50	55	60	65	70	75	80
L0	34.5	15.9	10.9	8.7	7.4	6.5	5.9
L1	11.4	8.1	6.4	5.5	4.9	4.5	4.2
L2	27.6	146.1	23.4	14.4	11.1	9.5	8.6
L3	30.2	13.4	9.6	8.1	7.4	7.0	6.7
L4	10.4	8.0	7.0	6.5	6.3	6.1	6.0
L5	7.2	6.4	6.1	6.0	5.9	5.9	5.9
S0	13.8	24.2	71.2	120.9	37.5	23.8	18.2
S1	46.9	75.9	23.8	15.6	12.3	10.5	9.4
S2	34.5	15.5	10.8	8.9	8.0	7.3	7.0
S3	13.2	9.2	7.6	6.9	6.5	6.3	6.1
S4	7.9	6.7	6.2	6.0	6.0	5.9	5.9
S5	6.4	6.0	5.9	5.9	5.9	5.9	5.9
S6	6.0	5.9	5.9	5.9	5.9	5.9	5.9
R1	15.5	27.1	72.5	207.5	49.8	30.6	23.0
R2	250.6	40.7	21.1	15.4	12.8	11.3	10.3
R3	19.4	12.7	10.1	8.8	8.1	7.6	7.3
R4	10.5	8.3	7.3	6.8	6.5	6.4	6.3
R5	7.0	6.4	6.1	6.0	5.9	5.9	5.9
MAX	251	146	73	207	50	31	23

**ANR Pipeline Company
 Account 353 Storage Lines**

Salient Statistical Results

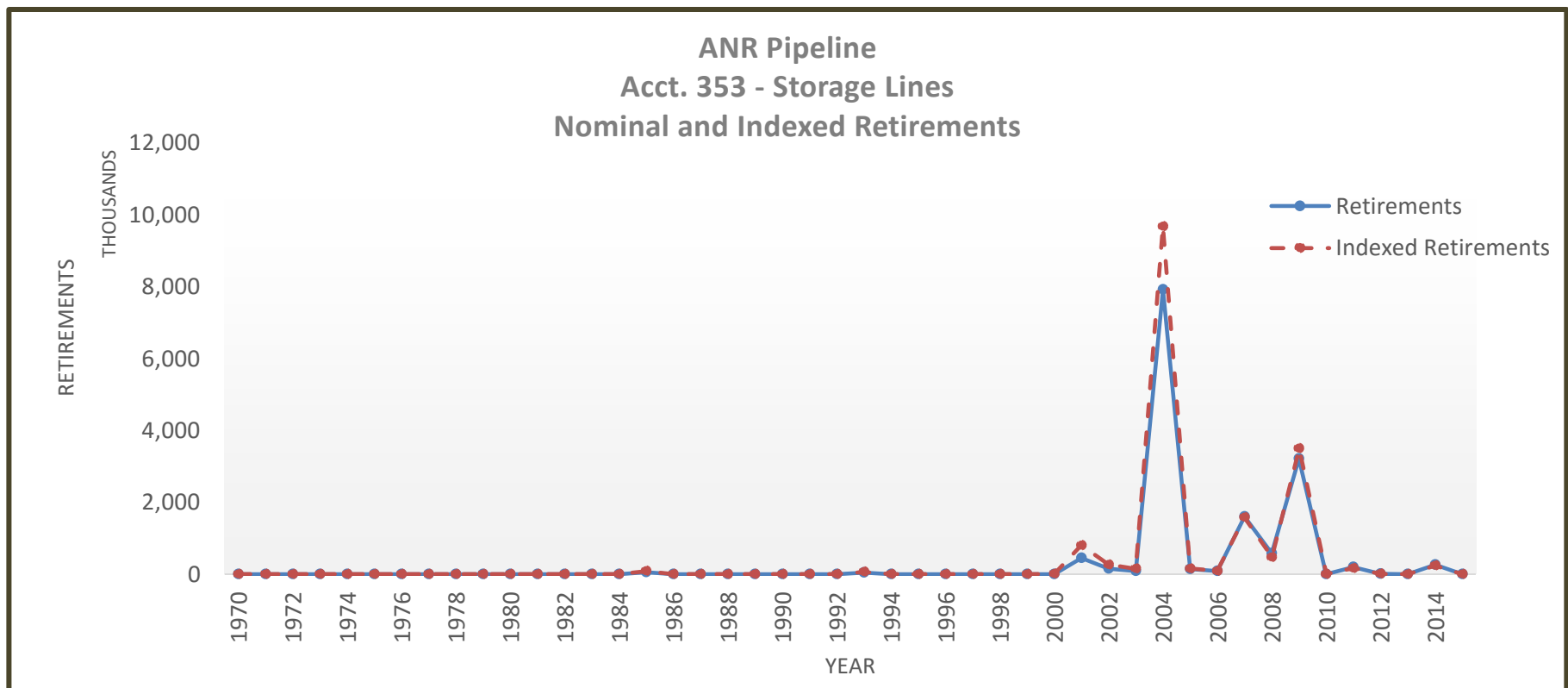
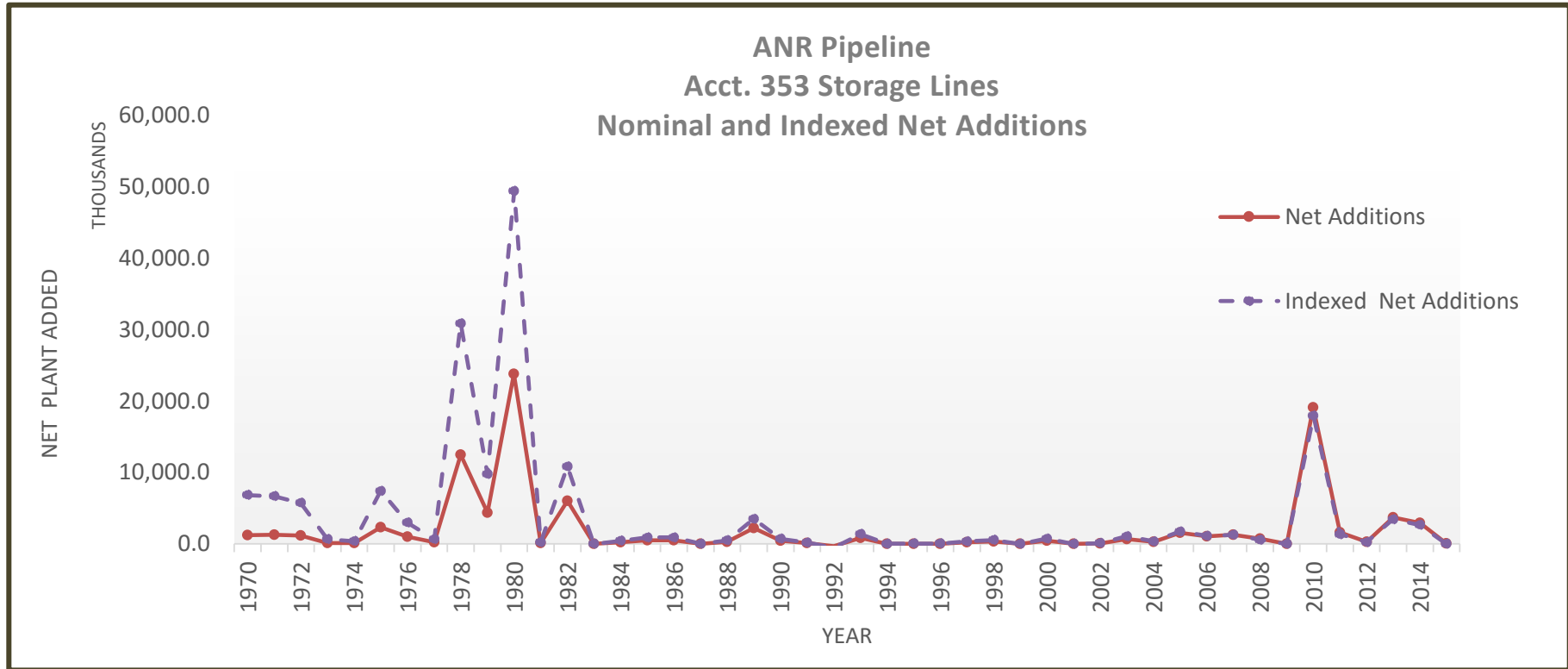
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
60-R5	31.1	60	51.8%	R5	28.66	5	66,096,097
55-R1	31.1	55	56.5%	R1	26.81	125	36,410,394
60-S0	31.1	60	51.8%	S0	27.19	82	33,231,967
60-R1	31.1	60	51.8%	R1	28.10	69	31,118,449



Account 353, Storage Lines includes the cost of line pipe, valves, fittings, and line pack. Account 353 has a 45 year history of regular annual plant additions but almost no retirements until 2000 and after. While the high Conformance Index curves would appear to fit the data better, the forecasts of near term retirements are not close to the actual recent experience. Since the ASL range is in the 55 to 65 year range, I selected 60 as the ASL for the account and an R5 curve to reach the approximate retirements level despite the low CI. Using this curve pair and the indexed average age of 31 years results in an ARL of 28.7.

**ANR Pipeline Company
 Account 353 Storage Lines**

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. The start up costs in the late 1970sThe records show almost no retirements from the Storage lines account. The average indexed age of the account is 31.1.

**ANR Pipeline Company
 Account 353 Storage Lines**

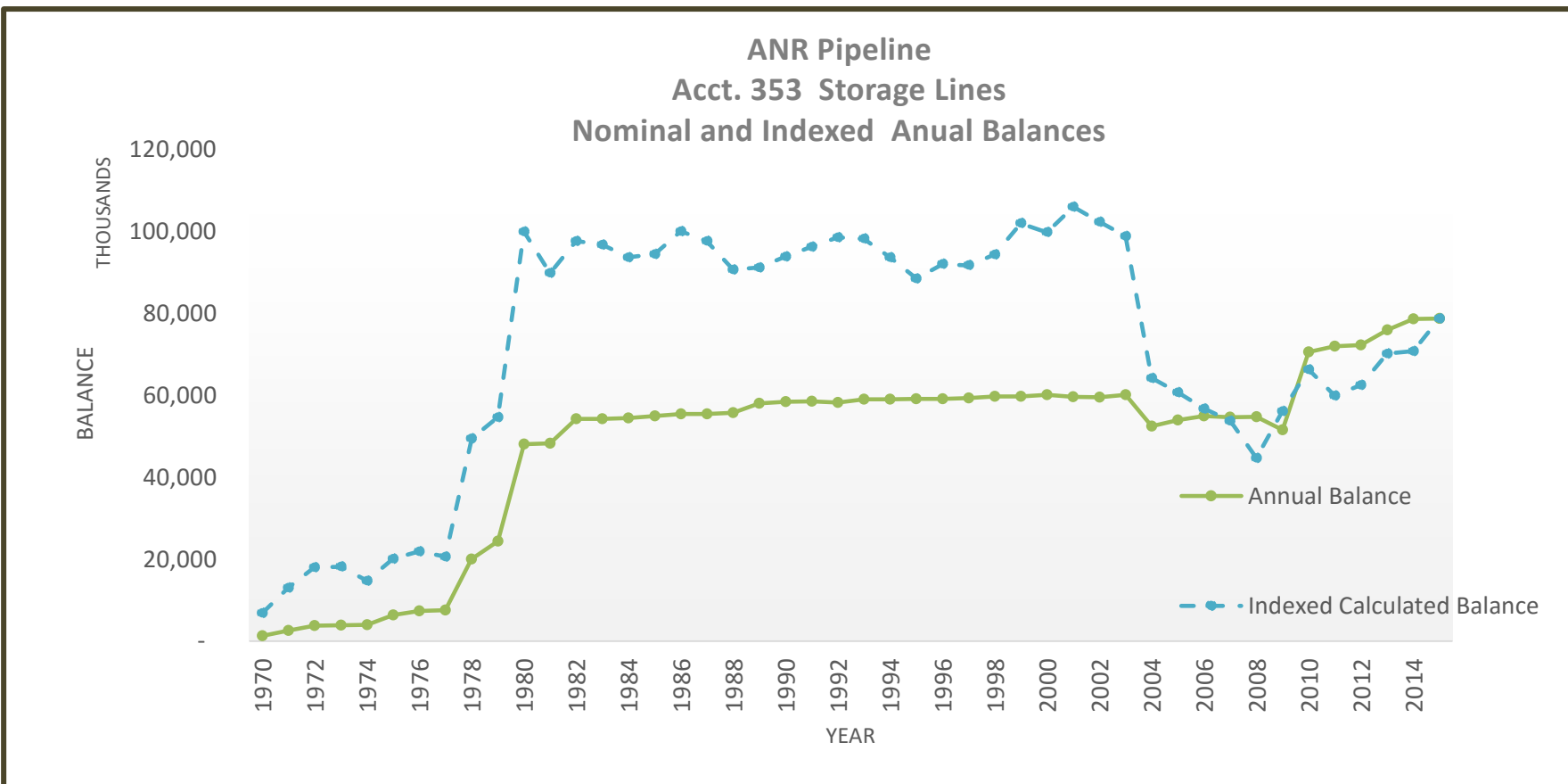
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	1,239,316	-	-	-	1,239,316	1,239,316	1,239,316
1971	1,302,648	-	-	-	1,302,648	2,541,964	2,541,964
1972	1,189,100	-	-	-	1,189,100	3,731,064	3,731,064
1973	138,954	-	-	-	138,954	3,870,018	3,870,018
1974	101,753	-	-	-	101,753	3,971,771	3,971,771
1975	2,296,173	-	-	24,326	2,320,499	6,292,270	6,292,270
1976	991,341	-	-	-	991,341	7,283,611	7,283,611
1977	244,375	-	-	-	244,375	7,527,986	7,527,986
1978	8,312,710	-	-	4,160,265	12,472,975	20,000,961	20,000,961
1979	4,346,895	-	-	-	4,346,895	24,347,856	24,347,856
1980	23,754,556	-	-	-	23,754,556	48,102,412	48,102,412
1981	112,357	-	-	-	112,357	48,214,769	48,214,769
1982	7,334,496	-	(1,313,423)	-	6,021,073	54,235,842	55,549,265
1983	(1,301,190)	-	1,313,423	(12,233)	-	54,235,842	54,235,842
1984	160,345	-	-	90,928	251,273	54,487,115	54,487,115
1985	517,874	47,822	-	-	517,874	54,957,167	54,957,167
1986	497,707	-	-	-	497,707	55,454,874	55,454,874
1987	19,668	-	-	-	19,668	55,474,542	55,474,542
1988	304,563	-	-	-	304,563	55,779,105	55,779,105
1989	2,225,673	-	-	1,163	2,226,836	58,005,941	58,005,941
1990	450,292	-	-	-	450,292	58,456,233	58,456,233

