Q. Please provide the "Long Term Asset Management Plan" prepared for Churchill Falls in 2012.

A. Please see PUB-Nalcor-181, Attachment 1 for the Churchill Falls Long Term Asset Management Plan, prepared in 2012.

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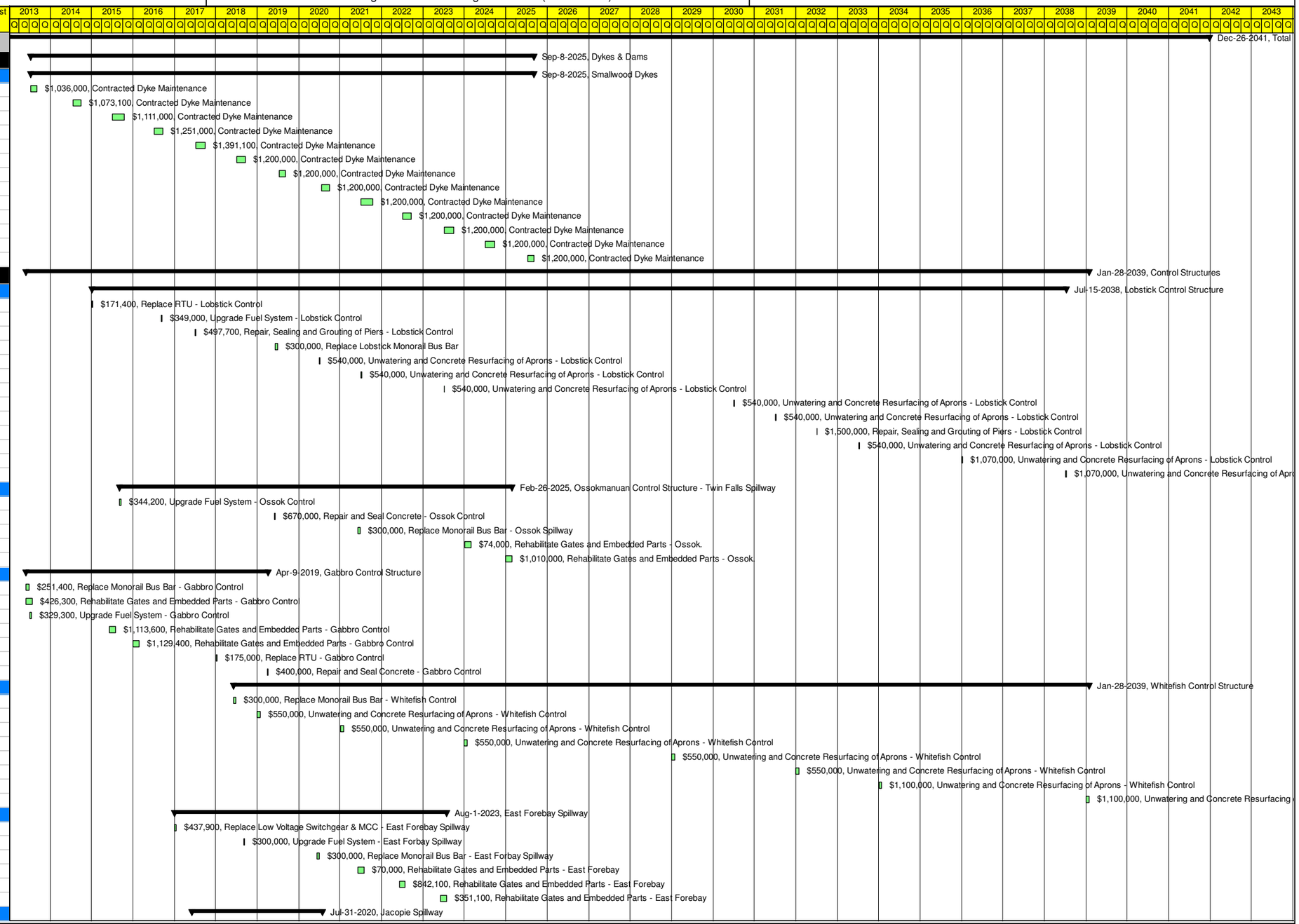
Churchill Falls Asset Management Plan

Long Term Asset Management Plan (2013 - 2043)

Aug-1-2012

REV. 2.0

Activity Name	Budgeted Total Cost
Total	$751,298,414
Dykes & Dams	$15,462,200
Smallwood Dykes	$15,462,200
Contracted Dyke Maintenance	$1,036,000
Contracted Dyke Maintenance	$1,073,100
Contracted Dyke Maintenance	$1,111,000
Contracted Dyke Maintenance	$1,251,000
Contracted Dyke Maintenance	$1,391,100
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Contracted Dyke Maintenance	$1,200,000
Control Structures	$24,328,300
Lobstick Control Structure	$8,198,100
Replace RTU - Lobstick Control	$171,400
Upgrade Fuel System - Lobstick Control	$349,000
Repair, Sealing and Grouting of Piers - Lobstick Contr	$497,700
Replace Lobstick Monorail Bus Bar	$300,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Repair, Sealing and Grouting of Piers - Lobstick Contr	$1,500,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$540,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$1,070,000
Unwatering and Concrete Resurfacing of Aprons - Lc	$1,070,000
Ossokmanuan Control Structure - Twin Falls Sp	$2,398,200
Upgrade Fuel System - Ossok Control	$344,200
Repair and Seal Concrete - Ossok Control	$670,000
Replace Monorail Bus Bar - Ossok Spillway	$300,000
Rehabilitate Gates and Embedded Parts - Ossok.	$74,000
Rehabilitate Gates and Embedded Parts - Ossok.	$1,010,000
Gabbro Control Structure	$3,825,000
Replace Monorail Bus Bar - Gabbro Control	$251,400
Rehabilitate Gates and Embedded Parts - Gabbro Cc	$426,300
Upgrade Fuel System - Gabbro Control	$329,300
Rehabilitate Gates and Embedded Parts - Gabbro Cc	$1,113,600
Rehabilitate Gates and Embedded Parts - Gabbro Cc	$1,129,400
Replace RTU - Gabbro Control	$175,000
Repair and Seal Concrete - Gabbro Control	$400,000
Whitefish Control Structure	$5,250,000
Replace Monorail Bus Bar - Whitefish Control	$300,000
Unwatering and Concrete Resurfacing of Aprons - W	$550,000
Unwatering and Concrete Resurfacing of Aprons - W	$550,000
Unwatering and Concrete Resurfacing of Aprons - W	$550,000
Unwatering and Concrete Resurfacing of Aprons - W	$550,000
Unwatering and Concrete Resurfacing of Aprons - W	$550,000
Unwatering and Concrete Resurfacing of Aprons - W	$1,100,000
Unwatering and Concrete Resurfacing of Aprons - W	$1,100,000
East Forebay Spillway	$2,301,100
Replace Low Voltage Switchgear & MCC - East Forel	$437,900
Upgrade Fuel System - East Forbay Spillway	$300,000
Replace Monorail Bus Bar - East Forbay Spillway	$300,000
Rehabilitate Gates and Embedded Parts - East Forel	$70,000
Rehabilitate Gates and Embedded Parts - East Forel	$842,100
Rehabilitate Gates and Embedded Parts - East Forel	$351,100
Jacopie Spillway	$2,355,900



