# Double circuit 345kV line on Steel Monopoles

Generated: [ ] MW  Delivered: [ ] MW

| | | | | | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MAIN OVH T-LINE - MATERIAL (Owner)** | | | | 106 Mi. | | | | | | | |
| **MAIN T-LINE ENGR.:** | | | | | | | | | | | |
| Prelim. Design & Review of: | T-Line Design & Tech Support | | | Responsibility With: Owner Engr. | | | | 1 | Lt. | 50,000 | $50,000 |
| Prelim. Design & Review of: | Route Survey AKA: Plan & Profile | | | Responsibility With: Owner Engr. | | | | 1 | Lt. | 50,000 | $50,000 |
| Prelim. Design & Review of: | Transmission Route Geotechnical information | | | | | | | 1 | Lt. | 75,000 | $75,000 |
| **T-LINE: STRUCTURES** | Height Ft. | Mat'l | Type | Span Ft. | | | | | | | |
| Tangent Structures | 130 | Steel | monopole | 900 | 5.87 Ea. Strc's/mi.: | | | 571 | Ea. | 109,730 | $62,656,081 |
| Angled Structures | varies | Steel | monopole | | | | | 15 | Ea. | 121,196 | $1,817,940 |
| In-Line D.E. Structures | varies | Steel | monopole | | | | | 15 | Ea. | 131,732 | $1,975,987 |
| Angled D.E. Structures | varies | Steel | monopole | | | | | 21 | Ea. | 142,708 | $2,996,864 |
| Special Structures | | | | | 1.20% of Structures | | | 7 | Ea. | 154,122 | $1,078,855 |
| **T-LINE CONDUCTOR:** | | | | | | | | | | | |
| Conductor Mat'l | 2 Bundled | 1590 Lapwing | | | Sag & Waste Allowance: 2.00% | | | 217 | Mi. | 107,507 | $23,328,911 |
| | $3.39 / Ft. "AVE." | $20.36 /Ckt Ft. | | | | | | | | | |
| OPGW + OHGW | | | | | | | | 109 | Mi. | 12,144 | $1,323,696 |
| Fiber Repeater Stations | | | | | Number of Miles Between Stations: 60 mi. | | | 2 | Ea. | 50,000 | $100,000 |
| Balance of T-Line Mat'l & Misc. | | | | | Percent Adder for Balance of Mat'l 7.75% | | | 217 | Mi. | 69,661 | $15,116,447 |
| | | | | | | | | | | | $110,569,780 |
| **MAIN OVH T-LINE - CONSTRUCTION (Contractor)** | | | | Assues 175 Ft. ROW | | | | | | | |
| **MAIN OVH T-LINE** | | | | | | | | | | | |
| T-Line: Engineering and Design | | | | | Responsibility With: Contractor Engr. | | | 106 | Mi. | 19,890 | $2,108,287 |
| T-Line: Route Survey AKA: Plan & Profile | | | | | Responsibility With: Contractor Engr. | | | 106 | Mi. | 10,000 | $1,060,000 |
| T-Line: Geotechnical information for Route | | | | | Based on obtaining data for 17.0% of structure locations | | | 106 | Mi. | 2,094 | $222,006 |
| **T-LINE: CONSTRUCTION** | | | | | | | | | | | |
| Mob/Demob T-Line crews and Equipment | | | | | | | | 1 | Lt. | 480,000 | $480,000 |
| Material Management | | | | | | | | 7 | Mo. | 178,017 | $1,257,989 |
| **T-LINE: STRUCTURES** | | | | Mat'l | Labor | | | | | | |
| Erec: Tangent Structures | Includes, gnding | | | $500.00 | $14,500.00 | | | 571 | Ea. | 15,000 | $8,565,000 |
| Erec: Angled Structures | Includes, gnding | | | $500.00 | $16,675.00 | | | 15 | Ea. | 17,175 | $257,625 |
| Erec: In-Line D.E. Structures | Includes, gnding | | | $500.00 | $17,508.75 | | | 15 | Ea. | 18,009 | $270,131 |
| Erec: Angled D.E. Structures | Includes, gnding | | | $500.00 | $17,508.75 | | | 21 | Ea. | 18,009 | $378,184 |
| Erec: Special Structures | Includes, gnding | | | $500.00 | $20,000.00 | | | 7 | Ea. | 20,500 | $143,500 |
| **T-LINE: CONDUCTOR, CABLE & FIBER** | | | | | | | | | | | |
| Install: Conductor | | | | | | | | 212 | Mi. | 70,076 | $14,856,090 |
| Install: OVH 7/16" EHS | | | | | | | | 106 | Mi. | 6,577 | $697,162 |
| Install: OVH Fiber Optic | 48 Fiber | | | | | | | 106 | Mi. | 13,033 | $1,381,498 |
| Supply / Install: Spacers, Dampers | $150.00 | $240.00 | 1.0 | Ea. Per Bundle, spaced at | 200.0 Ft. | | | 16,791 | Ea. | 390.00 | $6,548,490 |
| Install: Insulators, Clamps, etc. | | | | | | | | | Ea. | | $0 |
| **T-LINE: CIVIL WORK** | | | | | | | | | | | |
| Foundations for Tangent Structures | | | | | | | | 571 | Ea. | 27,500 | $15,702,500 |
| Foundations for Special Structures | | | | | | | | 58 | Ea. | 48,300 | $2,801,400 |