**ANR Pipeline Company
 Account 353 Storage Lines**

Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	112,769	-	-	-	112,769	112,769	58,569,002
1992	2,744,348	-	(3,063,305)	-	(318,957)	(206,188)	61,313,350
1993	818,772	37,749	-	-	818,772	574,835	62,094,373
1994	8,009	-	-	-	8,009	582,844	62,102,382
1995	32,106	-	-	-	32,106	614,950	62,134,488
1996	28,666	-	2,955	-	31,621	646,571	62,166,109
1997	224,961	-	-	-	224,961	871,532	62,391,070
1998	341,106	-	-	-	341,106	1,212,638	62,732,176
1999	125,475	-	3,063,305	(3,188,780)	-	1,212,638	59,668,871
2000	437,142	2,226	-	-	437,142	1,647,554	60,103,787
2001	-	449,673	-	-	-	1,197,881	59,654,114
2002	64,416	154,036	-	-	64,416	1,108,261	59,564,494
2003	650,911	89,025	-	-	650,911	1,670,147	60,126,380
2004	281,733	7,914,771	-	-	281,733	(5,962,891)	52,493,342
2005	1,543,876	135,186	-	-	1,543,876	(4,554,201)	53,902,032
2006	1,084,613	82,922	-	-	1,084,613	(3,552,510)	54,903,723
2007	1,285,636	1,599,238	-	-	1,285,636	(3,866,112)	54,590,121
2008	1,371,853	579,120	(653,502)	-	718,351	(3,726,881)	55,382,854
2009	(653,502)	3,206,895	653,502	-	-	(6,933,776)	51,522,457
2010	15,539,245	-	-	3,536,025	19,075,270	12,141,494	70,597,727
2011	1,455,040	196,892	-	155,403	1,610,443	13,555,045	72,011,278
2012	274,749	10,045	-	-	274,749	13,819,749	72,275,982
2013	1,496,779	-	-	2,225,802	3,722,581	17,542,330	75,998,563
2014	2,947,774	260,414	-	-	2,947,774	20,229,690	78,685,923
2015	54,244	-	-	-	54,244	20,283,934	78,740,167
Total	86,510,327	14,766,014	2,955	6,992,899	93,506,181	-	-
5 Yr ave		93,470.20					

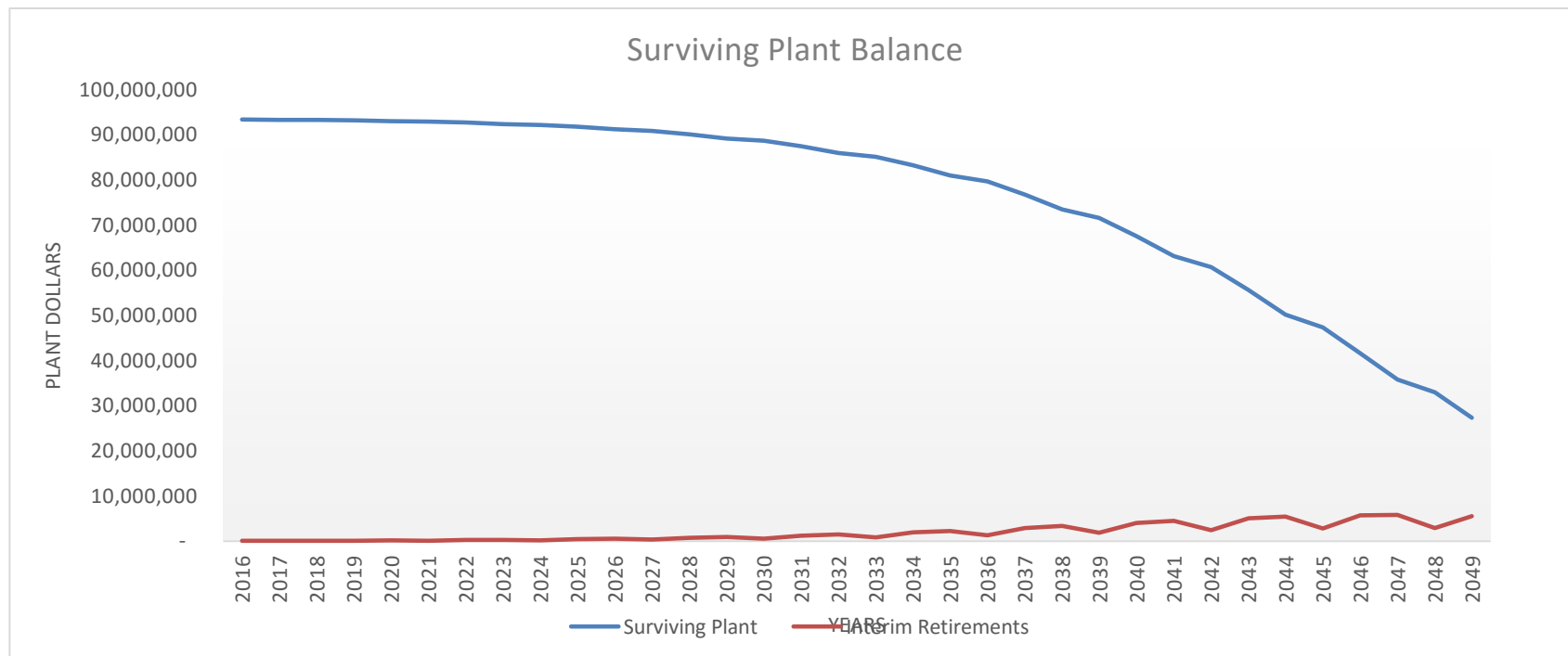


**ANR Pipeline Company
 Account 353 Storage Lines**

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	60-R5	
				Percent Surviving	Surviving Plant
1	2015	31.1	51.8%	100%	93,445,393
2	2016	32.1	53.5%	100%	93,402,866
3	2017	33.1	55.1%	100%	93,338,702
4	2018	34.1	56.8%	100%	93,296,250
5	2019	35.1	58.5%	100%	93,185,305
6	2020	36.1	60.1%	99%	93,031,628
7	2021	37.1	61.8%	99%	92,935,438
8	2022	38.1	63.5%	99%	92,697,035
9	2023	39.1	65.1%	99%	92,386,678
10	2024	40.1	66.8%	99%	92,200,246
11	2025	41.1	68.5%	98%	91,755,605
12	2026	42.1	70.1%	98%	91,201,366
13	2027	43.1	71.8%	97%	90,877,311
14	2028	44.1	73.5%	96%	90,121,781
15	2029	45.1	75.1%	95%	89,201,839
16	2030	46.1	76.8%	95%	88,671,145
17	2031	47.1	78.5%	94%	87,447,383
18	2032	48.1	80.1%	92%	85,975,717
19	2033	49.1	81.8%	91%	85,134,180
20	2034	50.1	83.5%	89%	83,212,721
21	2035	51.1	85.1%	87%	80,937,024
22	2036	52.1	86.8%	85%	79,653,147
23	2037	53.1	88.5%	82%	76,769,715
24	2038	54.1	90.1%	79%	73,440,390
25	2039	55.1	91.8%	77%	71,602,096
26	2040	56.1	93.5%	72%	67,574,289
27	2041	57.1	95.1%	67%	63,087,676
28	2042	58.1	96.8%	65%	60,681,285
29	2043	59.1	98.5%	59%	55,574,192
30	2044	60.1	100.1%	54%	50,136,509
31	2045	61.1	101.8%	51%	47,323,076
32	2046	62.1	103.5%	44%	41,579,337
33	2047	63.1	105.1%	38%	35,791,323
34	2048	64.1	106.8%	35%	32,926,191
35	2049	65.1	108.5%	29%	27,349,296
					2,677,944,136

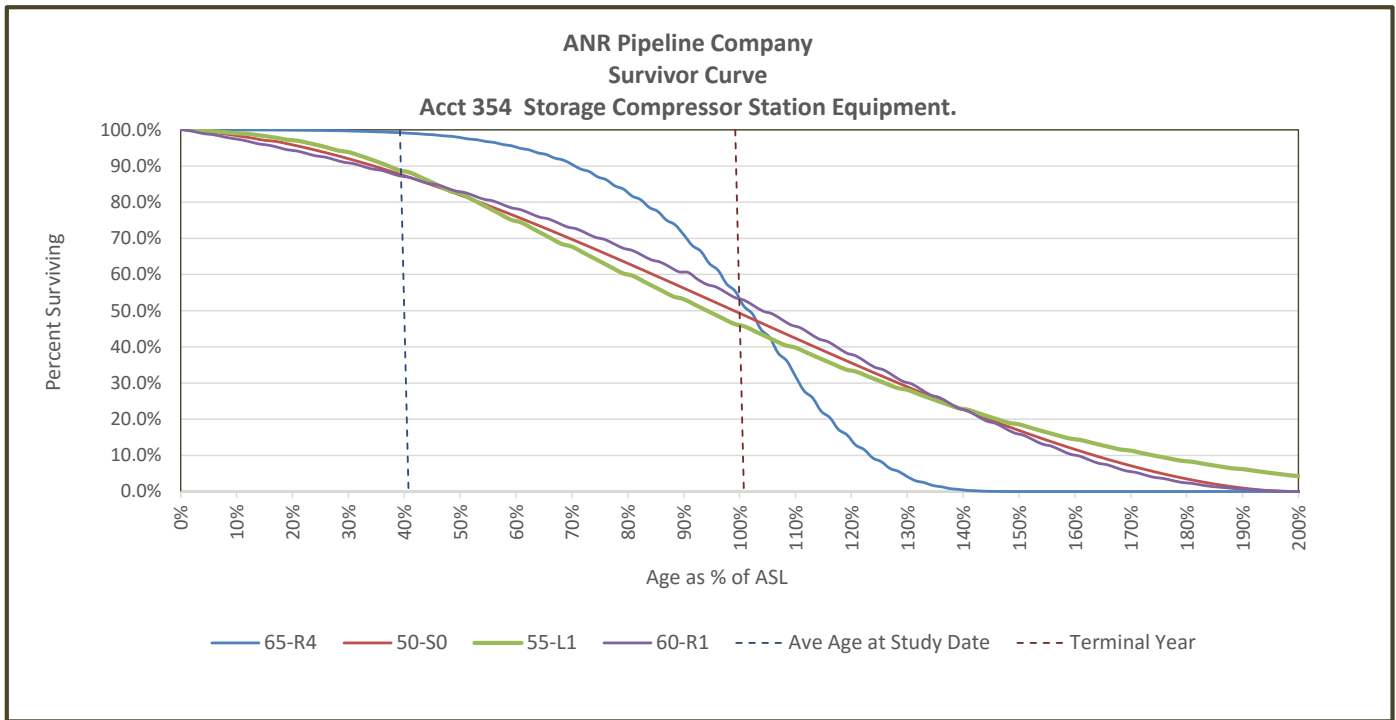
Interim Retirements **66,096,097**
Average Remaining Life **28.66 Interim Retirements**