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

nalcor energy CHURCHILL FALLS

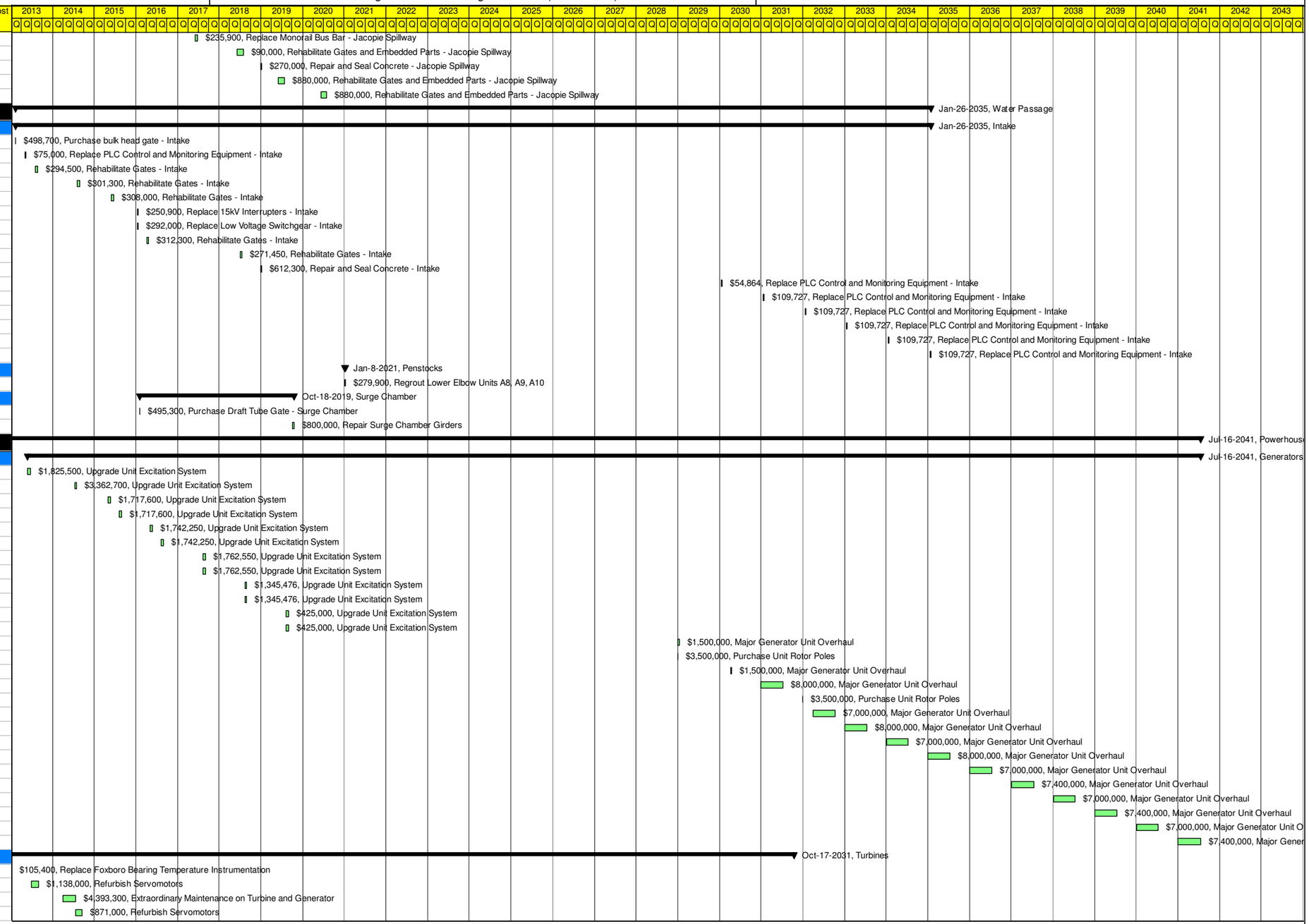
Churchill Falls Asset Management Plan

Long Term Asset Management Plan (2013 - 2043)

Aug-1-2012

REV. 2.0

Activity Name	Budgeted Total Cost
Replace Monorail Bus Bar - Jacopie Spillway	$235,900
Rehabilitate Gates and Embedded Parts - Jacopie Sp	$90,000
Repair and Seal Concrete - Jacopie Spillway	$270,000
Rehabilitate Gates and Embedded Parts - Jacopie Sp	$880,000
Rehabilitate Gates and Embedded Parts - Jacopie Sp	$880,000
Water Passage	$5,395,149
Intake	$3,819,949
Purchase bulk head gate - Intake	$498,700
Replace PLC Control and Monitoring Equipment - Inta	$75,000
Rehabilitate Gates - Intake	$294,500
Rehabilitate Gates - Intake	$301,300
Rehabilitate Gates - Intake	$308,000
Replace 15kV Interrupters - Intake	$250,900
Replace Low Voltage Switchgear - Intake	$292,000
Rehabilitate Gates - Intake	$312,300
Rehabilitate Gates - Intake	$271,450
Repair and Seal Concrete - Intake	$612,300
Replace PLC Control and Monitoring Equipment - Inta	$54,864
Replace PLC Control and Monitoring Equipment - Inta	$109,727
Replace PLC Control and Monitoring Equipment - Inta	$109,727
Replace PLC Control and Monitoring Equipment - Inta	$109,727
Replace PLC Control and Monitoring Equipment - Inta	$109,727
Replace PLC Control and Monitoring Equipment - Inta	$109,727
Penstocks	$279,900
Regrout Lower Elbow Units A8, A9, A10	$279,900
Surge Chamber	$1,295,300
Purchase Draft Tube Gate - Surge Chamber	$495,300
Repair Surge Chamber Girders	$800,000
Powerhouse	$410,076,576
Generators	$110,373,952
Upgrade Unit Excitation System	$1,825,500
Upgrade Unit Excitation System	$3,362,700
Upgrade Unit Excitation System	$1,717,600
Upgrade Unit Excitation System	$1,717,600
Upgrade Unit Excitation System	$1,742,250
Upgrade Unit Excitation System	$1,742,250
Upgrade Unit Excitation System	$1,762,550
Upgrade Unit Excitation System	$1,762,550
Upgrade Unit Excitation System	$1,345,476
Upgrade Unit Excitation System	$1,345,476
Upgrade Unit Excitation System	$425,000
Upgrade Unit Excitation System	$425,000
Major Generator Unit Overhaul	$1,500,000
Purchase Unit Rotor Poles	$3,500,000
Major Generator Unit Overhaul	$1,500,000
Major Generator Unit Overhaul	$8,000,000
Purchase Unit Rotor Poles	$3,500,000
Major Generator Unit Overhaul	$7,000,000
Major Generator Unit Overhaul	$8,000,000
Major Generator Unit Overhaul	$7,000,000
Major Generator Unit Overhaul	$8,000,000
Major Generator Unit Overhaul	$7,000,000
Major Generator Unit Overhaul	$7,400,000
Major Generator Unit Overhaul	$7,000,000
Major Generator Unit Overhaul	$7,400,000
Major Generator Unit Overhaul	$7,000,000
Major Generator Unit Overhaul	$7,400,000
Turbines	$144,839,100
Replace Foxboro Bearing Temperature Instrumentati	$105,400
Refurbish Servomotors	$1,138,000
Extraordinary Maintenance on Turbine and Generator	$4,393,300
Refurbish Servomotors	$871,000



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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Churchill Falls Asset Management Plan

Long Term Asset Management Plan (2013 - 2043)

Aug-1-2012

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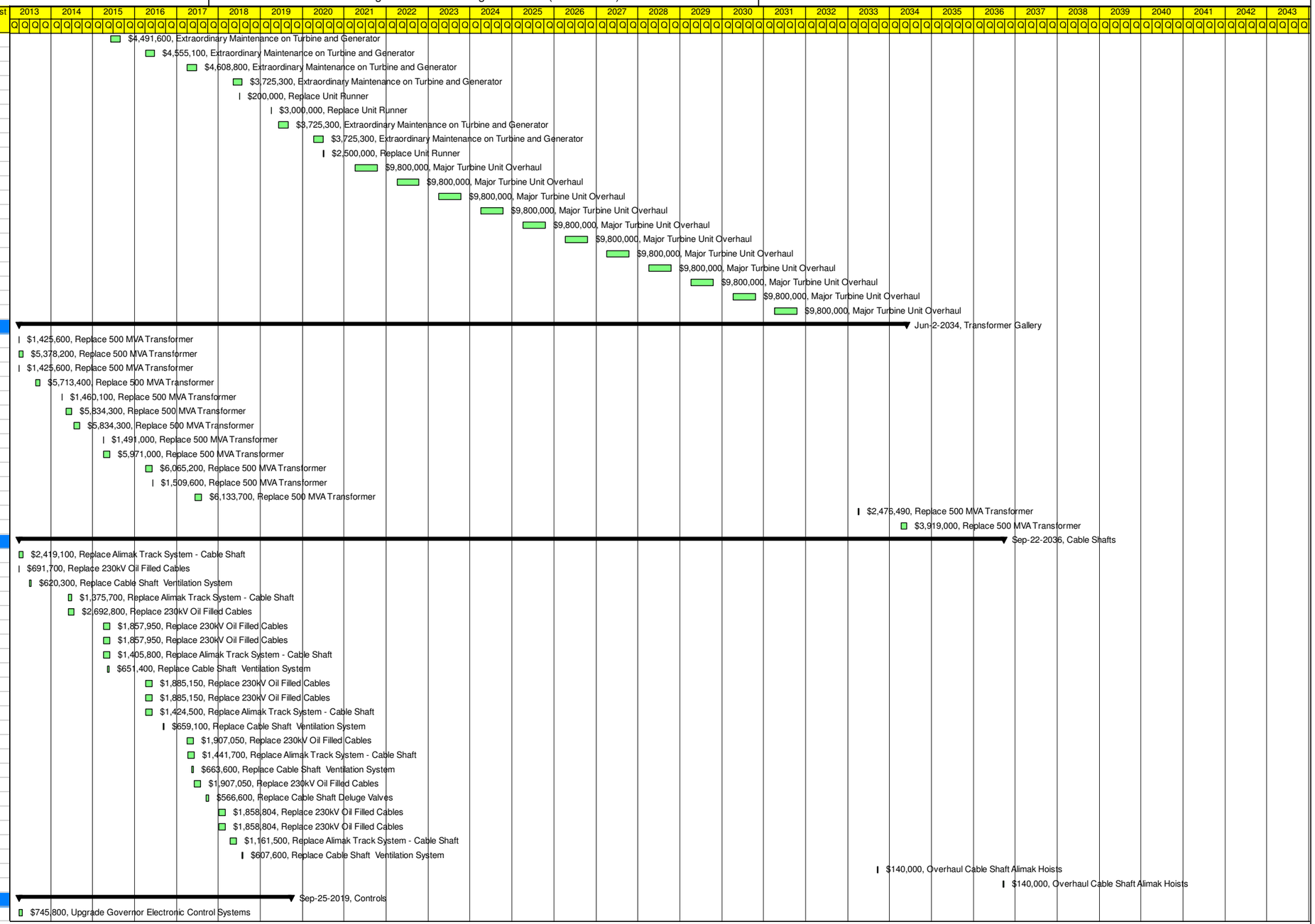
Activity Name	Budgeted Total Cost
Extraordinary Maintenance on Turbine and Generator	$4,491,600
Extraordinary Maintenance on Turbine and Generator	$4,555,100
Extraordinary Maintenance on Turbine and Generator	$4,608,800
Extraordinary Maintenance on Turbine and Generator	$3,725,300
Replace Unit Runner	$200,000
Replace Unit Runner	$3,000,000
Extraordinary Maintenance on Turbine and Generator	$3,725,300
Extraordinary Maintenance on Turbine and Generator	$3,725,300
Replace Unit Runner	$2,500,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Major Turbine Unit Overhaul	$9,800,000
Transformer Gallery	$54,637,490
Replace 500 MVA Transformer	$1,425,600
Replace 500 MVA Transformer	$5,378,200
Replace 500 MVA Transformer	$1,425,600
Replace 500 MVA Transformer	$5,713,400
Replace 500 MVA Transformer	$1,460,100
Replace 500 MVA Transformer	$5,834,300
Replace 500 MVA Transformer	$5,834,300
Replace 500 MVA Transformer	$1,491,000
Replace 500 MVA Transformer	$5,971,000
Replace 500 MVA Transformer	$6,065,200
Replace 500 MVA Transformer	$1,509,600
Replace 500 MVA Transformer	$6,133,700
Replace 500 MVA Transformer	$2,476,490
Replace 500 MVA Transformer	$3,919,000
Cable Shafts	$31,679,308
Replace Alimak Track System - Cable Shaft	$2,419,100
Replace 230kV Oil Filled Cables	$691,700
Replace Cable Shaft Ventilation System	$620,300
Replace Alimak Track System - Cable Shaft	$1,375,700
Replace 230kV Oil Filled Cables	$2,692,800
Replace 230kV Oil Filled Cables	$1,857,950
Replace 230kV Oil Filled Cables	$1,857,950
Replace Alimak Track System - Cable Shaft	$1,405,800
Replace Cable Shaft Ventilation System	$651,400
Replace 230kV Oil Filled Cables	$1,885,150
Replace 230kV Oil Filled Cables	$1,885,150
Replace Alimak Track System - Cable Shaft	$1,424,500
Replace Cable Shaft Ventilation System	$659,100
Replace 230kV Oil Filled Cables	$1,907,050
Replace Alimak Track System - Cable Shaft	$1,441,700
Replace Cable Shaft Ventilation System	$663,600
Replace 230kV Oil Filled Cables	$1,907,050
Replace Cable Shaft Deluge Valves	$566,600
Replace 230kV Oil Filled Cables	$1,858,804
Replace 230kV Oil Filled Cables	$1,858,804
Replace Alimak Track System - Cable Shaft	$1,161,500
Replace Cable Shaft Ventilation System	$607,600
Overhaul Cable Shaft Alimak Hoists	$140,000
Overhaul Cable Shaft Alimak Hoists	$140,000
Controls	$38,189,346
Upgrade Governor Electronic Control Systems	$745,800