## Double circuit 345kV line on Steel Monopoles

Generated: [ ] MW  Delivered: [ ] MW

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
| 12' wide access road | | | | | | | | | | 27,984 | Lf. | 15.00 | $419,760 |
| Supply / Install: Fencing | Type: 5-Strane Barb Wire with 10' space T-Post Stake (No Chain-Link) | | | | | | | | | | Lf. | | $0 |
| Supply / Install: Gates - Permanent | Type: 36' Opening with one 18' swing Gates | | | | | | | | | 200 | Ea. | 2,910 | $581,900 |
| Supply / Install: Cattle Guards | Type: Typical is 16 Ft. opening, PIP Conc., Installed level & stable. | | | | | | | | | | Ea. | | $0 |
| R.O.W Clearing and access road build | | | | | | | | | | 106 | Mi. | 60,480 | $6,410,880 |
| Install Crane Pads | | | | | | | | | | 571 | Ea. | 700 | $399,700 |
| Restoration of R.O.W. (S.W.P.P, Enviro prot., reseed, etc.) | | | | | | | | | | 106 | Mi. | 14,000 | $1,484,000 |
| Construction Laydown Yards | 10 Ac. Cleared, grubbed, rocked & Fenced | | | | | | | One Yard Every: | 30 Mi. | 4 | Ea. | 442,750 | $1,771,000 |
| **OTHER T-LINE COST & IMPACTS** | | | | | | | | | | | | | |
| T-Line: Inspection, Testing & Commissiong | | | | | | | | | | 106 | Mi. | 10,000 | $1,060,000 |
| T-Line: Other describe if used | | | | | | | | | | 0 | Lt. | | $0 |
| | | | | | | | | | | | | | $68,857,103 |
| **Owner GENERAL M&A** | | | | | | | | | | | | | |
| **Owner - FIELD / SITE PERSONNEL** | **People** | **Truck** | **Trips** | **Sub** | **Start** | **Finish** | | | | | | | |
| Owner: Project Manager | 1 | Yes | Yes | Yes | 04/01/10 | 12/01/10 | | | | 9.0 | Mo. | 14,250 | $128,250 |
| Owner: Construction Manager | 1 | Yes | Yes | Yes | 04/02/10 | 12/02/10 | | | | 9.0 | Mo. | 13,300 | $119,700 |
| Owner: Civil Superintendent | 1 | Yes | Yes | Yes | 04/03/10 | 12/03/10 | | | | 9.0 | Mo. | 11,400 | $102,600 |
| Owner: Electrical Superintendent | 1 | Yes | Yes | Yes | 04/04/10 | 12/04/10 | | | | 9.0 | Mo. | 11,400 | $102,600 |