**ANR Pipeline Company
 Account 354 Storage Compressor Station Equipment**

Salient Statistical Results

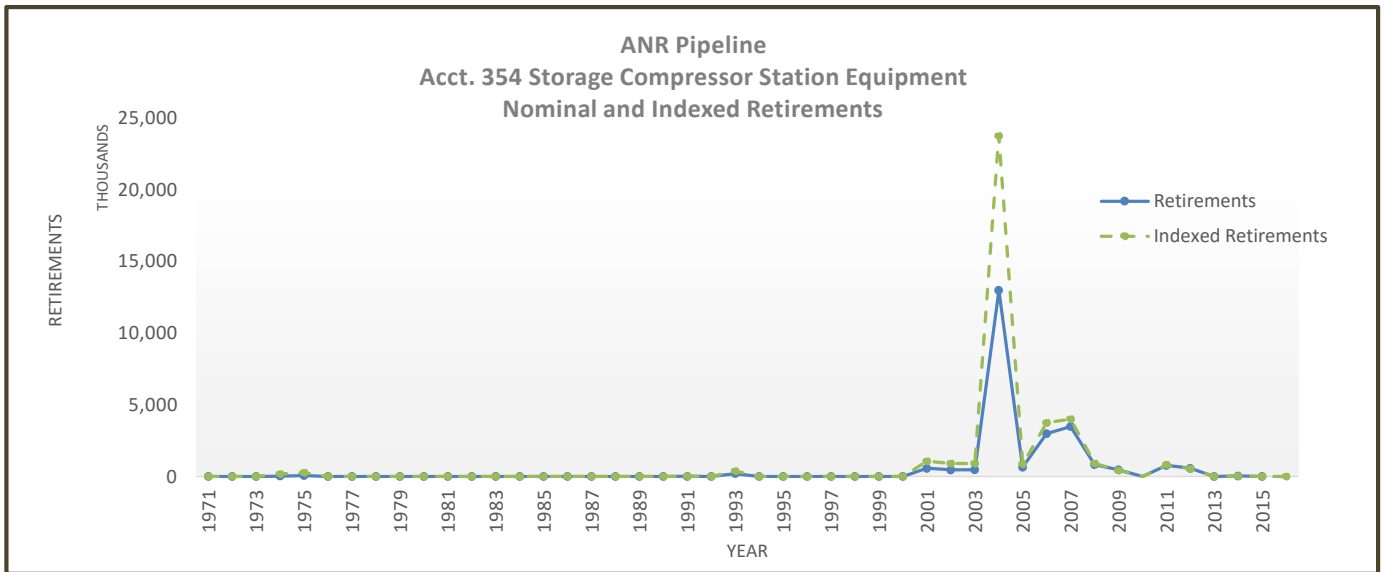
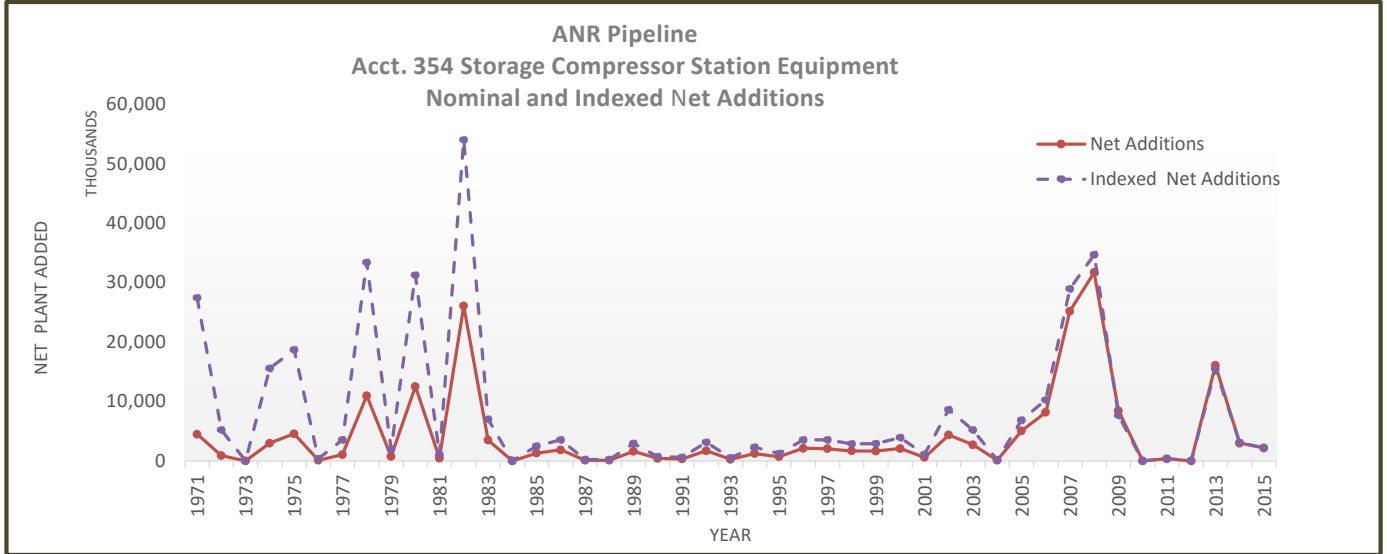
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
65-R4	25.7	65	39.6%	R4	31.90	8	55,203,700
50-S0	25.7	50	51.5%	S0	25.63	114	85,360,078
55-L1	25.7	55	46.8%	L1	25.67	301	83,464,959
60-R1	25.7	60	42.9%	R1	29.02	106	60,491,548



Account 354 Storage Compressor Station Equipment had a long period of little to no retirement activity from the early 1970s to the 2000s. The curve options with high Conformance Indices (see page 6) indicate average service lives in the range of 50 to 65 years. However, these curve pairs do not forecast near term retirements in close proximity to the recent five years of retirement activity, despite the good CI results. If the 65 R4 curve were selected, forecast near term retirements fall in proximity to the recent actuals and the average remaining life expectation comes in at 31.0 years.

ANR Pipeline Company
Account 354 Storage Compressor Station Equipment

Plant Growth & Retirements History



Account 354 Storage Compressor Station Equipment. The nominal values for plant activity for Account 354 would suggest low activity levels for most of the plant history until the 2000s. But when viewed as adjusted for inflation, the late 1970/early 1980 are seen to be as important as the more recent activity.

ANR Pipeline Company
Account 354 Storage Compressor Station Equipment

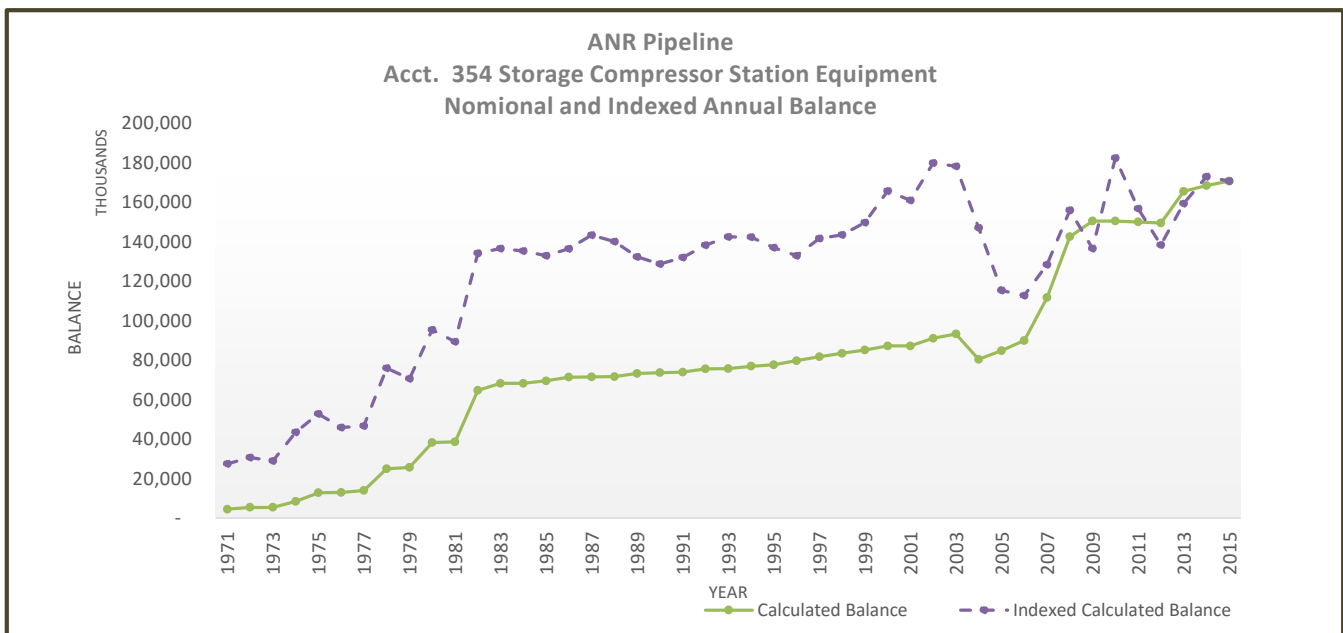
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	-
1971	4,479,125	-	-	-	4,479,125	4,479,125	4,479,125
1972	958,664	-	(48,001)	-	910,663	5,389,788	5,437,789
1973	(48,001)	-	48,001	-	-	5,389,788	5,389,788
1974	2,981,572	32,822	-	-	2,981,572	8,338,538	8,338,538
1975	4,561,665	65,667	-	(22,586)	4,539,079	12,811,950	12,811,950
1976	100,380	-	-	-	100,380	12,912,330	12,912,330
1977	1,057,768	-	-	-	1,057,768	13,970,098	13,970,098
1978	10,975,636	-	-	-	10,975,636	24,945,734	24,945,734
1979	726,504	-	-	-	726,504	25,672,238	25,672,238
1980	12,515,524	-	-	-	12,515,524	38,187,762	38,187,762
1981	440,318	-	-	-	440,318	38,628,080	38,628,080
1982	26,060,258	-	-	-	26,060,258	64,688,338	64,688,338
1983	5,344,945	-	(1,840,065)	(3,098)	3,501,782	68,190,120	70,030,185
1984	(2,061,119)	-	1,840,065	221,054	-	68,190,120	68,190,120
1985	1,297,002	-	-	-	1,297,002	69,487,122	69,487,122
1986	1,851,868	-	-	-	1,851,868	71,338,990	71,338,990
1987	113,422	-	-	-	113,422	71,452,412	71,452,412
1988	102,781	-	-	-	102,781	71,555,193	71,555,193
1989	1,615,263	-	-	-	1,615,263	73,170,456	73,170,456
1990	413,187	-	-	-	413,187	73,583,643	73,583,643