Actual Work | Critical Remaining Work | Summary
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TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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Churchill Falls Asset Management Plan

Long Term Asset Management Plan (2013 - 2043)

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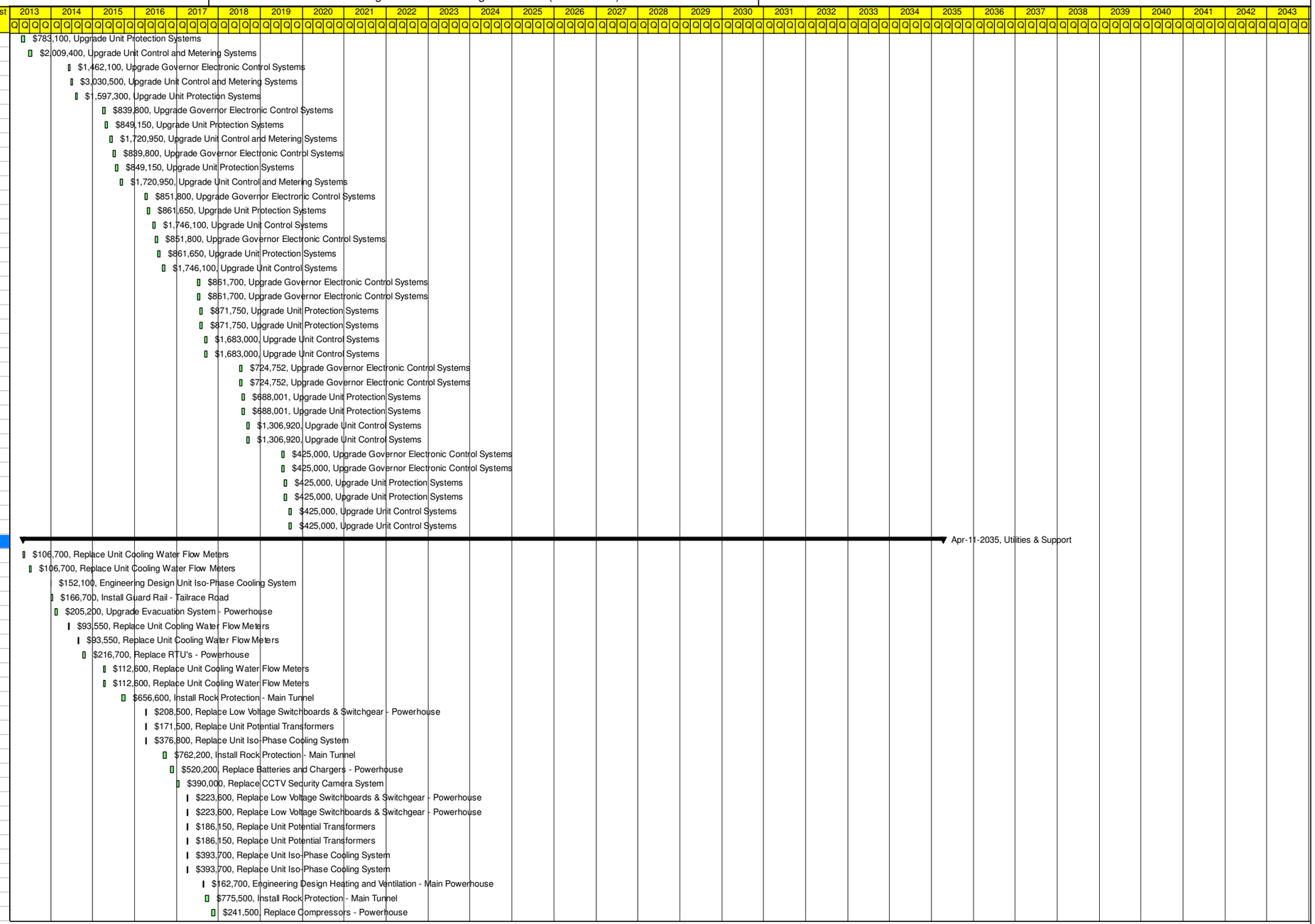
Activity Name	Budgeted Total Cost
Upgrade Unit Protection Systems	$783,100
Upgrade Unit Control and Metering Systems	$2,009,400
Upgrade Governor Electronic Control Systems	$1,462,100
Upgrade Unit Control and Metering Systems	$3,030,500
Upgrade Unit Protection Systems	$1,597,300
Upgrade Governor Electronic Control Systems	$839,800
Upgrade Unit Protection Systems	$849,150
Upgrade Unit Control and Metering Systems	$1,720,950
Upgrade Governor Electronic Control Systems	$839,800
Upgrade Unit Protection Systems	$849,150
Upgrade Unit Control and Metering Systems	$1,720,950
Upgrade Governor Electronic Control Systems	$851,800
Upgrade Unit Protection Systems	$861,650
Upgrade Unit Control Systems	$1,746,100
Upgrade Governor Electronic Control Systems	$851,800
Upgrade Unit Protection Systems	$861,650
Upgrade Unit Control Systems	$1,746,100
Upgrade Governor Electronic Control Systems	$861,700
Upgrade Governor Electronic Control Systems	$861,700
Upgrade Unit Protection Systems	$871,750
Upgrade Unit Protection Systems	$871,750
Upgrade Unit Control Systems	$1,683,000
Upgrade Unit Control Systems	$1,683,000
Upgrade Governor Electronic Control Systems	$724,752
Upgrade Governor Electronic Control Systems	$724,752
Upgrade Unit Protection Systems	$688,001
Upgrade Unit Protection Systems	$688,001
Upgrade Unit Control Systems	$1,306,920
Upgrade Unit Control Systems	$1,306,920
Upgrade Governor Electronic Control Systems	$425,000
Upgrade Governor Electronic Control Systems	$425,000
Upgrade Unit Protection Systems	$425,000
Upgrade Unit Protection Systems	$425,000
Upgrade Unit Control Systems	$425,000
Upgrade Unit Control Systems	$425,000
Utilities & Support	$18,137,180
Replace Unit Cooling Water Flow Meters	$106,700
Replace Unit Cooling Water Flow Meters	$106,700
Engineering Design Unit Iso-Phase Cooling System	$152,100
Install Guard Rail - Tailrace Road	$166,700
Upgrade Evacuation System - Powerhouse	$205,200
Replace Unit Cooling Water Flow Meters	$93,550
Replace Unit Cooling Water Flow Meters	$93,550
Replace RTU's - Powerhouse	$216,700
Replace Unit Cooling Water Flow Meters	$112,600
Replace Unit Cooling Water Flow Meters	$112,600
Install Rock Protection - Main Tunnel	$656,600
Replace Low Voltage Switchboards & Switchgear - Pc	$208,500
Replace Unit Potential Transformers	$171,500
Replace Unit Iso-Phase Cooling System	$376,800
Install Rock Protection - Main Tunnel	$762,200
Replace Batteries and Chargers - Powerhouse	$520,200
Replace CCTV Security Camera System	$390,000
Replace Low Voltage Switchboards & Switchgear - Pc	$223,600
Replace Low Voltage Switchboards & Switchgear - Pc	$223,600
Replace Unit Potential Transformers	$186,150
Replace Unit Potential Transformers	$186,150
Replace Unit Iso-Phase Cooling System	$393,700
Replace Unit Iso-Phase Cooling System	$393,700
Engineering Design Heating and Ventilation - Main Po	$162,700
Install Rock Protection - Main Tunnel	$775,500
Replace Compressors - Powerhouse	$241,500