| Owner: Interconn. Coordinator | 1 | No | Yes | No | 04/05/10 | 12/05/10 | | | | 9.0 | Mo. | 15,200 | $136,800 |
| Owner: T-Line Superintendent | 2 | Yes | Yes | Yes | 04/06/10 | 12/06/10 | | | | 9.0 | Mo. | 12,250 | $110,250 |
| Owner: Mat'l/Logistics Coordinator | 1 | Yes | Yes | Yes | 04/07/10 | 12/07/10 | | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: Site/Prj. Coordinator | 1 | Yes | Yes | Yes | 04/08/10 | 12/08/10 | | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: QA/QC Inspector | 2 | Yes | Yes | Yes | 04/09/10 | 12/09/10 | | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: Safety & Enviornmental | 1 | No | Yes | Yes | 04/10/10 | 12/10/10 | | | | 9.0 | Mo. | 10,450 | $94,050 |
| **Owner - FIELD / SITE EXPENDITURES** | | | | | | | | | | | | | |
| Prj. Vehicle's: Owner - Truck's | | 10 Ea. | | | | | | | | 81.0 | Mo. | 950 | $76,950 |
| Prj. Vehicle's: Insurance | | $560 Per/Veh./Yr | | | 10.0 Ea. | | | | | 1 | Lt. | 33,600 | $33,600 |
| Subsistence for Field Personnel (lodging, meals, etc.) | | | 7.0 Days Per Wk | | | 81.00 mo. | | | | 2,438 | Dy | 125 | $304,763 |
| Travel (Air Fares, Vendor Inspections, Etc.) | | | 3.5 Wks Per Trip | | | 90.00 mo. | | | | 110.6 | Ea. | 875 | $96,750 |
| Home Office Support - Owner | | | | | | | | | | | | | |
| **Owner - OTHER (If Not Carried By Contractor)** | | | | | | | | | | | | | |
| Field Office Trailers - Owner | | 3 Ea. | | | 03/01/10 | 01/01/11 | | | | 31.0 | Mo. | 4,500 | $139,500 |
| Facilities & Infrastructure (sanitary, trash,etc.) | | | | | 03/02/10 | 01/02/11 | | | | 11.0 | Mo. | 8,000 | $88,000 |
| Misc. Field Office G&A (Office setup,etc.) | | | | | 03/03/10 | 01/03/11 | | | | 11.0 | Mo. | 18,500 | $203,500 |
| Communications to Field Facilities | | | | | | | | | | 1.0 | Ea. | 125,000 | $125,000 |
| Safety & Public Relations | | | | | | | | | | 1.0 | Ea. | 100,000 | $100,000 |
| | | | | | | | | | | | | | $2,244,463 |
| **PROJECT EXPOSURES: R/E/C** | | | | | | | | | | | | | |
| **RISK COSTS** | | | | Set At | | | | | | | | | |