**ANR Pipeline Company
 Account 354 Storage Compressor Station Equipment**

Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	322,515	12,801	-	-	322,515	73,893,357	73,893,357
1992	1,701,366	-	-	-	1,701,366	75,594,723	75,594,723
1993	272,224	204,351	-	-	272,224	75,662,596	75,662,596
1994	1,229,907	5,287	-	-	1,229,907	76,887,216	76,887,216
1995	701,760	-	-	-	701,760	77,588,976	77,588,976
1996	2,109,089	-	-	-	2,109,089	79,698,065	79,698,065
1997	2,044,582	-	-	-	2,044,582	81,742,647	81,742,647
1998	1,670,378	-	-	-	1,670,378	83,413,025	83,413,025
1999	1,867,160	-	-	(225,955)	1,641,205	85,054,230	85,054,230
2000	2,056,610	-	-	-	2,056,610	87,110,840	87,110,840
2001	581,287	574,777	-	-	581,287	87,117,350	87,117,350
2002	4,359,848	459,338	-	-	4,359,848	91,017,860	91,017,860
2003	2,709,145	477,975	-	-	2,709,145	93,249,030	93,249,030
2004	86,314	12,992,668	-	-	86,314	80,342,676	80,342,676
2005	5,031,319	639,962	-	-	5,031,319	84,734,033	84,734,033
2006	8,180,771	2,997,270	-	-	8,180,771	89,917,534	89,917,534
2007	25,180,161	3,484,879	-	(13,624)	25,166,537	111,599,192	111,599,192
2008	60,066,913	828,890	(28,355,400)	-	31,711,513	142,481,815	170,837,215
2009	8,393,015	471,262	-	23,158	8,416,173	150,426,726	178,782,126
2010	(23,532,410)	(2,091)	28,355,400	(4,822,990)	-	150,428,817	150,428,817
2011	327,443	778,376	(611,334)	628,868	344,977	149,995,418	150,606,752
2012	(611,334)	576,122	611,334	-	-	149,419,296	149,419,296
2013	12,015,128	5,212	-	4,056,206	16,071,334	165,485,418	165,485,418
2014	2,974,477	37,563	-	-	2,974,477	168,422,332	168,422,332
2015	2,184,894	-	-	-	2,184,894	170,607,226	-
Total	195,409,324	24,643,131	-	(158,967)	195,250,357	-	-
		279,454.60					



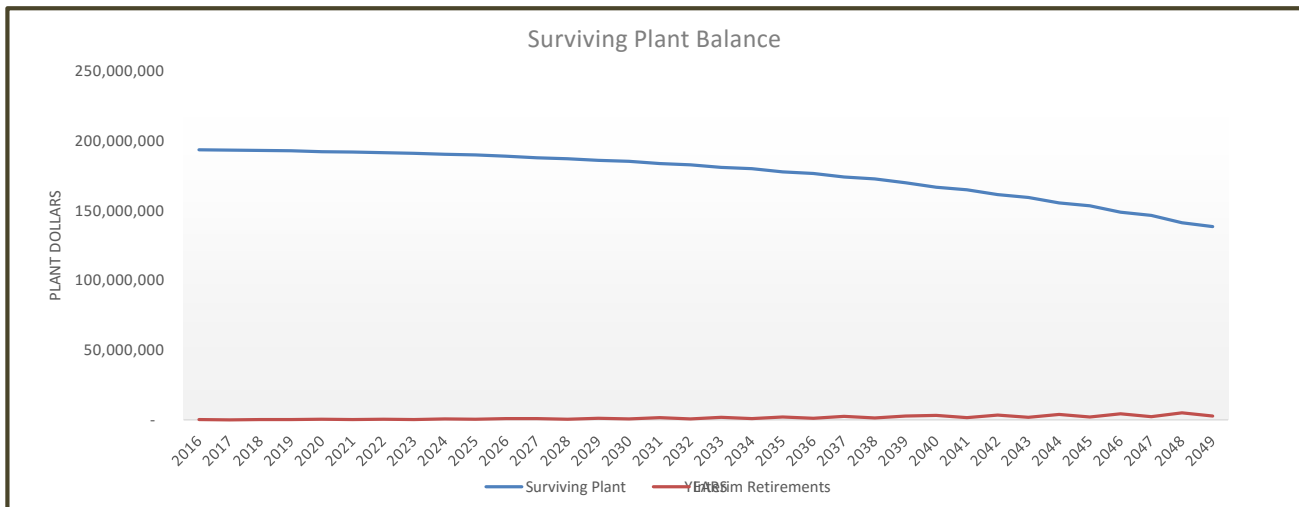
**ANR Pipeline Company
 Account 354 Storage Compressor Station Equipment**

Average Remaining Life Calculation

65-R4

	Year	Age	Age as % of ASL	Percent Surviving	Surviving Plant	Interim Retirements
1	2015	25.7	39.6%	99%	193,875,990	
2	2016	26.7	41.1%	99%	193,576,359	299,631
3	2017	27.7	42.7%	99%	193,406,432	169,926
4	2018	28.7	44.2%	99%	193,021,516	384,917
5	2019	29.7	45.8%	99%	192,804,397	217,118
6	2020	30.7	47.3%	98%	192,315,256	489,141
7	2021	31.7	48.8%	98%	192,040,832	274,424
8	2022	32.7	50.4%	98%	191,425,891	614,941
9	2023	33.7	51.9%	98%	191,082,680	343,211
10	2024	34.7	53.5%	97%	190,317,650	765,030
11	2025	35.7	55.0%	97%	189,892,863	424,787
12	2026	36.7	56.5%	97%	188,950,956	941,907
13	2027	37.7	58.1%	96%	187,875,068	1,075,888
14	2028	38.7	59.6%	96%	187,282,678	592,390
15	2029	39.7	61.1%	95%	185,980,339	1,302,339
16	2030	40.7	62.7%	95%	185,266,855	713,484
17	2031	41.7	64.2%	94%	183,706,238	1,560,617
18	2032	42.7	65.8%	94%	182,855,513	850,725
19	2033	43.7	67.3%	93%	181,004,227	1,851,286
20	2034	44.7	68.8%	92%	180,000,074	1,004,153
21	2035	45.7	70.4%	91%	177,826,059	2,174,015
22	2036	46.7	71.9%	90%	176,652,800	1,173,259
23	2037	47.7	73.5%	89%	174,125,694	2,527,106
24	2038	48.7	75.0%	88%	172,768,821	1,356,873
25	2039	49.7	76.5%	87%	169,861,446	2,907,375
26	2040	50.7	78.1%	85%	166,687,749	3,173,697
27	2041	51.7	79.6%	85%	164,998,423	1,689,326
28	2042	52.7	81.1%	83%	161,410,854	3,587,569
29	2043	53.7	82.7%	82%	159,511,478	1,899,376
30	2044	54.7	84.2%	80%	155,497,755	4,013,723
31	2045	55.7	85.8%	79%	153,378,137	2,119,618
32	2046	56.7	87.3%	76%	148,886,520	4,491,617
33	2047	57.7	88.8%	75%	146,499,487	2,387,033
34	2048	58.7	90.4%	72%	141,400,602	5,098,885
35	2049	59.7	91.9%	71%	<u>138,672,290</u>	2,728,311
					<u>6,184,859,930</u>	

Interim Retirements **55,203,700**
 Average Remaining Life **31.90** Interim Retirements



ANR Pipeline Company
Account 354 Storage Compressor Station Equipment

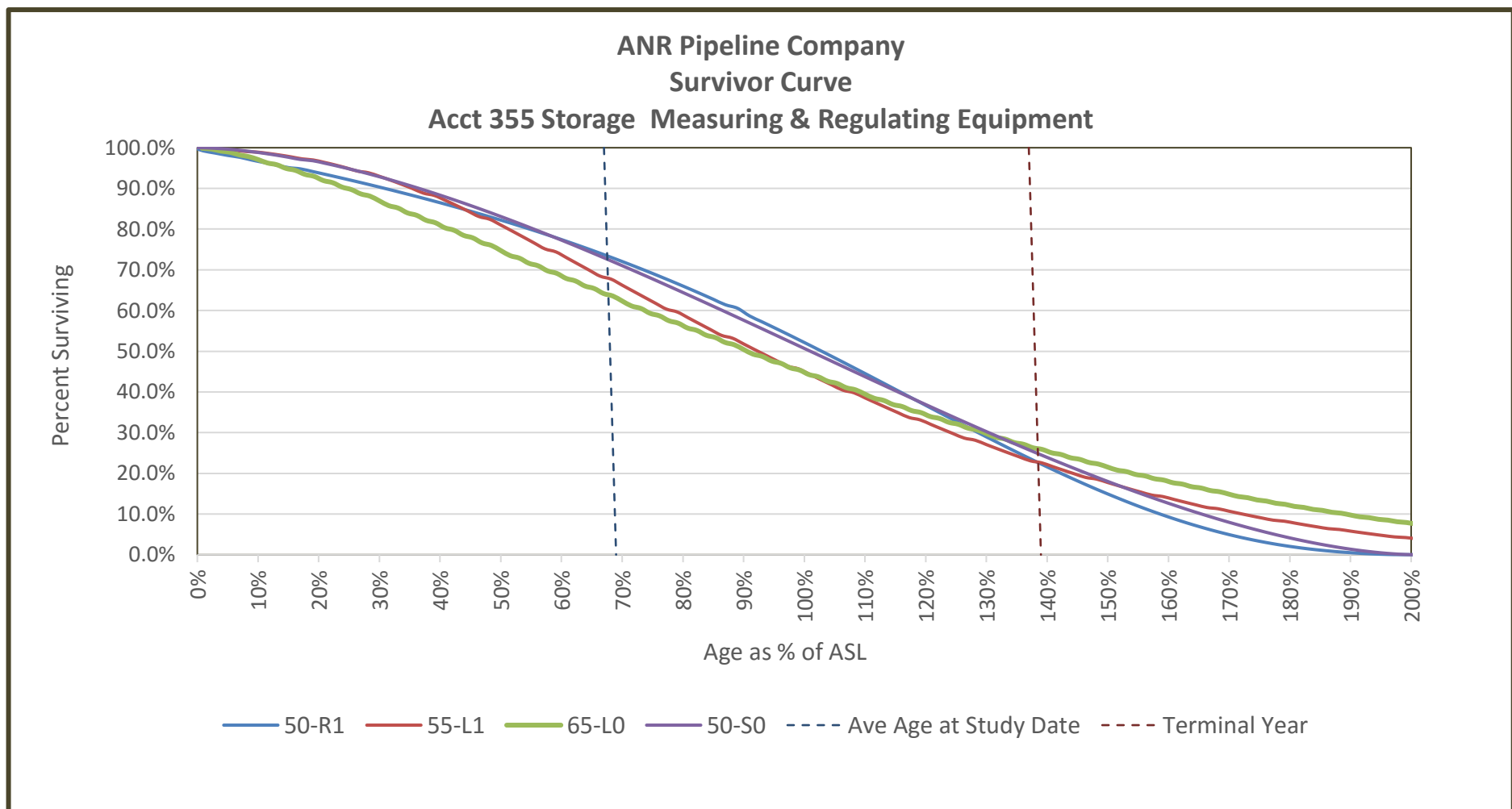
Conformance Indices

Curve	ASLs						
	45	50	55	60	65	70	75
L0	10.4	14.6	21.7	37.7	86.0	426.1	66.7
L1	19.9	51.1	300.8	44.1	25.5	18.8	15.5
L2	61.1	46.9	21.1	14.7	11.8	10.3	9.5
L3	47.6	15.8	11.3	9.5	8.6	8.1	7.8
L4	15.6	10.0	8.5	7.8	7.4	7.2	7.1
L5	10.6	8.0	7.3	7.1	7.0	6.9	6.9
S0	27.1	114.2	84.1	34.8	23.3	18.3	15.6
S1	495.8	34.0	19.7	14.8	12.3	10.9	10.0
S2	37.7	16.4	12.1	10.2	9.1	8.4	8.0
S3	19.1	11.3	9.2	8.2	7.7	7.4	7.2
S4	11.8	8.5	7.6	7.2	7.0	7.0	6.9
S5	10.1	8.1	7.7	7.6	7.6	7.6	7.6
S6	8.8	7.7	7.6	7.6	7.6	7.6	7.6
R1	20.2	41.7	191.5	106.3	46.0	31.3	25.1
R2	163.0	46.0	25.0	18.6	15.5	13.7	12.5
R3	32.2	16.6	13.0	11.2	10.2	9.6	9.2
R4	17.1	11.4	9.8	8.9	8.5	8.2	8.0
R5	11.2	8.7	8.0	7.8	7.7	7.6	7.6
MAX	496	114	301	106	86	426	67