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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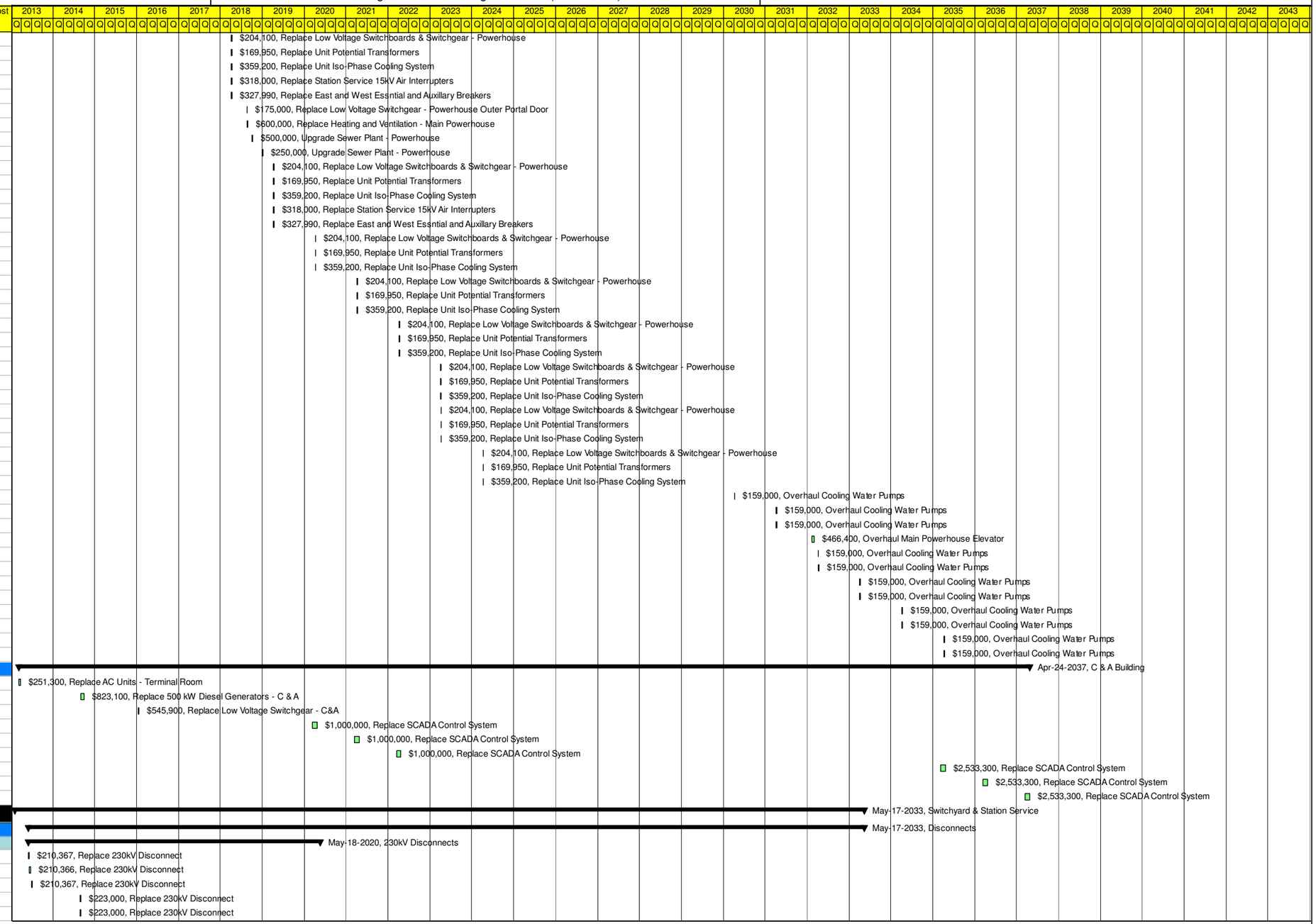
Churchill Falls Asset Management Plan

Long Term Asset Management Plan (2013 - 2043)

Aug-1-2012

REV. 2.0

Activity Name	Budgeted Total Cost
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Station Service 15kV Air Interrupters	$318,000
Replace East and West Essntial and Auxillary Breake	$327,990
Replace Low Voltage Switchgear - Powerhouse Oute	$175,000
Replace Heating and Ventilation - Main Powerhouse	$600,000
Upgrade Sewer Plant - Powerhouse	$500,000
Upgrade Sewer Plant - Powerhouse	$250,000
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Station Service 15kV Air Interrupters	$318,000
Replace East and West Essntial and Auxillary Breake	$327,990
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Replace Low Voltage Switchboards & Switchgear - Pc	$204,100
Replace Unit Potential Transformers	$169,950
Replace Unit Iso-Phase Cooling System	$359,200
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Main Powerhouse Elevator	$466,400
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
Overhaul Cooling Water Pumps	$159,000
C & A Building	$12,220,200
Replace AC Units - Terminal Room	$251,300
Replace 500 kW Diesel Generators - C & A	$823,100
Replace Low Voltage Switchgear - C&A	$545,900
Replace SCADA Control System	$1,000,000
Replace SCADA Control System	$1,000,000
Replace SCADA Control System	$1,000,000
Replace SCADA Control System	$2,533,300
Replace SCADA Control System	$2,533,300
Replace SCADA Control System	$2,533,300
Switchyard & Station Service	$179,009,048
Disconnects	$15,947,238
230kV Disconnects	$6,721,040
Replace 230kV Disconnect	$210,367
Replace 230kV Disconnect	$210,366
Replace 230kV Disconnect	$210,367
Replace 230kV Disconnect	$223,000
Replace 230kV Disconnect	$223,000