## Double circuit 345kV line on Steel Monopoles

**Generated:** [ ] **MW** **Delivered:** [ ] **MW**

| | | | | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
|---|---|---|---|---|---|---|---|---|---|---|
| Builders All- Risk Insurance | | 2.75% | of EPC | Estimate Keith Kennedy is comfortable with, as a market would have to be created. | | | 1.0 | Lt. | $1,893,570 | $1,893,570 |
| Performance Bonds / Letters of Credit | | 1.60% | of EPC | Yeager SWAG | | | 1.0 | Lt. | $1,101,714 | $1,101,714 |
| General Liability Insurance Premium | | $41.939 | Per Mw | | | MW | 1.0 | Lt. | $0 | $0 |
| Construction Insurance | | $425 | Per Mw | | | MW | 1.0 | Lt. | $0 | $0 |
| DSU Insurance (Delayed Start-Up) | | $0.252 | Per $100 value | | | | 0.0 | Lt. | $17,351,990 | $0 |
| Sales Tax (Non-Generation) | Cost carried by PV | 6.50% | of EPC | | | | 0.0 | Lt. | $4,475,712 | $0 |
| **ESCALATION** | | | | | | | | | | |
| Substation: (Mat'l Only) | | 3.50% | Per Year for | | 0.33 | Years | 1.0 | Ea. | 0 | $0 |
| Main OVH T-Line: (Mat'l Only) | | 3.50% | Per Year for | | 0.33 | Years | 1.0 | Ea. | 3,869,942 | $3,869,942 |
| For Escalation: | Estimate Cost Based on: | 06/03/08 | | Award EPC: | 10/01/08 | | | | | |
| **CONTINGENCY** | | | | | | | | | | |
| Substation - Material (Owner) | | | | | | | 3.00% | Pct. | 0 | $0 |
| Substation Construction - (Contractor) | | | | | | | 5.00% | Pct. | 0 | $0 |
| Main OVH T-Line - Material (Owner) | | | | | | | 5.00% | Pct. | 110,569,780 | $5,528,489 |
| Main OVH T-Line - Construction (Contractor) | | | | | | | 10.00% | Pct. | 68,857,103 | $6,885,710 |
| T-Line: Construction | | | | Construction Productivity Adj. | 0% | | 106 | Mi. | 0 | $0 |
| | | | | | | | 0.0 | Lt. | 0 | $0 |
| | | | | | | | | | 28.0% | $19,279,426 |