**ANR Pipeline Company
 Account 355 Storage Measuring & Regulating Equipment**

Salient Statistical Results

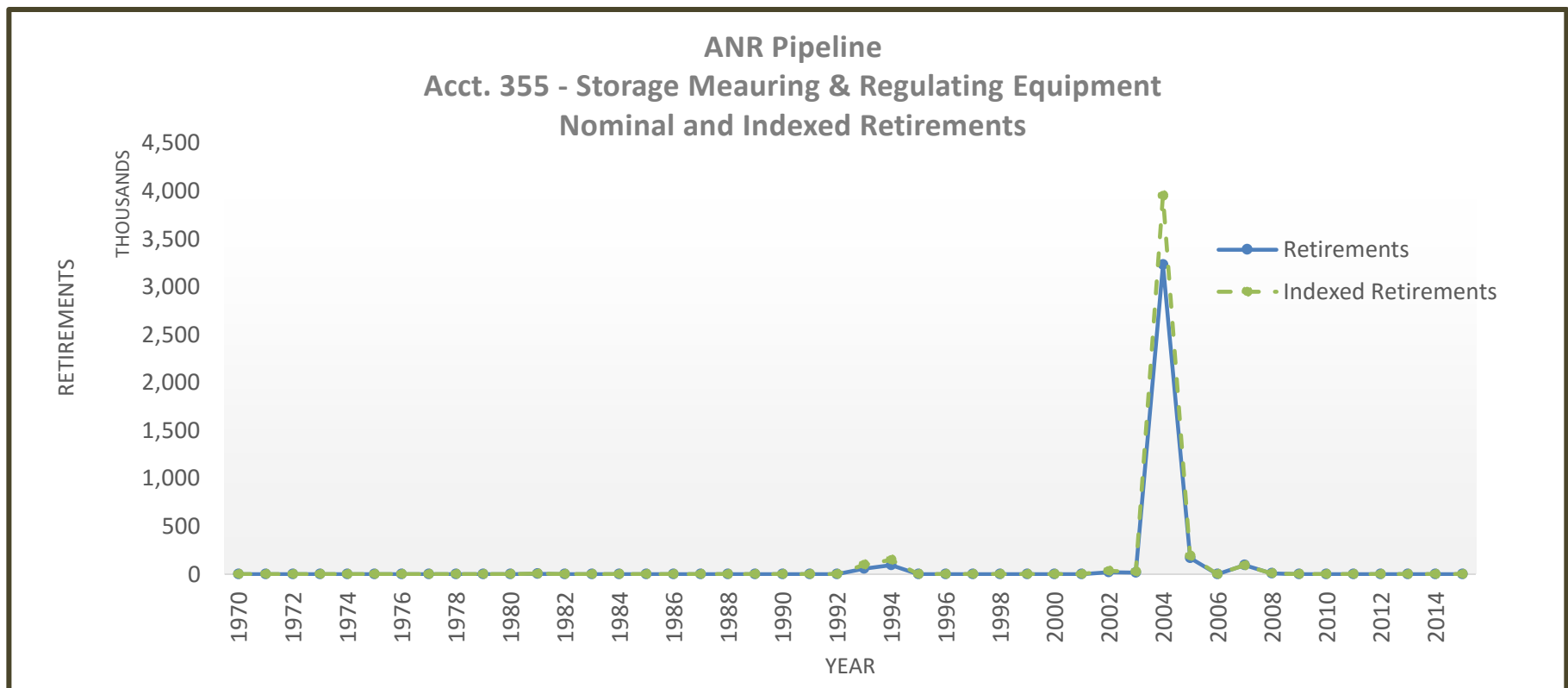
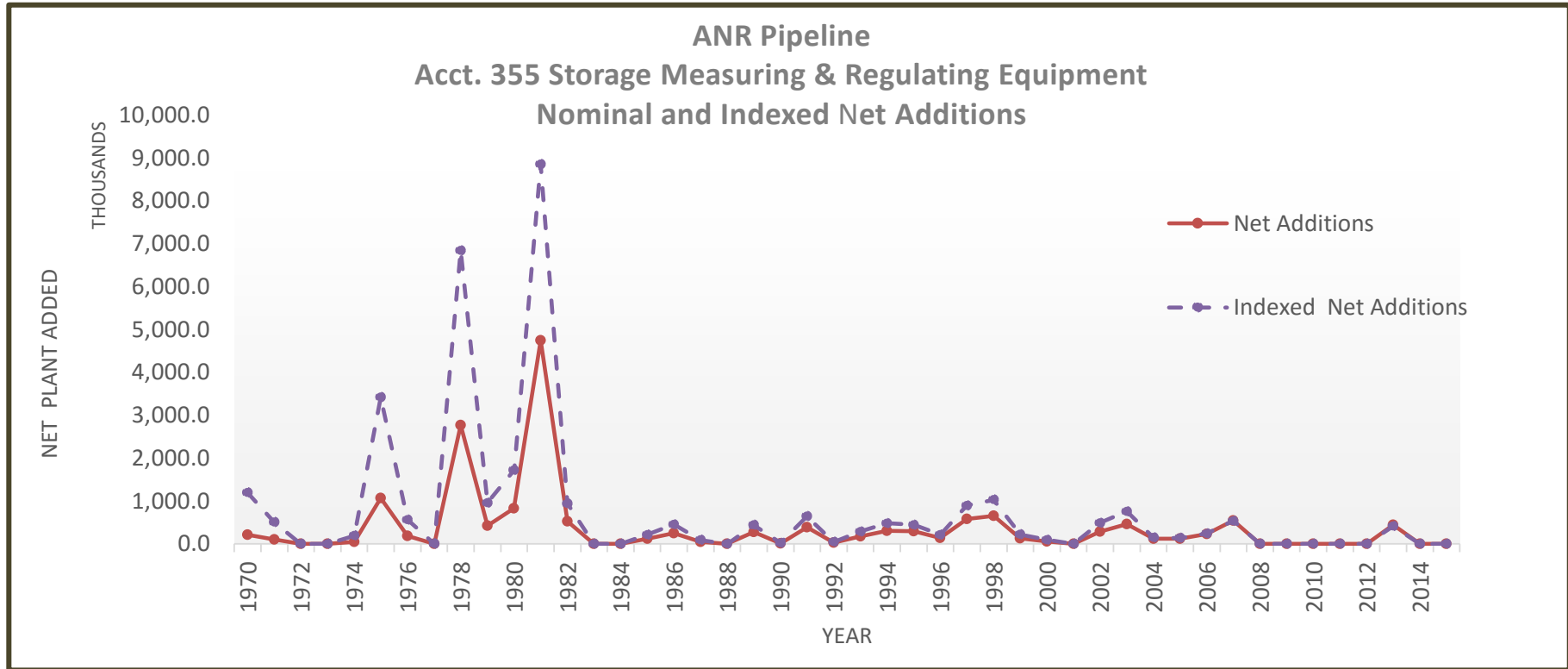
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
50-R1	32.4	50	64.7%	R1	24.68	363	7,911,714
55-L1	32.4	55	58.8%	L1	24.67	867	6,901,383
65-L0	32.4	65	49.8%	L0	27.60	110	5,056,910
50-S0	32.4	50	64.7%	S0	24.22	57	7,400,919



Account 355 Storage Measuring & Regulating Equipment includes the costs of equipment needed to manage the gas flows, such as plug and ball valves, hygrometers, gravimeters, chromatographs, manifolds, control software, and other equipment. The theoretical average age of equipment in the account is 30.5 years old. The Account has few retirements until the 2000s and modest retirements since that time with an exception in 2003 when a major retirement took place. The survivor curves indicate an average service life in 50 to 55 year range. The Conformance Index for the 50-R1 curve indicates a good match with the original data and should provide the good indicator of future interim retirements and produces an average remaining life of 25.3 years over the remaining economic life of 35 years.

ANR Pipeline Company
Account 355 Storage Measuring & Regulating Equipment

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. Substantial start up plant additions are seen throughout the 1970s and early 80s with a major addition in the mid 2000s. ANR's retirement records show a major retirement project in the mid 2000s.

**ANR Pipeline Company
 Account 355 Storage Measuring & Regulating Equipment**

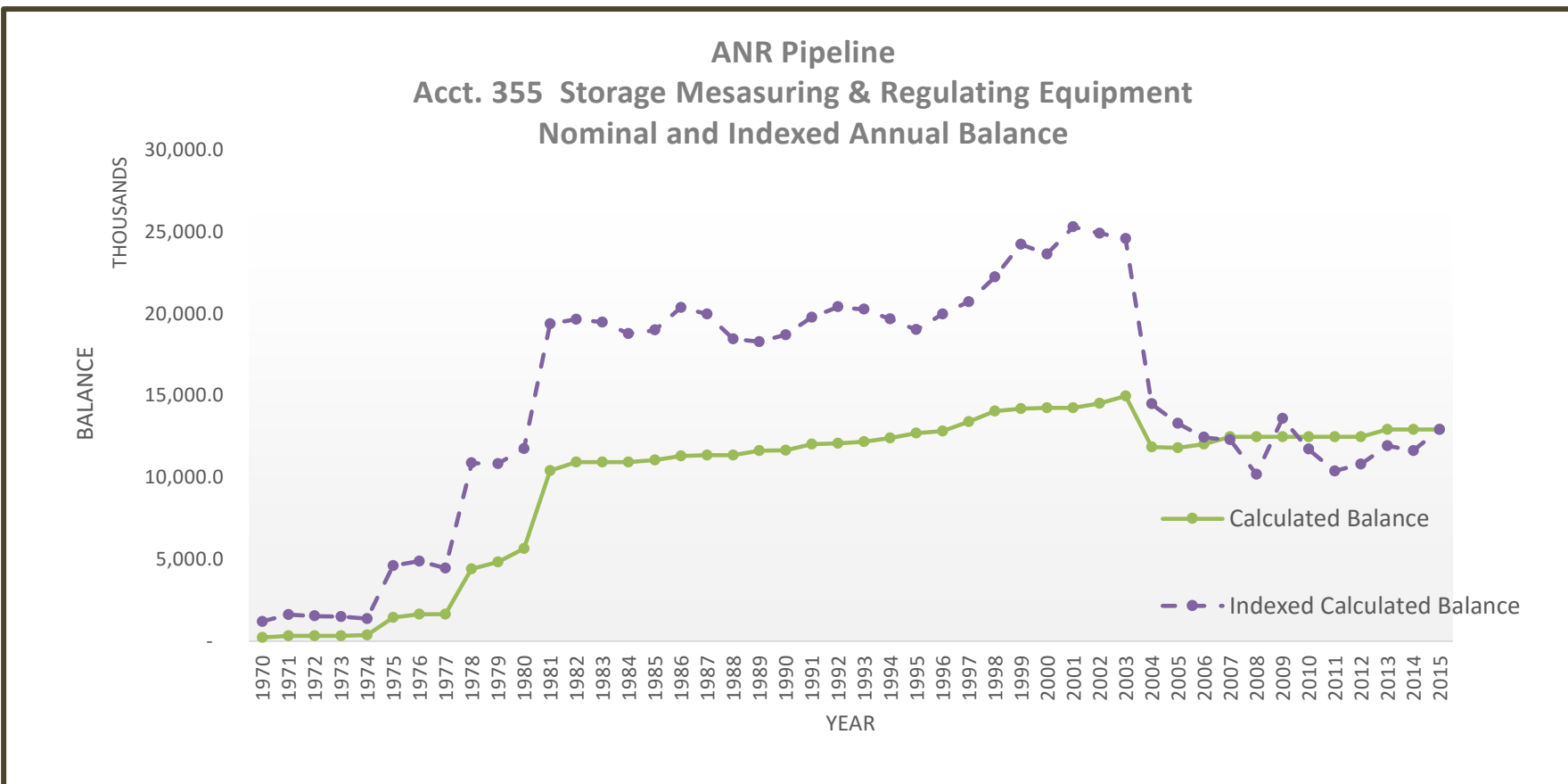
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	217,102	-	-	-	217,102	217,102	217,102
1971	244,192	-	(145,859)	-	98,333	315,435	461,294
1972	(58,818)	-	58,818	-	-	315,435	402,476
1973	(87,041)	-	87,041	-	-	315,435	315,435
1974	52,067	-	-	-	52,067	367,502	367,502
1975	1,411,066	-	(339,985)	-	1,071,081	1,438,583	1,778,568
1976	188,429	-	-	-	188,429	1,627,012	1,966,997
1977	(339,985)	-	339,985	-	-	1,627,012	1,627,012
1978	2,764,999	-	-	-	2,764,999	4,392,011	4,392,011
1979	426,596	-	-	-	426,596	4,818,607	4,818,607
1980	827,330	-	-	-	827,330	5,645,937	5,645,937
1981	4,936,922	2,057	(189,738)	-	4,747,184	10,391,064	10,580,802
1982	141,584	-	(68,359)	449,142	522,367	10,913,431	11,171,528
1983	(201,757)	-	189,738	12,019	-	10,913,431	10,981,790
1984	(136,840)	-	68,359	68,481	-	10,913,431	10,913,431
1985	124,759	-	-	-	124,759	11,038,190	11,038,190
1986	251,474	-	-	-	251,474	11,289,664	11,289,664
1987	51,643	-	-	-	51,643	11,341,307	11,341,307
1988	818	-	-	-	818	11,342,125	11,342,125
1989	281,308	-	-	-	281,308	11,623,433	11,623,433
1990	13,464	-	-	-	13,464	11,636,897	11,636,897