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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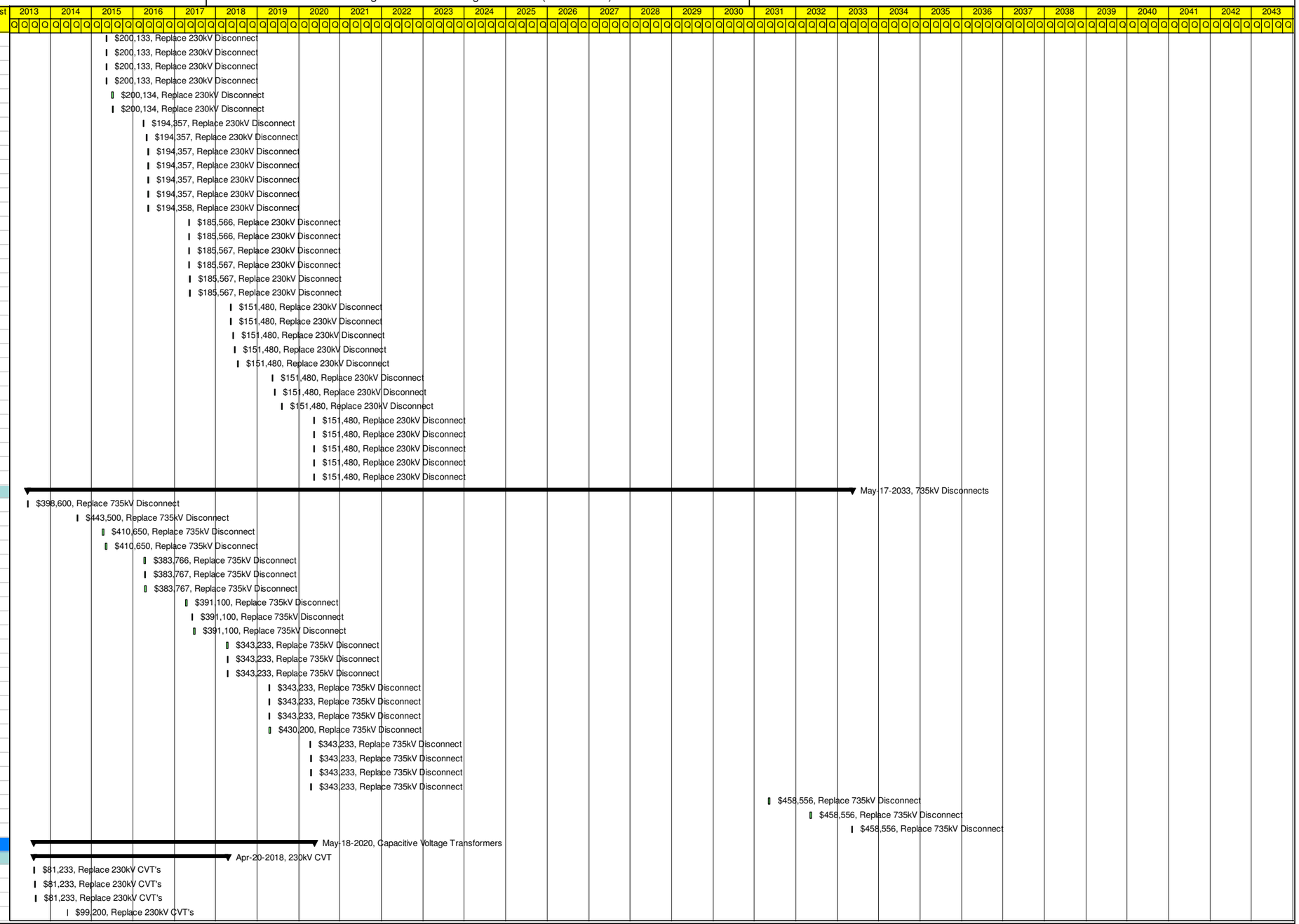
Activity Name	Budgeted Total Cost
Replace 230kV Disconnect	$200,133
Replace 230kV Disconnect	$200,133
Replace 230kV Disconnect	$200,133
Replace 230kV Disconnect	$200,133
Replace 230kV Disconnect	$200,134
Replace 230kV Disconnect	$200,134
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,357
Replace 230kV Disconnect	$194,358
Replace 230kV Disconnect	$185,566
Replace 230kV Disconnect	$185,566
Replace 230kV Disconnect	$185,567
Replace 230kV Disconnect	$185,567
Replace 230kV Disconnect	$185,567
Replace 230kV Disconnect	$185,567
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
Replace 230kV Disconnect	$151,480
735kV Disconnects	$9,226,198
Replace 735kV Disconnect	$398,600
Replace 735kV Disconnect	$443,500
Replace 735kV Disconnect	$410,650
Replace 735kV Disconnect	$410,650
Replace 735kV Disconnect	$383,766
Replace 735kV Disconnect	$383,767
Replace 735kV Disconnect	$383,767
Replace 735kV Disconnect	$391,100
Replace 735kV Disconnect	$391,100
Replace 735kV Disconnect	$391,100
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$430,200
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$343,233
Replace 735kV Disconnect	$458,556
Replace 735kV Disconnect	$458,556
Replace 735kV Disconnect	$458,556
Capacitive Voltage Transformers	$1,776,899
230kV CVT	$1,396,799
Replace 230kV CVT's	$81,233
Replace 230kV CVT's	$81,233
Replace 230kV CVT's	$81,233
Replace 230kV CVT's	$99,200



Actual Work | Critical Remaining Work | Summary
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TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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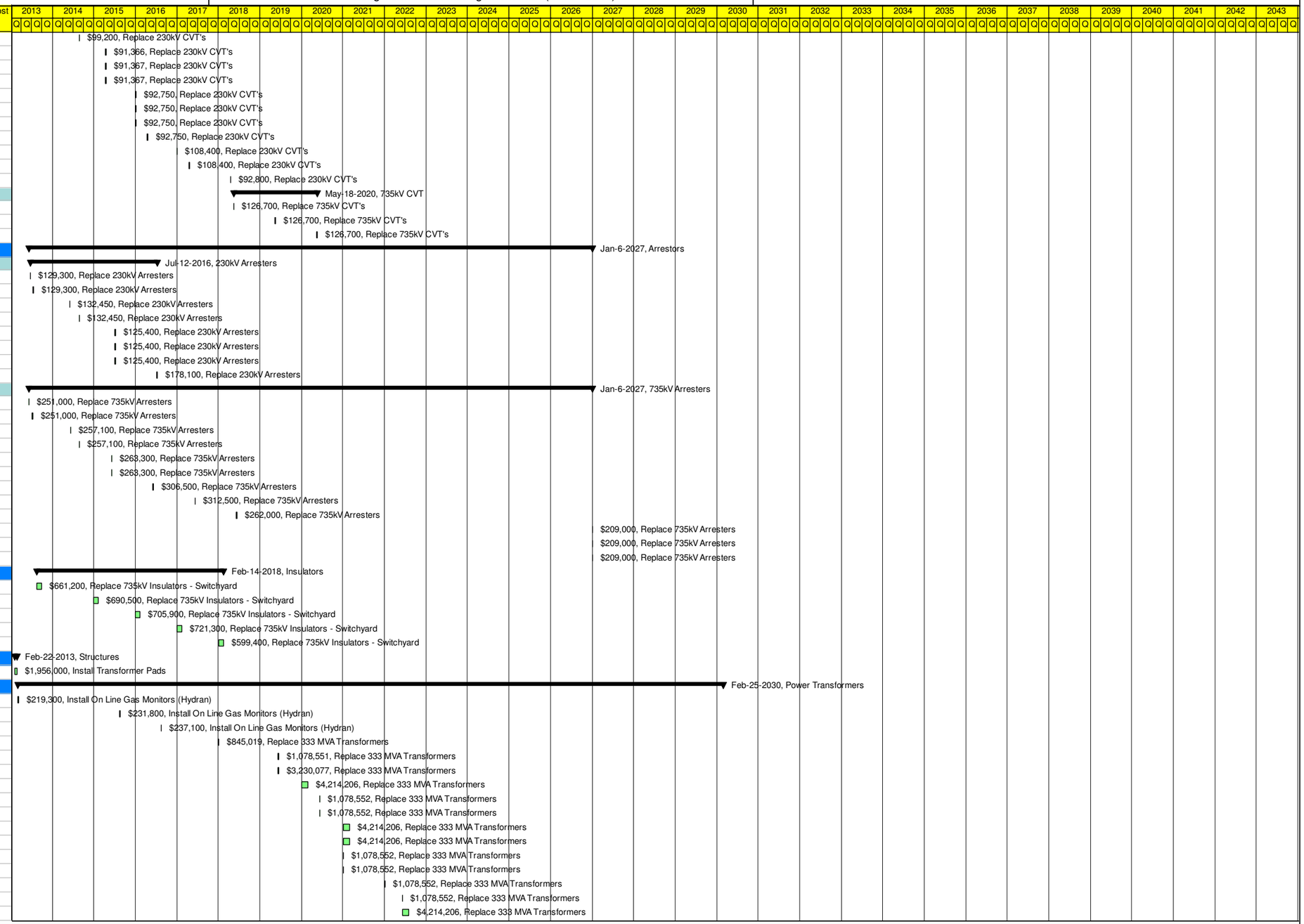
Long Term Asset Management Plan (2013 - 2043)

Aug-1-2012

REV. 2.0

Activity Name	Budgeted Total Cost
Replace 230kV CVT's	$99,200
Replace 230kV CVT's	$91,366
Replace 230kV CVT's	$91,367
Replace 230kV CVT's	$91,367
Replace 230kV CVT's	$92,750
Replace 230kV CVT's	$92,750
Replace 230kV CVT's	$92,750
Replace 230kV CVT's	$92,750
Replace 230kV CVT's	$108,400
Replace 230kV CVT's	$108,400
Replace 230kV CVT's	$92,800
735kV CVT	$380,100
Replace 735kV CVT's	$126,700
Replace 735kV CVT's	$126,700
Replace 735kV CVT's	$126,700
Arrestors	$4,128,600
230kV Arresters	$1,077,800
Replace 230kV Arresters	$129,300
Replace 230kV Arresters	$129,300
Replace 230kV Arresters	$132,450
Replace 230kV Arresters	$132,450
Replace 230kV Arresters	$125,400
Replace 230kV Arresters	$125,400
Replace 230kV Arresters	$125,400
Replace 230kV Arresters	$178,100
735kV Arresters	$3,050,800
Replace 735kV Arresters	$251,000
Replace 735kV Arresters	$251,000
Replace 735kV Arresters	$257,100
Replace 735kV Arresters	$257,100
Replace 735kV Arresters	$263,300
Replace 735kV Arresters	$263,300
Replace 735kV Arresters	$306,500
Replace 735kV Arresters	$312,500
Replace 735kV Arresters	$262,000
Replace 735kV Arresters	$209,000
Replace 735kV Arresters	$209,000
Replace 735kV Arresters	$209,000
Insulators	$3,378,300
Replace 735kV Insulators - Switchyard	$661,200
Replace 735kV Insulators - Switchyard	$690,500
Replace 735kV Insulators - Switchyard	$705,900
Replace 735kV Insulators - Switchyard	$721,300
Replace 735kV Insulators - Switchyard	$599,400
Structures	$1,956,000
Install Transformer Pads	$1,956,000
Power Transformers	$115,911,207
Install On Line Gas Monitors (Hydran)	$219,300
Install On Line Gas Monitors (Hydran)	$231,800
Install On Line Gas Monitors (Hydran)	$237,100
Replace 333 MVA Transformers	$845,019
Replace 333 MVA Transformers	$1,078,551
Replace 333 MVA Transformers	$3,230,077
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206