**ALL-IN Total Project Cost:** $200,950,771

**Cost per Mile:** $1,900,000

# Double circuit (1-Ckt Build) 345kV line on Steel Monopoles

Generated: [ ] MW  Delivered: [ ] MW

| | | | | | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MAIN OVH T-LINE - MATERIAL (Owner)** | | | | | 106 Mi. | | | | | | |
| **MAIN T-LINE ENGR.:** | | | | | | | | | | | |
| Prelim. Design & Review of: | T-Line Design & Tech Support | | | | Responsibility With: Owner Engr. | | | 1 | Lt. | 50,000 | $50,000 |
| Prelim. Design & Review of: | Route Survey AKA: Plan & Profile | | | | Responsibility With: Owner Engr. | | | 1 | Lt. | 50,000 | $50,000 |
| Prelim. Design & Review of: | Transmission Route Geotechnical information | | | | | | | 1 | Lt. | 75,000 | $75,000 |
| **T-LINE: STRUCTURES** | **Height Ft.** | **Mat'l** | **Type** | **Span Ft.** | | | | | | | |
| Tangent Structures | 130 | Steel | monopole | 900 | 5.87 Ea. Strc's/mi.: | | | 571 | Ea. | 109,730 | $62,656,081 |
| Angled Structures | varies | Steel | monopole | | | | | 15 | Ea. | 121,196 | $1,817,940 |
| In-Line D.E. Structures | varies | Steel | monopole | | | | | 15 | Ea. | 131,732 | $1,975,987 |
| Angled D.E. Structures | varies | Steel | monopole | | | | | 21 | Ea. | 142,708 | $2,996,864 |
| Special Structures | | | | | 1.20% of Structures | | | 7 | Ea. | 154,122 | $1,078,855 |
| **T-LINE CONDUCTOR:** | | | | | | | | | | | |
| Conductor Mat'l | 2 Bundled | 1590 Lapwing | | | Sag & Waste Allowance: 2.00% | | | 109 | Mi. | 107,507 | $11,718,209 |
| | $3.39 / Ft. "AVE." | $20.36 /Ckt Ft. | | | | | | | | | |
| OPGW + OHGW | | | | | | | | 109 | Mi. | 12,144 | $1,323,696 |
| Fiber Repeater Stations | | | | | Number of Miles Between Stations: 60 mi. | | | 2 | Ea. | 50,000 | $100,000 |
| Balance of T-Line Mat'l & Misc. | | | | | Percent Adder for Balance of Mat'l 6.00% | | | 109 | Mi. | 47,359 | $5,162,135 |
| | | | | | | | | | | | $89,004,766 |
| **MAIN OVH T-LINE - CONSTRUCTION (Contractor)** | Assues 175 Ft. ROW | | | | | | | | | | |
| **MAIN OVH T-LINE** | | | | | | | | | | | |
| T-Line: Engineering and Design | | | | | Responsibility With: Contractor Engr. | | | 106 | Mi. | 19,890 | $2,108,287 |
| T-Line: Route Survey AKA: Plan & Profile | | | | | Responsibility With: Contractor Engr. | | | 106 | Mi. | 10,000 | $1,060,000 |
| T-Line: Geotechnical information for Route | | | | | Based on obtaining data for 17.0% of structure locations | | | 106 | Mi. | 2,094 | $222,006 |
| **T-LINE: CONSTRUCTION** | | | | | | | | | | | |
| Mob/Demob T-Line crews and Equipment | | | | | | | | 1 | Lt. | 480,000 | $480,000 |
| Material Management | | | | | | | | 7 | Mo. | 178,017 | $1,257,989 |
| **T-LINE: STRUCTURES** | | | | | | **Mat'l** | **Labor** | | | | |
| Erec: Tangent Structures | Includes, gnding | | | | | $500.00 | $14,500.00 | 571 | Ea. | 15,000 | $8,565,000 |
| Erec: Angled Structures | Includes, gnding | | | | | $500.00 | $16,675.00 | 15 | Ea. | 17,175 | $257,625 |
| Erec: In-Line D.E. Structures | Includes, gnding | | | | | $500.00 | $17,508.75 | 15 | Ea. | 18,009 | $270,131 |
| Erec: Angled D.E. Structures | Includes, gnding | | | | | $500.00 | $17,508.75 | 21 | Ea. | 18,009 | $378,184 |
| Erec: Special Structures | Includes, gnding | | | | | $500.00 | $20,000.00 | 7 | Ea. | 20,500 | $143,500 |
| **T-LINE: CONDUCTOR, CABLE & FIBER** | | | | | | | | | | | |
| Install: Conductor | | | | | | | | 106 | Mi. | 70,076 | $7,428,045 |
| Install: OVH 7/16" EHS | | | | | | | | 106 | Mi. | 6,577 | $697,162 |
| Install: OVH Fiber Optic | 48 Fiber | | | | | | | 106 | Mi. | 13,033 | $1,381,498 |
| Supply / Install: Spacers, Dampers | $150.00 | $240.00 | 1.0 Ea. | Per Bundle, spaced a | 200.0 Ft. | | | 8,396 | Ea. | 390.00 | $3,274,440 |
| Install: Insulators, Clamps, etc. | | | | | | | | | Ea. | | $0 |
| **T-LINE: CIVIL WORK** | | | | | | | | | | | |
| Foundations for Tangent Structures | | | | | | | | 571 | Ea. | 27,500 | $15,702,500 |