**ANR Pipeline Company
 Account 355 Storage Measuring & Regulating Equipment**

Plant Balances

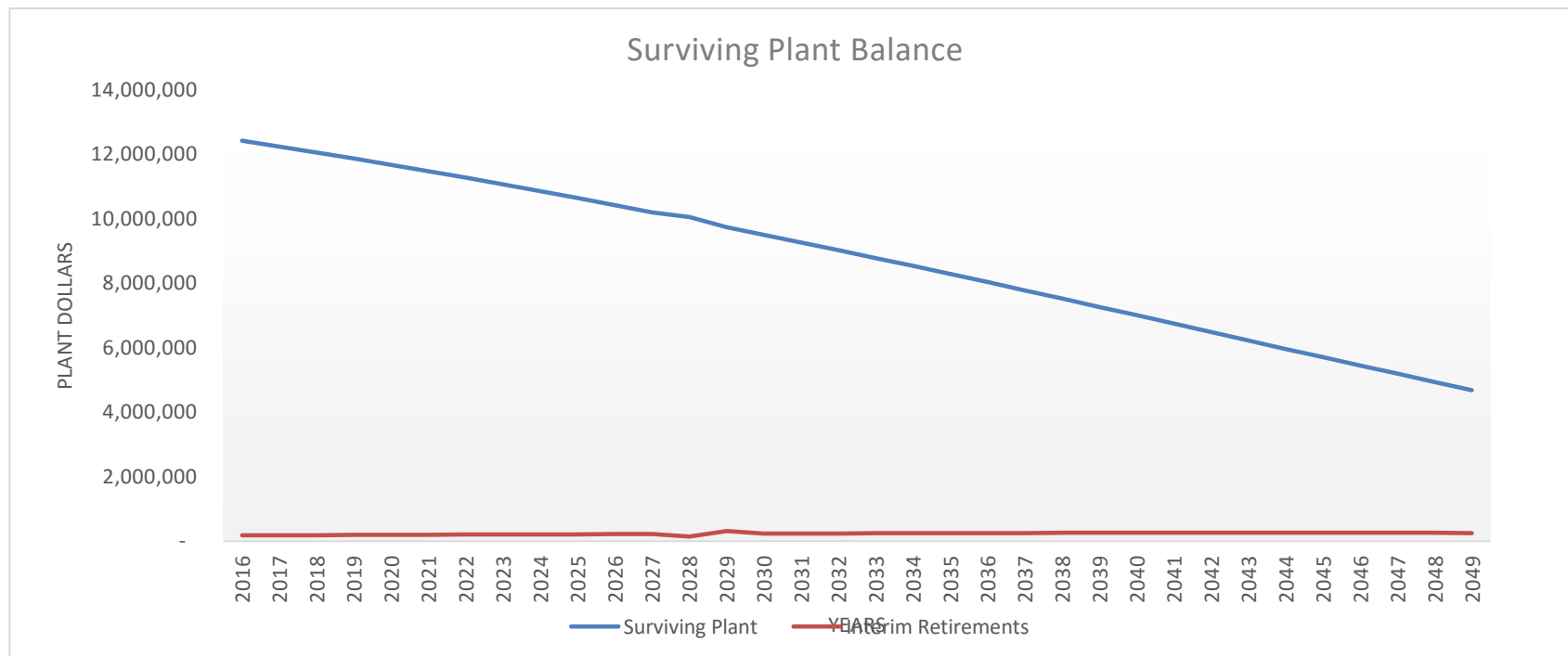
Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	389,974	-	-	-	389,974	12,026,871	12,026,871
1992	27,517	-	-	-	27,517	12,054,388	12,054,388
1993	173,303	57,970	-	-	173,303	12,169,721	12,169,721
1994	304,355	93,318	-	-	304,355	12,380,758	12,380,758
1995	295,757	-	-	-	295,757	12,676,515	12,676,515
1996	136,765	-	-	-	136,765	12,813,280	12,813,280
1997	579,821	-	-	-	579,821	13,393,101	13,393,101
1998	650,528	-	-	-	650,528	14,043,629	14,043,629
1999	145,824	-	-	(17,391)	128,433	14,172,062	14,172,062
2000	56,428	-	-	-	56,428	14,228,490	14,228,490
2001	-	-	-	-	-	14,228,490	14,228,490
2002	286,999	19,588	-	-	286,999	14,495,901	14,495,901
2003	459,983	13,482	-	-	459,983	14,942,402	14,942,402
2004	118,723	3,228,978	-	-	118,723	11,832,147	11,832,147
2005	122,286	167,094	-	-	122,286	11,787,339	11,787,339
2006	256,386	-	(23,158)	-	233,228	12,020,567	12,043,725
2007	555,794	91,873	(10,617)	-	545,177	12,473,871	12,507,646
2008	(10,617)	6,673	10,617	-	-	12,467,198	12,490,356
2009	-	-	23,158	(23,158)	-	12,467,198	12,467,198
2010	-	-	-	-	-	12,467,198	12,467,198
2011	-	-	-	-	-	12,467,198	12,467,198
2012	-	-	-	-	-	12,467,198	12,467,198
2013	-	-	-	445,158	445,158	12,912,356	12,912,356
2014	-	-	-	-	-	12,912,356	12,912,356
2015	2,359	-	-	-	2,359	12,914,715	12,914,715
Total	15,661,497	3,681,033	-	934,251	16,595,748	-	-



**ANR Pipeline Company
 Account 355 Storage Measuring & Regulating Equipment**

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	50-R1	
				Percent Surviving	Interim Retirements
1	2015	32.36	64.7%	76%	12,593,428
2	2016	33.36	66.7%	75%	12,416,859
3	2017	34.36	68.7%	74%	12,236,095
4	2018	35.36	70.7%	73%	12,051,084
5	2019	36.36	72.7%	71%	11,861,788
6	2020	37.36	74.7%	70%	11,668,183
7	2021	38.36	76.7%	69%	11,470,262
8	2022	39.36	78.7%	68%	11,268,033
9	2023	40.36	80.7%	67%	11,061,517
10	2024	41.36	82.7%	65%	10,850,756
11	2025	42.36	84.7%	64%	10,635,810
12	2026	43.36	86.7%	63%	10,416,753
13	2027	44.36	88.7%	61%	10,193,678
14	2028	45.36	90.7%	61%	10,049,904
15	2029	46.36	92.7%	59%	9,735,935
16	2030	47.36	94.7%	57%	9,501,547
17	2031	48.36	96.7%	56%	9,263,695
18	2032	49.36	98.7%	54%	9,022,564
19	2033	50.36	100.7%	53%	8,778,352
20	2034	51.36	102.7%	51%	8,531,283
21	2035	52.36	104.7%	50%	8,281,592
22	2036	53.36	106.7%	48%	8,029,536
23	2037	54.36	108.7%	47%	7,775,380
24	2038	55.36	110.7%	45%	7,519,417
25	2039	56.36	112.7%	44%	7,261,951
26	2040	57.36	114.7%	42%	7,003,301
27	2041	58.36	116.7%	41%	6,743,802
28	2042	59.36	118.7%	39%	6,483,799
29	2043	60.36	120.7%	38%	6,223,661
30	2044	61.36	122.7%	36%	5,963,758
31	2045	62.36	124.7%	34%	5,704,480
32	2046	63.36	126.7%	33%	5,446,223
33	2047	64.36	128.7%	31%	5,189,397
34	2048	65.36	130.7%	30%	4,934,419
35	2049	66.36	132.7%	28%	4,681,714
					310,849,957
				Interim Retirements Average Remaining Life	7,911,714
				24.68	Interim Retirements



ANR Pipeline Company
Account 355 Storage Measuring & Regulating Equipment

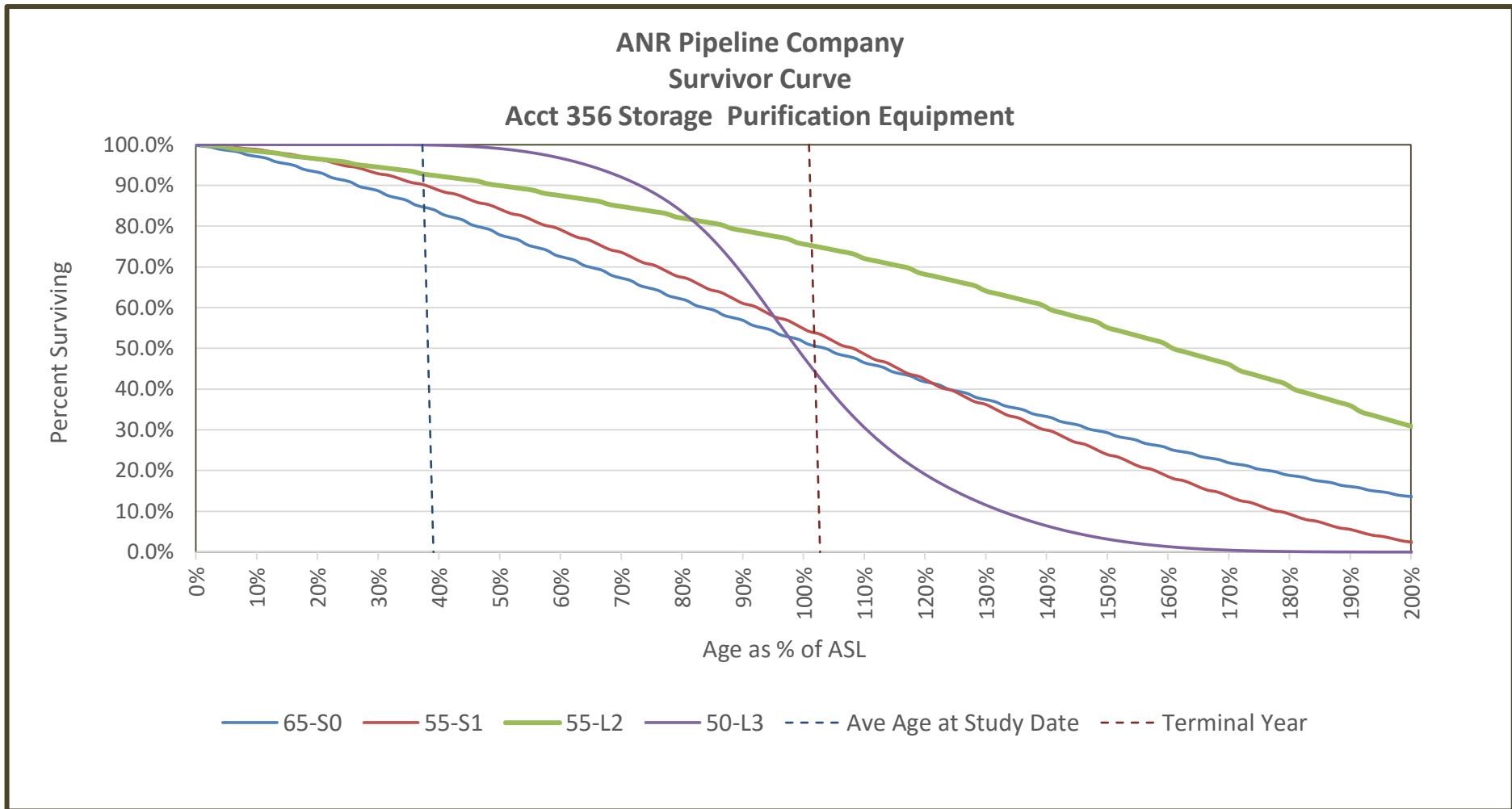
Conformance Indices

Curve	ASLs							
	50	55	60	65	70	75	80	
L0	8.6	13.4	27.5	109.9	59.5	25.7	17.2	
L1	21.7	867.3	25.9	14.0	10.0	8.0	7.0	
L2	37.9	12.4	8.0	6.3	5.4	4.9	4.6	
L3	8.8	6.0	4.9	4.4	4.1	3.9	3.8	
L4	5.1	4.4	4.0	3.8	3.7	3.6	3.6	
L5	4.0	3.7	3.6	3.5	3.5	3.5	3.5	
S0	57.2	46.1	18.1	12.1	9.4	7.9	7.1	
S1	22.1	11.3	8.0	6.6	5.7	5.2	4.9	
S2	9.2	6.5	5.3	4.7	4.3	4.1	4.0	
S3	5.9	4.8	4.2	3.9	3.8	3.7	3.6	
S4	4.3	3.8	3.6	3.6	3.5	3.5	3.5	
S5	3.7	3.6	3.5	3.5	3.5	3.5	3.5	
S6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
R1	362.7	32.2	16.9	12.2	9.9	8.5	7.7	
R2	14.3	9.5	7.5	6.5	5.8	5.4	5.1	
R3	7.2	5.8	5.1	4.7	4.4	4.2	4.1	
R4	5.2	4.5	4.1	3.9	3.8	3.7	3.7	
R5	4.0	3.7	3.6	3.5	3.5	3.5	3.5	
MAX	363	867	27	110	60	26	17	