Actual Work | Critical Remaining Work | Summary
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TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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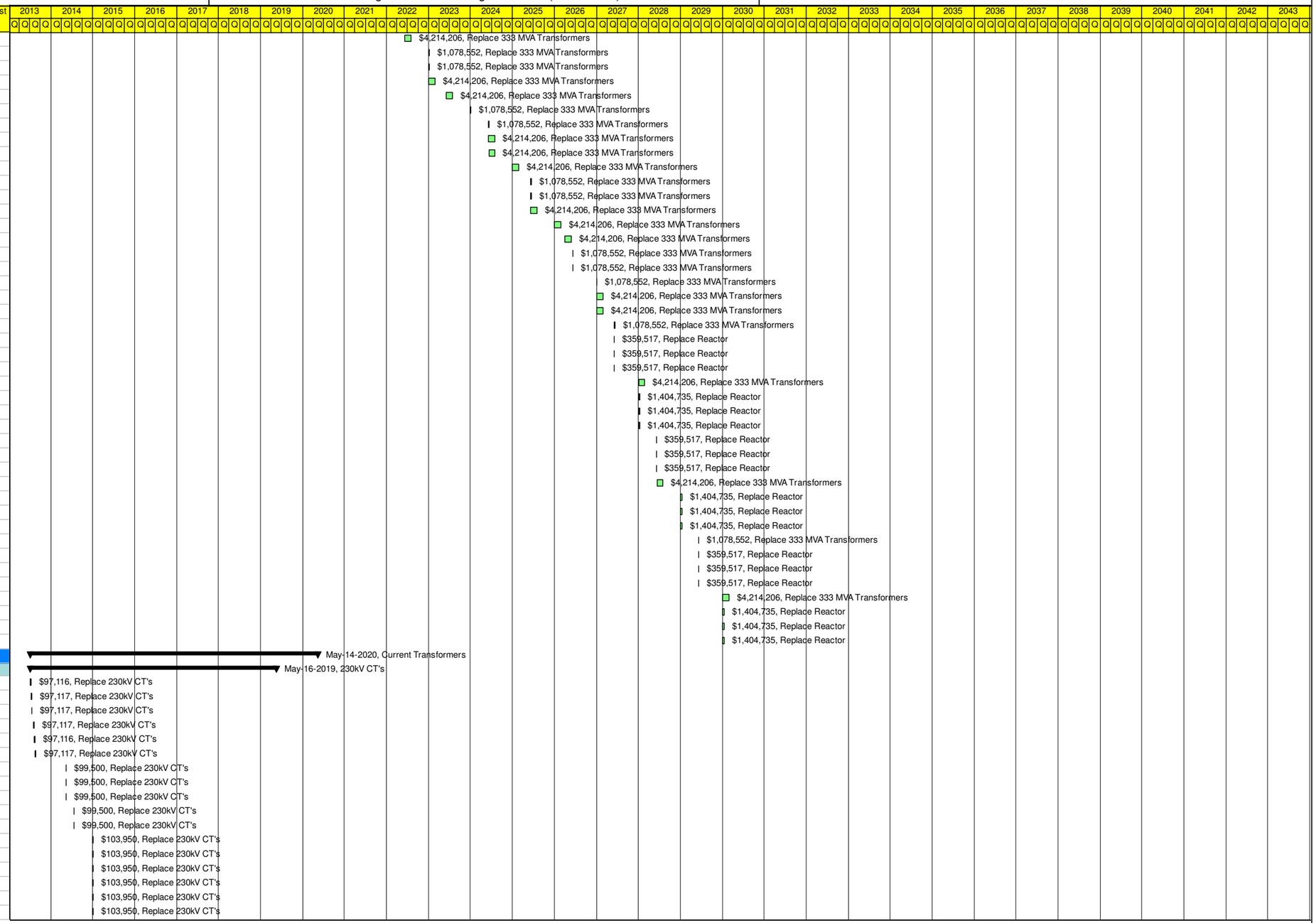
Activity Name	Budgeted Total Cost
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$1,078,552
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$4,214,206
Replace 333 MVA Transformers	$1,078,552
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace 333 MVA Transformers	$4,214,206
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace 333 MVA Transformers	$4,214,206
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Replace 333 MVA Transformers	$1,078,552
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace Reactor	$359,517
Replace 333 MVA Transformers	$4,214,206
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Replace Reactor	$1,404,735
Current Transformers	$14,155,779
230kV CT's	$3,780,929
Replace 230kV CT's	$97,116
Replace 230kV CT's	$97,117
Replace 230kV CT's	$97,117
Replace 230kV CT's	$97,117
Replace 230kV CT's	$97,116
Replace 230kV CT's	$97,117
Replace 230kV CT's	$99,500
Replace 230kV CT's	$99,500
Replace 230kV CT's	$99,500
Replace 230kV CT's	$99,500
Replace 230kV CT's	$99,500
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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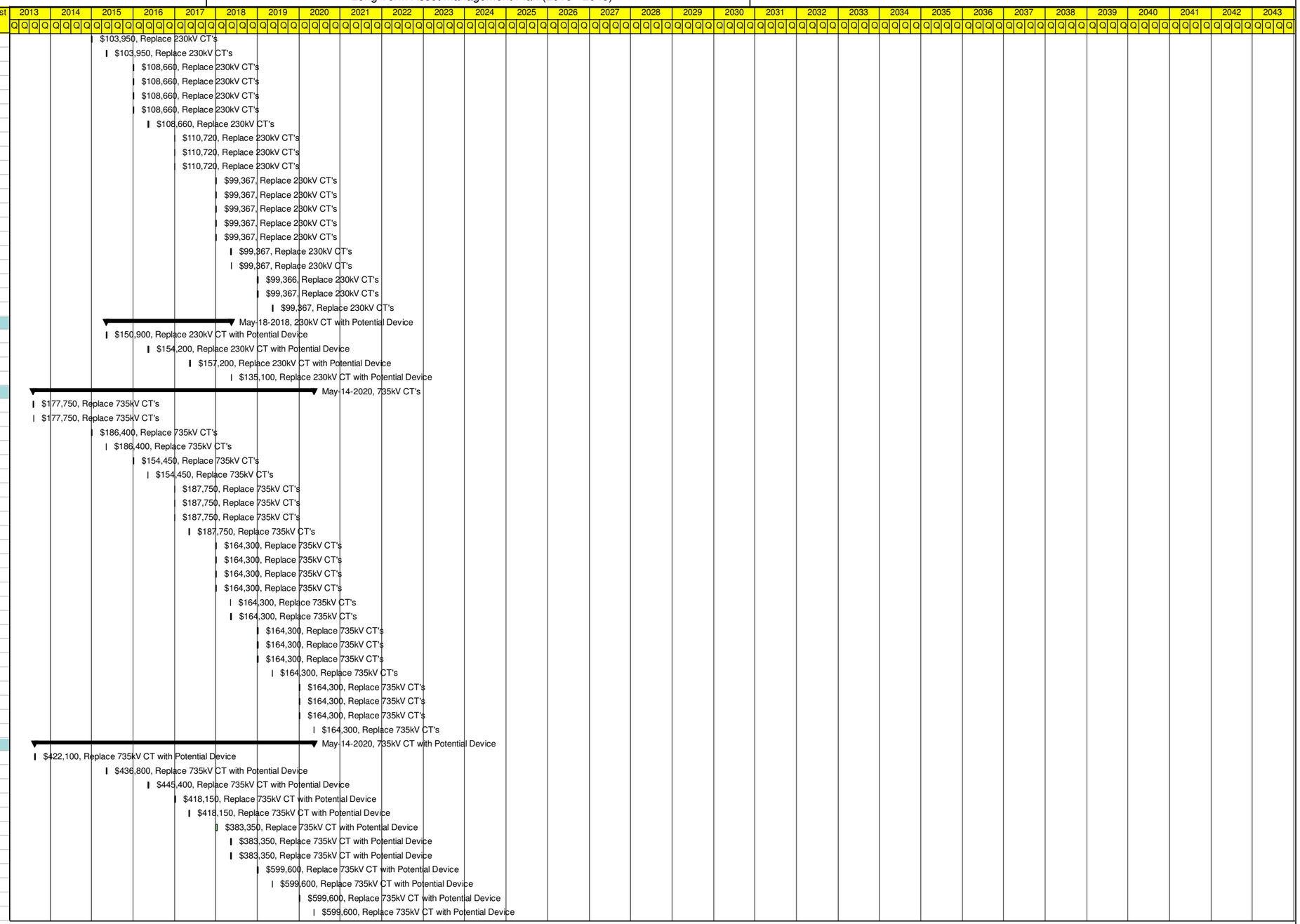
Activity Name	Budgeted Total Cost
Replace 230kV CT's	$103,950
Replace 230kV CT's	$103,950
Replace 230kV CT's	$108,660
Replace 230kV CT's	$108,660
Replace 230kV CT's	$108,660
Replace 230kV CT's	$108,660
Replace 230kV CT's	$108,660
Replace 230kV CT's	$110,720
Replace 230kV CT's	$110,720
Replace 230kV CT's	$110,720
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,366
Replace 230kV CT's	$99,367
Replace 230kV CT's	$99,367
230kV CT with Potential Device	$597,400
Replace 230kV CT with Potential Device	$150,900
Replace 230kV CT with Potential Device	$154,200
Replace 230kV CT with Potential Device	$157,200
Replace 230kV CT with Potential Device	$135,100
735kV CT's	$4,088,400
Replace 735kV CT's	$177,750
Replace 735kV CT's	$177,750
Replace 735kV CT's	$186,400
Replace 735kV CT's	$186,400
Replace 735kV CT's	$154,450
Replace 735kV CT's	$154,450
Replace 735kV CT's	$187,750
Replace 735kV CT's	$187,750
Replace 735kV CT's	$187,750
Replace 735kV CT's	$187,750
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
Replace 735kV CT's	$164,300
735kV CT with Potential Device	$5,689,050
Replace 735kV CT with Potential Device	$422,100
Replace 735kV CT with Potential Device	$436,800
Replace 735kV CT with Potential Device	$445,400
Replace 735kV CT with Potential Device	$418,150
Replace 735kV CT with Potential Device	$418,150
Replace 735kV CT with Potential Device	$383,350
Replace 735kV CT with Potential Device	$383,350
Replace 735kV CT with Potential Device	$383,350
Replace 735kV CT with Potential Device	$599,600
Replace 735kV CT with Potential Device	$599,600
Replace 735kV CT with Potential Device	$599,600
Replace 735kV CT with Potential Device	$599,600