# Double circuit (1-Ckt Build) 345kV line on Steel Monopoles

Generated: [ ] MW  Delivered: [ ] MW

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
| Foundations for Special Structures | | | | | | | | | 58 | Ea. | 48,300 | $2,801,400 |
| 12' wide access road | | | | | | | | | 27,984 | Lf. | 15.00 | $419,760 |
| Supply / Install: Fencing | Type: 5-Strane Barb Wire with 10' space T-Post Stake (No Chain-Link) | | | | | | | | | Lf. | | $0 |
| Supply / Install: Gates - Permanent | Type: 36' Opening with one 18' swing Gates | | | | | | | | 200 | Ea. | 2,910 | $581,900 |
| Supply / Install: Cattle Guards | Type: Typical is 16 Ft. opening, PIP Conc., Installed level & stable. | | | | | | | | | Ea. | | $0 |
| R.O.W Clearing and access road build | | | | | | | | | 106 | Mi. | 60,480 | $6,410,880 |
| Install Crane Pads | | | | | | | | | 571 | Ea. | 700 | $399,700 |
| Restoration of R.O.W. (S.W.P.P, Enviro prot., reseed, etc.) | | | | | | | | | 106 | Mi. | 14,000 | $1,484,000 |
| Construction Laydown Yards | 10 Ac. Cleared, grubbed, rocked & Fenced | | | | | | One Yard Every: 30 Mi. | | 4 | Ea. | 442,750 | $1,771,000 |
| **OTHER T-LINE COST & IMPACTS** | | | | | | | | | | | | |
| T-Line: Inspection, Testing & Commissiong | | | | | | | | | 106 | Mi. | 10,000 | $1,060,000 |
| T-Line: Other describe if used | | | | | | | | | 0 | Lt | | $0 |
| **Owner GENERAL M&A** | | | | | | | | | | | | **$58,155,008** |
| **Owner - FIELD / SITE PERSONNEL** | **People** | **Truck** | **Trips** | **Sub** | **Start** | **Finish** | | | | | | |
| Owner: Project Manager | 1 | Yes | Yes | Yes | 04/01/10 | 12/01/10 | | | 9.0 | Mo. | 14,250 | $128,250 |
| Owner: Construction Manager | 1 | Yes | Yes | Yes | 04/02/10 | 12/02/10 | | | 9.0 | Mo. | 13,300 | $119,700 |
| Owner: Civil Superintendent | 1 | Yes | Yes | Yes | 04/03/10 | 12/03/10 | | | 9.0 | Mo. | 11,400 | $102,600 |
| Owner: Electrical Superintendent | 1 | Yes | Yes | Yes | 04/04/10 | 12/04/10 | | | 9.0 | Mo. | 11,400 | $102,600 |
| Owner: Interconn. Coordinator | 1 | No | Yes | No | 04/05/10 | 12/05/10 | | | 9.0 | Mo. | 15,200 | $136,800 |
| Owner: T-Line Superintendent | 2 | Yes | Yes | Yes | 04/06/10 | 12/06/10 | | | 9.0 | Mo. | 12,250 | $110,250 |
| Owner: Mat'l/Logistics Coordinator | 1 | Yes | Yes | Yes | 04/07/10 | 12/07/10 | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: Site/Prj. Coordinator | 1 | Yes | Yes | Yes | 04/08/10 | 12/08/10 | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: QA/QC Inspector | 2 | Yes | Yes | Yes | 04/09/10 | 12/09/10 | | | 9.0 | Mo. | 10,450 | $94,050 |
| Owner: Safety & Enviornmental | 1 | No | Yes | Yes | 04/10/10 | 12/10/10 | | | 9.0 | Mo. | 10,450 | $94,050 |
| **Owner - FIELD / SITE EXPENDITURES** | | | | | | | | | | | | |
| Prj. Vehicle's: Owner - Truck's | | 10 Ea. | | | | | | | 81.0 | Mo. | 950 | $76,950 |
| Prj. Vehicle's: Insurance | | $560 Per/Veh./Yr | | | 10.0 Ea. | | | | 1 | Lt. | 33,600 | $33,600 |
| Subsistence for Field Personnel (lodging, meals, etc.) | | | 7.0 Days Per Wk | | | 81.00 mo. | | | 2,438 | Dy | 125 | $304,763 |
| Travel (Air Fares, Vendor Inspections, Etc.) | | | 3.5 Wks Per Trip | | | 90.00 mo. | | | 110.6 | Ea. | 875 | $96,750 |
| Home Office Support - Owner | | | | | | | | | | | | |
| **Owner - OTHER (If Not Carried By Contractor)** | | | | | | | | | | | | |
| Field Office Trailers - Owner | | 3 Ea. | | | 03/01/10 | 01/01/11 | | | 31.0 | Mo. | 4,500 | $139,500 |
| Facilities & Infrastructure (sanitary, trash,etc.) | | | | | 03/02/10 | 01/02/11 | | | 11.0 | Mo. | 8,000 | $88,000 |
| Misc. Field Office G&A (Office setup,etc.) | | | | | 03/03/10 | 01/03/11 | | | 11.0 | Mo. | 18,500 | $203,500 |
| Communications to Field Facilities | | | | | | | | | 1.0 | Ea. | 125,000 | $125,000 |
| Safety & Public Relations | | | | | | | | | 1.0 | Ea. | 100,000 | $100,000 |
| **PROJECT EXPOSURES: R/E/C** | | | | | | | | | | | | **$2,244,463** |