**ANR Pipeline Company
 Account 356 Storage Purification Equipment**

Salient Statistical Results

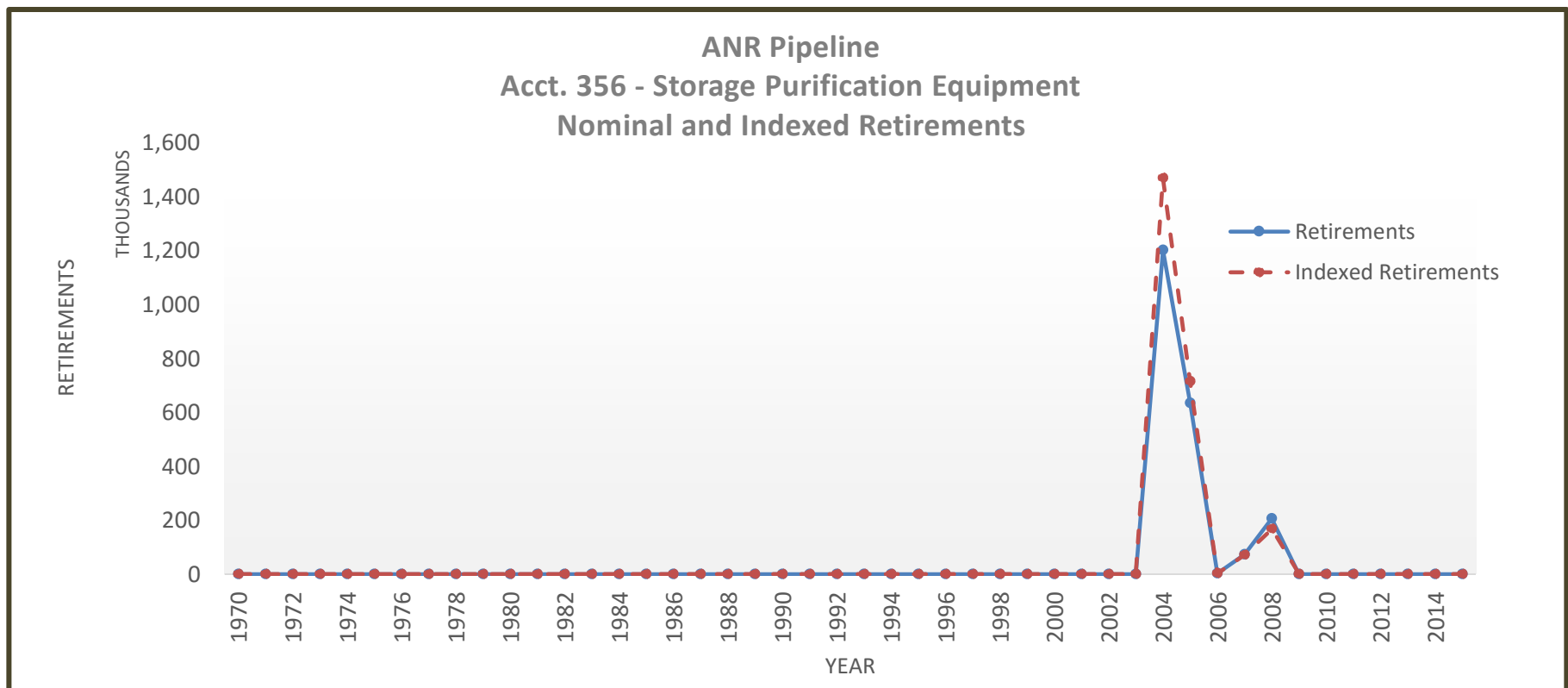
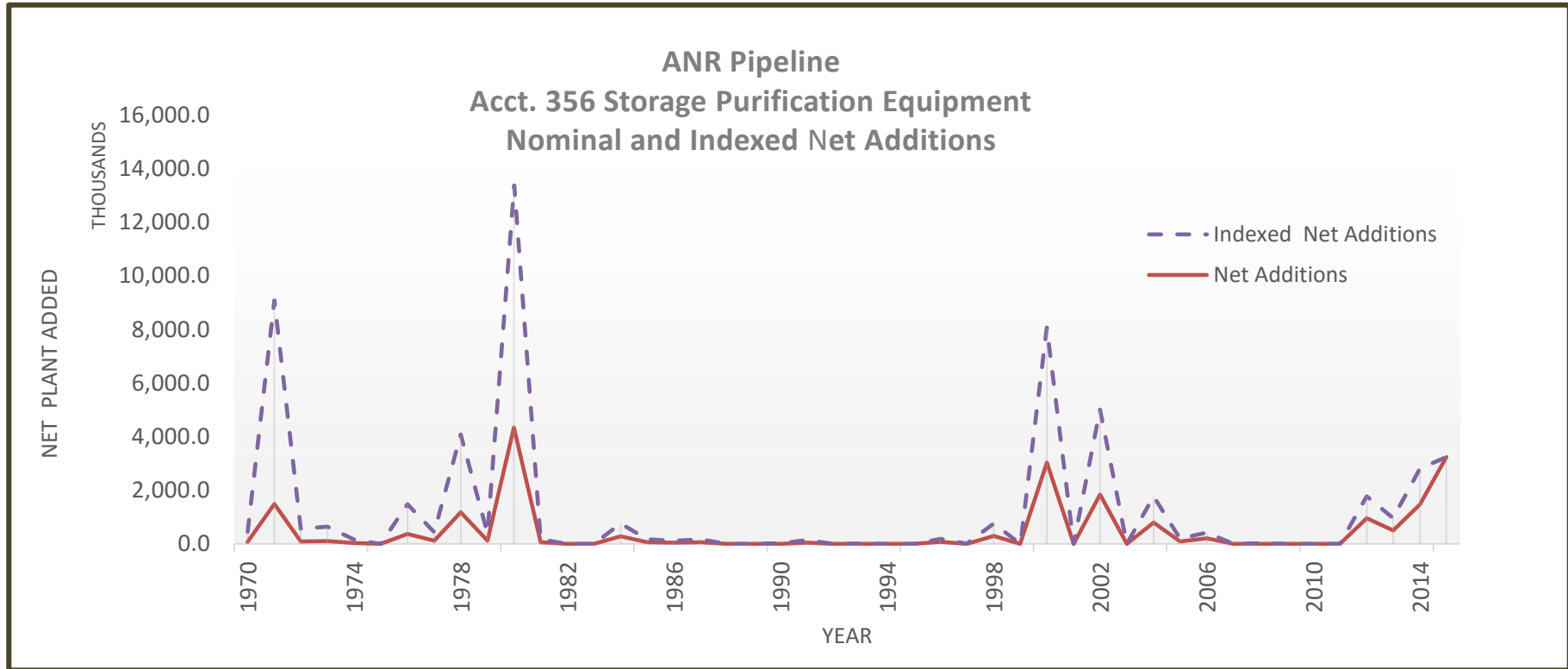
Options	Average Age at Study Date	Average Service Life	Age as % of ASL	Iowa Curve	Ave Remain Life	Conformance Index	Interim Retirements
65-S0	29.67	65	45.6%	S0	28.39	15,594	6,976,773
55-S1	29.67	55	53.9%	S1	25.34	342	10,285,182
55-L2	29.67	55	53.9%	L2	23.66	302	11,383,045
50-L3	29.67	50	59.3%	L3	20.78	103	14,842,134



Account 356 Storage Purification Equipment had had very little retirement experience, resulting in long life forecasts.

**ANR Pipeline Company
 Account 356 Storage Purification Equipment**

Plant Growth & Retirements History



ANR's storage operations began in the early 1970s. Substantial start up plant additions are seen throughout the 1970s and early 80s with a major addition in the mid 2000s. ANR's retirement records show a major retirement project in the mid 2000s.