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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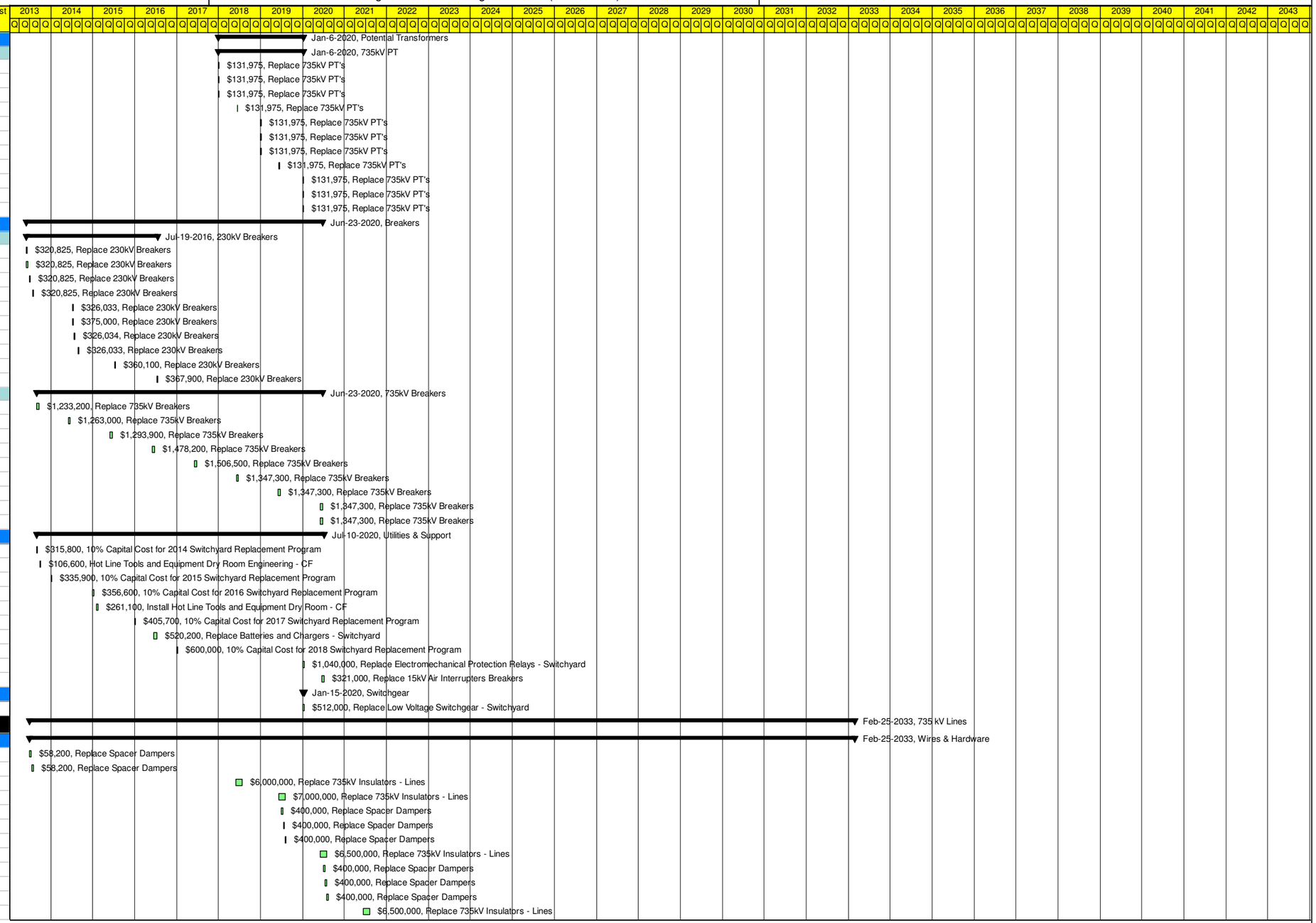
Activity Name	Budgeted Total Cost
Potential Transformers	$1,451,725
735kV PT	$1,451,725
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Replace 735kV PT's	$131,975
Breakers	$15,528,400
230kV Breakers	$3,364,400
Replace 230kV Breakers	$320,825
Replace 230kV Breakers	$320,825
Replace 230kV Breakers	$320,825
Replace 230kV Breakers	$320,825
Replace 230kV Breakers	$326,033
Replace 230kV Breakers	$375,000
Replace 230kV Breakers	$326,034
Replace 230kV Breakers	$326,033
Replace 230kV Breakers	$360,100
Replace 230kV Breakers	$367,900
735kV Breakers	$12,164,000
Replace 735kV Breakers	$1,233,200
Replace 735kV Breakers	$1,263,000
Replace 735kV Breakers	$1,293,900
Replace 735kV Breakers	$1,478,200
Replace 735kV Breakers	$1,506,500
Replace 735kV Breakers	$1,347,300
Replace 735kV Breakers	$1,347,300
Replace 735kV Breakers	$1,347,300
Replace 735kV Breakers	$1,347,300
Utilities & Support	$4,262,900
10% Capital Cost for 2014 Switchyard Replacement I	$315,800
Hot Line Tools and Equipment Dry Room Engineering	$106,600
10% Capital Cost for 2015 Switchyard Replacement I	$335,900
10% Capital Cost for 2016 Switchyard Replacement I	$356,600
Install Hot Line Tools and Equipment Dry Room - CF	$261,100
10% Capital Cost for 2017 Switchyard Replacement I	$405,700
Replace Batteries and Chargers - Switchyard	$520,200
10% Capital Cost for 2018 Switchyard Replacement I	$600,000
Replace Electromechanical Protection Relays - Switc	$1,040,000
Replace 15kV Air Interrupters Breakers	$321,000
Switchgear	$512,000
Replace Low Voltage Switchgear - Switchyard	$512,000
735 kV Lines	$81,341,500
Wires & Hardware	$78,216,400
Replace Spacer Dampers	$58,200
Replace Spacer Dampers	$58,200
Replace 735kV Insulators - Lines	$6,000,000
Replace 735kV Insulators - Lines	$7,000,000
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace 735kV Insulators - Lines	$6,500,000
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace 735kV Insulators - Lines	$6,500,000