## Double circuit (1-Ckt Build) 345kV line on Steel Monopoles

**Generated:** [ ] MW **Delivered:** [ ] MW

| | | Set At | | | | QTY's | UoM | $'s/UOM | TOTAL EST. $'S |
|---|---|---|---|---|---|---|---|---|---|
| **RISK COSTS** | | | | | | | | | |
| Builders All- Risk Insurance | | 2.75% | of EPC | Estimate Keith Kennedy is comfortable with, as a market would have to be created. | | 1.0 | Lt. | $1,599,263 | $1,599,263 |
| Performance Bonds / Letters of Credit | | 1.60% | of EPC | Yeager SWAG | | 1.0 | Lt. | $930,480 | $930,480 |
| General Liability Insurance Premium | | $41.939 | Per Mw | | MW | 1.0 | Lt. | $0 | $0 |
| Construction Insurance | | $425 | Per Mw | | MW | 1.0 | Lt. | $0 | $0 |
| DSU Insurance (Delayed Start-Up) | | $0.252 | Per $100 value | | | 0.0 | Lt. | $14,655,062 | $0 |
| Sales Tax (Non-Generation) | Cost carried by PV | 6.50% | of EPC | | | 0.0 | Lt. | $3,780,076 | $0 |
| **ESCALATION** | | | | | | | | | |
| Substation: (Mat'l Only) | | 3.50% | Per Year for | | 0.33 Years | 1.0 | Ea. | 0 | $0 |
| Main OVH T-Line: (Mat'l Only) | | 3.50% | Per Year for | | 0.33 Years | 1.0 | Ea. | 3,115,167 | $3,115,167 |
| For Escalation: | Estimate Cost Based on: | 06/03/08 | | Award EPC: | 10/01/08 | | | | |
| **CONTINGENCY** | | | | | | | | | |
| Substation - Material (Owner) | | | | | | 3.00% | Pct. | 0 | $0 |
| Substation Construction - (Contractor) | | | | | | 5.00% | Pct. | 0 | $0 |
| Main OVH T-Line - Material (Owner) | | | | | | 5.00% | Pct. | 89,004,766 | $4,450,238 |
| Main OVH T-Line - Construction (Contractor) | | | | | | 10.00% | Pct. | 58,155,008 | $5,815,501 |
| T-Line: Construction | | | | Construction Productivity Adj. | 0% | 106 | Mi. | 0 | $0 |
| | | | | | | 0.0 | Lt. | 0 | $0 |
| | | | | | | | | 27.4% | $15,910,649 |

**ALL-IN Total Project Cost:** $165,314,885

**Cost per Mile:** $1,560,000

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 12, lines 15–18 of the direct testimony of Mr. Dan Mayers. Please explain why the terrain along each of the alternative routes is generally favorable for the transportation and installation of the concrete monopole structure as opposed to one of the other structure types that were considered. Please include cost analysis data in your explanation.

**RESPONSE**

Based on the aerial assessment of the alternative routes, Lone Star's construction team determined that the majority of the alternative routes consisted of relatively flat terrain and rolling hills, requiring minimal civil construction work to support transportation and installation of the concrete monopole. Also, please refer to Dan Mayers' direct testimony, page 11, line 5 through page 14, line 16 for the economic benefits of spun concrete poles.

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|---|---|---|---|
| Preparer: | David Tenan | Title: | Project Manager, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 13, line 14. Has Lone Star confirmed that all of the proposed alternative routes have soil that will allow for direct embedding of concrete monopole? If not, what will be required to confirm that these structures can be directly embedded? Does Lone Star intend to embed the hybrid and steel monopoles where they are needed?

**RESPONSE**

No, Lone Star has not confirmed that all of the proposed alternative routes have soil that will allow for direct embedment of the concrete monopole. Once the Commission has ordered a route, Lone Star will obtain access to the property, perform surveys and geotechnical analysis and determine the appropriate type of structure to be used. Generally, direct-embedment of concrete monopoles is not a problem but where soil conditions are not favorable, a deeper set depth will be specified.

If required, Lone Star will direct embed the hybrid (concrete base with steel top) and steel structures following the same process previously described. When soil conditions are not favorable, a concrete caisson foundation will be installed.

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| Preparer: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

How much more will the installation of a spun concrete monopole costs if it cannot be directly embedded and it is necessary to construct a foundation?

**RESPONSE**

Round spun concrete monopoles do not require a separate foundation as the below grade portion of the pole functions as a pre-cast foundation therefore there is no additional installation cost.

Preparer: Dan Mayers Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC

Sponsor: Dan Mayers Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC

**QUESTION**
The following questions refer to the testimony of Dan Mayers:

Please refer to page 14, lines 9–11. Please provide a summary of the improvements made due to FPL's initiatives and provide an explanation as to how these improvements will help the Texas transmission system.

**RESPONSE**
See Daniel Mayers' testimony page 11, line 17 through page 14, line 16.

Due to FPL's long term involvement in the design of round spun concrete poles, the high capacity concrete pole was developed. Double circuit 345 kV lines can now be supported by high capacity concrete monopoles that can span in excess of 800 feet. This was not possible with the standard concrete pole used prior to FPL's involvement. Lone Star believes the concrete monopole is more esthetically pleasing and cost effective than a lattice tower supporting an equivalent transmission line. Monopole construction has a smaller footprint, and therefore less land impact which appeals to landowners.