ANR Pipeline Company
Account 356 Storage Purification Equipment

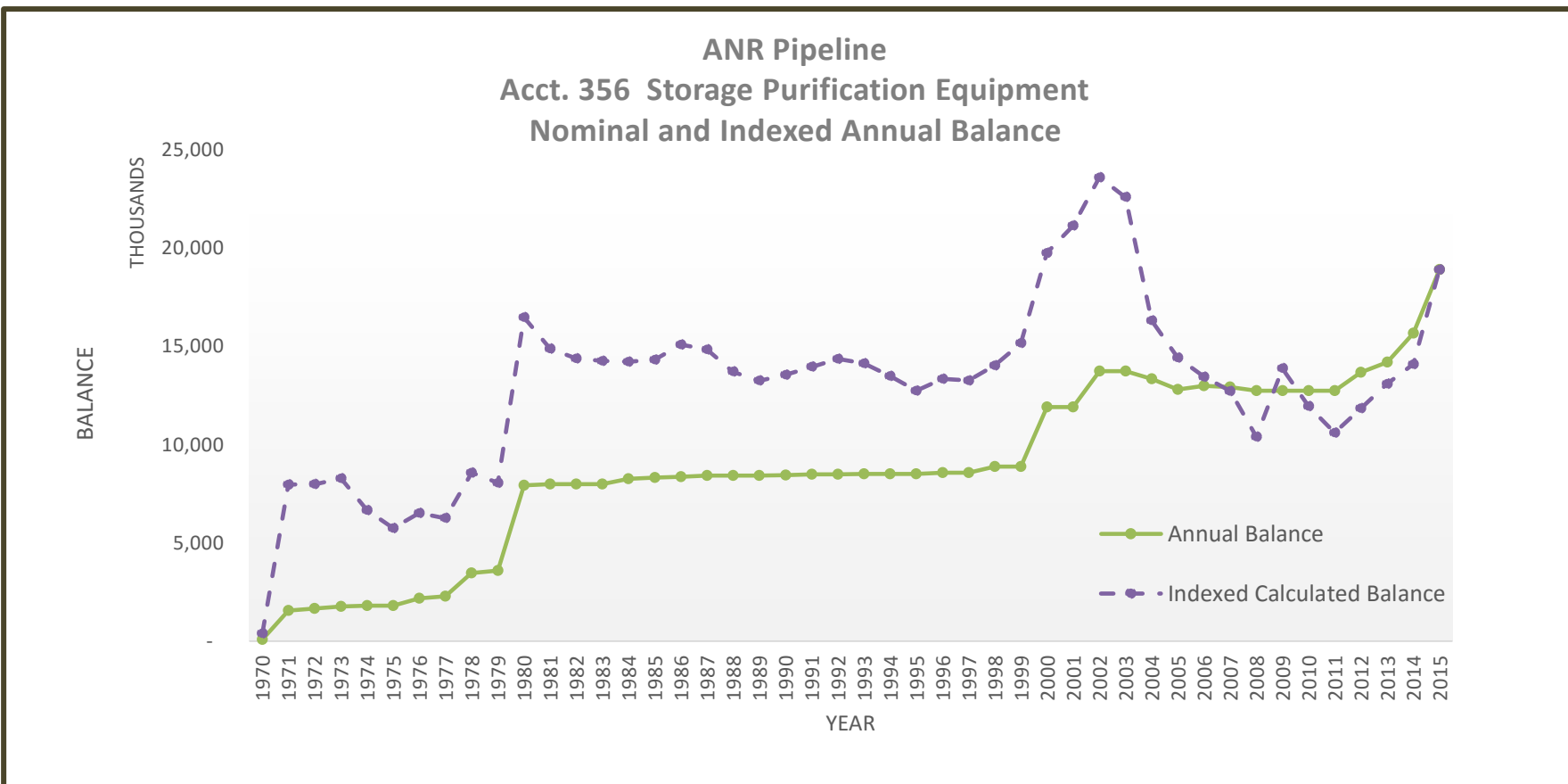
Plant Balances

Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1951	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-
1970	69,117	-	-	-	69,117	69,117	217,102
1971	1,486,203	-	-	-	1,486,203	1,555,320	461,294
1972	96,713	-	-	-	96,713	1,652,033	402,476
1973	111,836	-	-	-	111,836	1,763,869	315,435
1974	32,460	-	-	-	32,460	1,796,329	367,502
1975	-	-	-	-	-	1,796,329	1,778,568
1976	371,302	-	-	-	371,302	2,167,631	1,966,997
1977	115,835	-	-	-	115,835	2,283,466	1,627,012
1978	1,176,077	-	-	-	1,176,077	3,459,543	4,392,011
1979	121,644	-	-	-	121,644	3,581,187	4,818,607
1980	4,791,825	-	(449,477)	-	4,342,348	7,923,535	5,645,937
1981	2,889,879	-	(2,832,160)	-	57,719	7,981,254	10,580,802
1982	(449,477)	-	449,477	-	-	7,981,254	11,171,528
1983	(2,832,160)	-	2,832,160	-	-	7,981,254	10,981,790
1984	277,285	-	-	-	277,285	8,258,539	10,913,431
1985	60,877	-	-	-	60,877	8,319,416	11,038,190
1986	39,879	-	-	-	39,879	8,359,295	11,289,664
1987	64,339	-	(1,163)	-	63,176	8,422,471	11,341,307
1988	-	-	-	-	-	8,422,471	11,342,125
1989	-	-	1,163	(1,163)	-	8,422,471	11,623,433
1990	9,026	-	-	-	9,026	8,431,497	11,636,897

**ANR Pipeline Company
 Account 356 Storage Purification Equipment**

Plant Balances

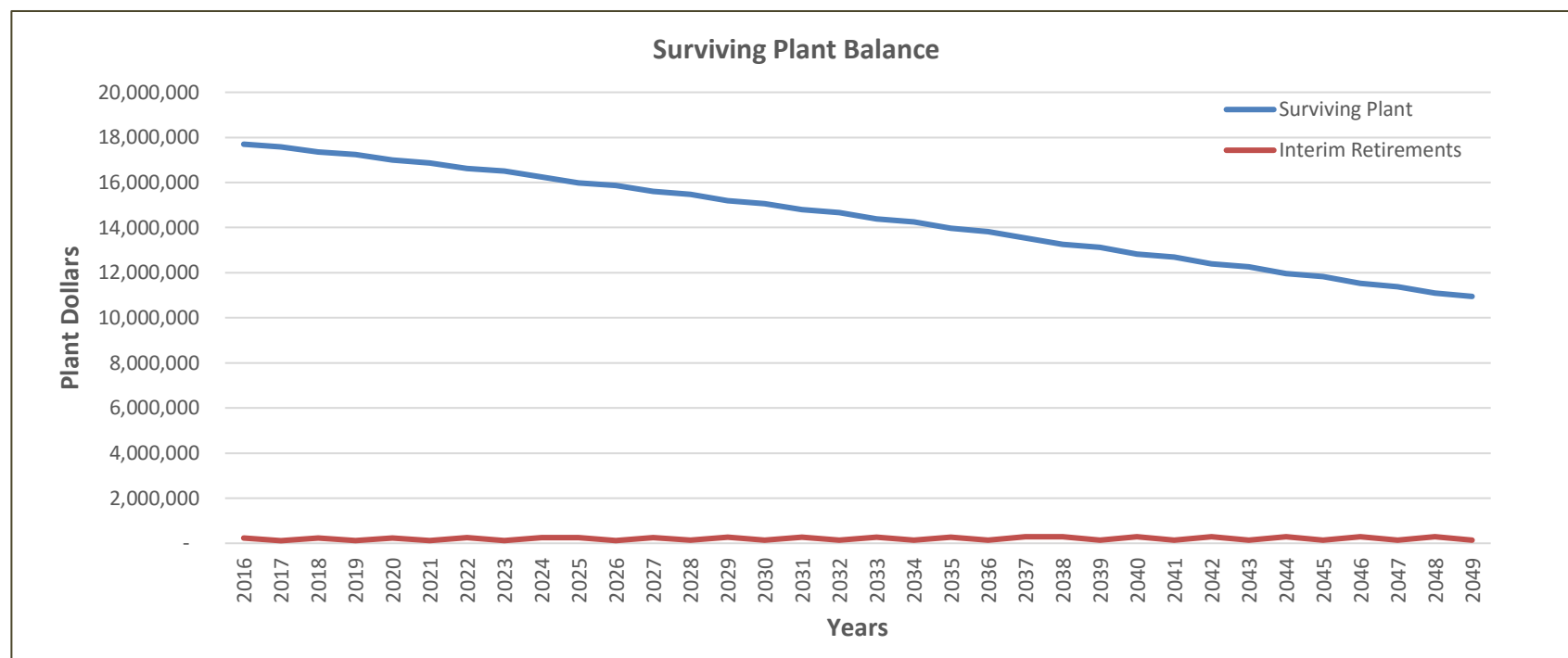
Year	Additions	Retirements	Adjustments	Transfers	Net Additions	Calculated Balance	Form 2 EoY Balance
1991	52,047	-	-	-	52,047	8,483,544	12,026,871
1992	-	-	-	-	-	8,483,544	12,054,388
1993	5,882	-	-	-	5,882	8,489,426	12,169,721
1994	-	-	-	-	-	8,489,426	12,380,758
1995	-	-	-	-	-	8,489,426	12,676,515
1996	73,688	-	-	-	73,688	8,563,114	12,813,280
1997	3,449	-	-	-	3,449	8,566,563	13,393,101
1998	367,727	-	(71,474)	-	296,253	8,862,816	14,043,629
1999	178,609	-	71,474	(250,083)	-	8,862,816	14,172,062
2000	3,028,807	-	-	-	3,028,807	11,891,623	14,228,490
2001	-	-	-	-	-	11,891,623	14,228,490
2002	1,932,575	-	(89,233)	-	1,843,342	13,734,965	14,495,901
2003	(89,233)	-	89,233	-	-	13,734,965	14,942,402
2004	797,363	1,202,184	-	-	797,363	13,330,144	11,832,147
2005	92,619	634,225	-	-	92,619	12,788,538	11,787,339
2006	216,078	2,248	(12,000)	-	204,078	12,990,368	12,043,725
2007	(12,000)	72,271	12,000	-	-	12,918,097	12,507,646
2008	9,648	205,514	-	-	9,648	12,722,231	12,490,356
2009	-	-	-	-	-	12,722,231	12,467,198
2010	-	-	-	-	-	12,722,231	12,467,198
2011	-	-	-	-	-	12,722,231	12,467,198
2012	952,787	-	-	-	952,787	13,675,018	12,467,198
2013	505,276	-	-	-	505,276	14,180,294	12,912,356
2014	1,477,839	-	-	-	1,477,839	15,658,133	12,912,356
2015	3,244,234	-	-	-	3,244,234	18,902,367	16,156,590
Total	21,270,055	2,116,442	-	(251,246)	21,018,809	-	-



ANR Pipeline Company Account 356 Storage Purification Equipment

Average Remaining Life Calculation

	Year	Age	Age as % of ASL	65-S0		Interim Retirements
				Percent Surviving	Surviving Plant	
1	2015	29.66663232	45.6%	85%	17,924,149	
2	2016	30.66663232	47.2%	84%	17,698,379	225,769
3	2017	31.66663232	48.7%	84%	17,583,591	114,789
4	2018	32.66663232	50.3%	83%	17,350,347	233,244
5	2019	33.66663232	51.8%	82%	17,231,948	118,400
6	2020	34.66663232	53.3%	81%	16,991,730	240,218
7	2021	35.66663232	54.9%	80%	16,869,965	121,765
8	2022	36.66663232	56.4%	79%	16,623,257	246,708
9	2023	37.66663232	57.9%	78%	16,498,366	124,891
10	2024	38.66663232	59.5%	77%	16,245,638	252,728
11	2025	39.66663232	61.0%	76%	15,989,152	256,486
12	2026	40.66663232	62.6%	75%	15,859,562	129,590
13	2027	41.66663232	64.1%	74%	15,597,814	261,748
14	2028	42.66663232	65.6%	74%	15,465,704	132,110
15	2029	43.66663232	67.2%	72%	15,199,135	266,569
16	2030	44.66663232	68.7%	72%	15,064,724	134,411
17	2031	45.66663232	70.3%	70%	14,793,766	270,957
18	2032	46.66663232	71.8%	70%	14,657,268	136,498
19	2033	47.66663232	73.3%	68%	14,382,348	274,919
20	2034	48.66663232	74.9%	68%	14,243,974	138,374
21	2035	49.66663232	76.4%	66%	13,965,511	278,463
22	2036	50.66663232	77.9%	66%	13,825,469	140,042
23	2037	51.66663232	79.5%	64%	13,543,877	281,592
24	2038	52.66663232	81.0%	63%	13,260,427	283,451
25	2039	53.66663232	82.6%	62%	13,118,061	142,366
26	2040	54.66663232	84.1%	61%	12,832,160	285,901
27	2041	55.66663232	85.6%	60%	12,688,670	143,490
28	2042	56.66663232	87.2%	59%	12,400,722	287,948
29	2043	57.66663232	88.7%	58%	12,256,309	144,413
30	2044	58.66663232	90.3%	57%	11,966,713	289,595
31	2045	59.66663232	91.8%	56%	11,821,576	145,138
32	2046	60.66663232	93.3%	55%	11,530,730	290,845
33	2047	61.66663232	94.9%	54%	11,385,067	145,664
34	2048	62.66663232	96.4%	53%	11,093,367	291,699
35	2049	63.66663232	97.9%	52%	10,947,375	145,992
					508,906,855	
					Interim Retirements	6,976,773
					Average Remaining Life	28.39 Interim Retirements



**ANR Pipeline Company
 Account 356 Storage Purification Equipment**

Conformance Indices

Curve	ASLs						
	50	55	60	65	70	75	80
L0	1.0	0.9	0.9	0.9	0.9	0.9	0.9
L1	0.9	0.9	0.9	0.9	0.9	0.9	0.8
L2	31.0	301.6	49.7	25.0	18.4	15.4	13.7
L3	102.9	24.8	16.3	13.1	11.6	10.8	10.3
L4	19.4	13.3	11.3	10.2	9.7	9.4	9.2
L5	12.4	10.2	9.4	9.1	9.0	9.0	8.9
S0	17.8	28.9	61.4	15594.5	81.4	43.5	31.4
S1	48.2	341.6	45.6	26.2	19.9	16.8	14.9
S2	92.3	27.7	18.3	14.4	12.6	11.5	10.8
S3	25.6	15.5	12.4	10.9	10.1	9.7	9.4
S4	14.0	10.8	9.8	9.3	9.1	9.0	9.0
S5	13.3	16.0	16.9	17.2	17.2	17.3	17.3
S6	15.9	17.2	17.3	17.3	17.3	17.3	17.3
R1	4.5	4.9	5.3	5.8	6.1	6.5	6.8
R2	5.5	6.2	6.9	7.6	8.2	8.7	9.2
R3	7.0	8.1	9.2	10.2	11.0	11.7	12.4
R4	8.7	10.4	11.9	13.2	14.1	14.8	15.4
R5	11.8	14.3	15.8	16.6	17.0	17.1	17.2
MAX	103	342	61	15594	81	44	31