Actual Work | Critical Remaining Work | Summary | Remaining Work | Milestone

TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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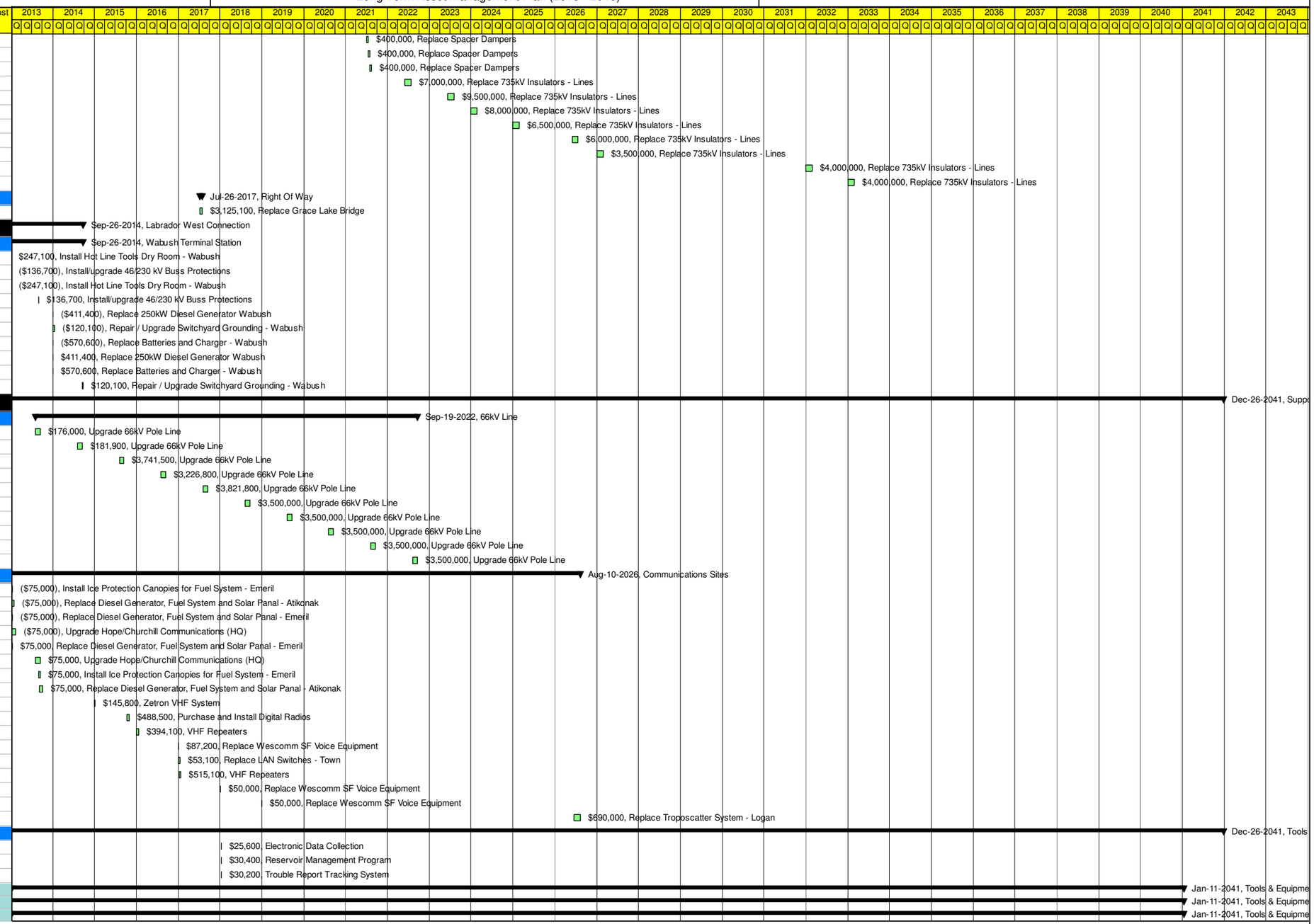
Activity Name	Budgeted Total Cost
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace Spacer Dampers	$400,000
Replace 735kV Insulators - Lines	$7,000,000
Replace 735kV Insulators - Lines	$9,500,000
Replace 735kV Insulators - Lines	$8,000,000
Replace 735kV Insulators - Lines	$6,500,000
Replace 735kV Insulators - Lines	$6,000,000
Replace 735kV Insulators - Lines	$3,500,000
Replace 735kV Insulators - Lines	$4,000,000
Replace 735kV Insulators - Lines	$4,000,000
Right Of Way	$3,125,100
Replace Grace Lake Bridge	$3,125,100
Labrador West Connection	$0
Wabush Terminal Station	$0
Install Hot Line Tools Dry Room - Wabush	$247,100
Install/upgrade 46/230 kV Buss Protections	($136,700)
Install Hot Line Tools Dry Room - Wabush	($247,100)
Install/upgrade 46/230 kV Buss Protections	$136,700
Replace 250kW Diesel Generator Wabush	($411,400)
Repair / Upgrade Switchyard Grounding - Wabush	($120,100)
Replace Batteries and Charger - Wabush	($570,600)
Replace 250kW Diesel Generator Wabush	$411,400
Replace Batteries and Charger - Wabush	$570,600
Repair / Upgrade Switchyard Grounding - Wabush	$120,100
Support Infrastructure	$35,685,641
66kV Line	$28,648,000
Upgrade 66kV Pole Line	$176,000
Upgrade 66kV Pole Line	$181,900
Upgrade 66kV Pole Line	$3,741,500
Upgrade 66kV Pole Line	$3,226,800
Upgrade 66kV Pole Line	$3,821,800
Upgrade 66kV Pole Line	$3,500,000
Upgrade 66kV Pole Line	$3,500,000
Upgrade 66kV Pole Line	$3,500,000
Upgrade 66kV Pole Line	$3,500,000
Upgrade 66kV Pole Line	$3,500,000
Communications Sites	$2,473,800
Install Ice Protection Canopies for Fuel System - Eme	($75,000)
Replace Diesel Generator, Fuel System and Solar Pa	($75,000)
Replace Diesel Generator, Fuel System and Solar Pa	($75,000)
Upgrade Hope/Churchill Communications (HQ)	($75,000)
Replace Diesel Generator, Fuel System and Solar Pa	$75,000
Upgrade Hope/Churchill Communications (HQ)	$75,000
Install Ice Protection Canopies for Fuel System - Eme	$75,000
Replace Diesel Generator, Fuel System and Solar Pa	$75,000
Zetron VHF System	$145,800
Purchase and Install Digital Radios	$488,500
VHF Repeaters	$394,100
Replace Wescomm SF Voice Equipment	$87,200
Replace LAN Switches - Town	$53,100
VHF Repeaters	$515,100
Replace Wescomm SF Voice Equipment	$50,000
Replace Wescomm SF Voice Equipment	$50,000
Replace Troposcatter System - Logan	$690,000
Tools & Equipment	$4,563,841
Electronic Data Collection	$25,600
Reservoir Management Program	$30,400
Trouble Report Tracking System	$30,200
Tools & Equipment - Communications	$584,100
Tools & Equipment - Electrical	$788,141
Tools & Equipment - P&C	$584,100



Actual Work | Critical Remaining Work | Summary
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TASK filters: 30 Year Plan (2013 - 2041), Capital, Opportunity.
Resource Profile Filter:Production Cost.Production Cost

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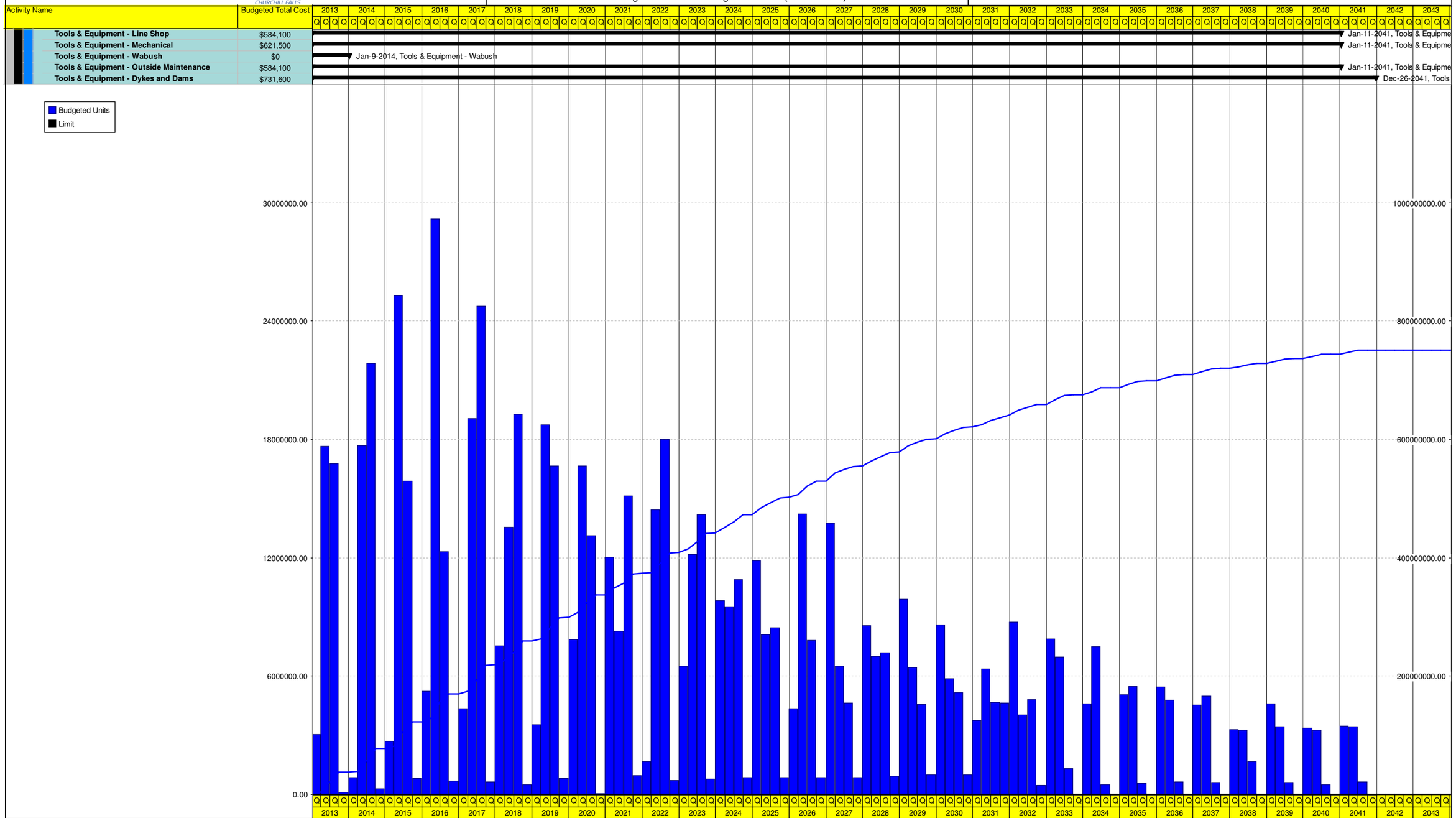
Activity Name	Budgeted Total Cost
Tools & Equipment - Line Shop	$584,100
Tools & Equipment - Mechanical	$621,500
Tools & Equipment - Wabush	$0
Tools & Equipment - Outside Maintenance	$584,100
Tools & Equipment - Dykes and Dams	$731,600



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