Due to FPL's work, the concrete pole has been made compatible with the 345 kV braced post insulator assemblies. The combination of braced post insulator assemblies and high capacity concrete poles allows for a narrower right-of-way compared to an equivalent lattice tower with I-string insulators. This reduced right-of-way width lowers the cost of land acquisition and minimizes environmental impact.

Finally, based on FPL's involvement, the high capacity "concrete-steel" hybrid (sectional) pole was developed. The concrete-steel hybrid pole has, at times, a lower installed cost compared to a steel pole on a foundation and also supports the reduced right-of-way width thereby reducing the cost of land acquisition and minimizing the environmental impact .

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| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**
The following questions refer to the testimony of Dan Mayers:

Please refer to page 16, line 10. Please provide a summary of ECI's methodology and the associated information and data.

**RESPONSE**
Please refer to the Daniel Mayers' testimony page 15, line 21 through page 16 line 8. Below are the steps taken by ECI during preliminary engineering for the purpose of developing the CCN estimate:

ECI obtained USGS public access data to develop a digital terrain model (DTM) for each alternative route submitted to the Commission. For each route, they established a centerline profile, and determined where angle structures would go at each point of intersection (PI). ECI spotted poles (established pole locations) using PLS-CADD throughout every segment of the preferred route. This provided a realistic estimate of poles required to meet all design criteria such as NESC strength and electrical clearance requirements. The route was flown by ECI and Lone Star to rate portions of the route from a constructability standpoint. ECI assigned cost factors to each rating. Flat terrain was assigned a 1 for the easiest construction. The roughest terrain was given a 4.

ECI, based on the profile of the terrain seen in the PLS-CADD model and on the rankings given to general areas during the flyover, assigned a ranking to each segment. This ranking was used to group segments of similar terrain in the spotted segments and to develop structure counts per mile along with percentages of different heights for each structure type. Based on the structure counts per mile and percentages developed along the spotted segments, the unspotted segments of similar ranking could then be estimated for structure counts and heights. This was done by multiplying the structures per mile by the segment mileage, subtracting out the number of angle structures to determine the number of tangents, and then applying the appropriate height percentages per each structure type. ECI obtained budgetary pricing for material and labor and applied the unit pricing to the structure counts, foundations, and associated hardware for each segment. ECI established a cost per mile for the project based on the above information.

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| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

What assurances has Lone Star received from the supplier of the spun concrete monopoles that sufficient quantities of poles will be available to meet the construction schedule?

**RESPONSE**

The supplier has multiple production sites capable of providing the required quantities and engineered designs of the spun concrete monopoles. In addition, the supplier has committed to a plant expansion (scheduled for completion in the 4th quarter of 2010) in Bellville, Texas, providing additional capacity which will be capable of meeting Lone Star's spun concrete pole requirements.

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| Preparer: | Walt Campbell | Title: | Sourcing Manager,<br>Florida Power & Light Co |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering,<br>NextEra Energy Resources, LLC |

**QUESTION**
The following questions refer to the testimony of Dan Mayers:

How many suppliers of spun concrete monopoles will Lone Star utilize to supply monopoles for this project?

**RESPONSE**
A single supplier of round spun concrete monopoles will be utilized for this Project.

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| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Has Lone Star entered into any contractual agreement(s) for the supply, purchase, and/or transport of spun concrete monopole transmission structures? If not, when does Lone Star reasonably anticipate that such agreements will be completed? Please provide a copy of any contracts responsive to this request or supplement your response with such contracts at such time as they are finalized.

**RESPONSE**

Lone Star has not entered into any contract for the supply, purchase and transport of concrete poles. Lone Star is in the final negotiation stages and reasonably anticipates entering into such an agreement during the 3rd quarter of 2010.

Preparer: Daniel Mayers Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC

Sponsor: Daniel Mayers Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 17, lines 16–17. Please explain why it is prudent to wait until October 2010 to start the procurement of spun concrete monopoles.

**RESPONSE**

Please refer to Lone Star's response to Staff First Set of RFIs, Request Nos. 1-27 and 1-29. Lone Star does not believe that it is prudent to wait until October 2010 and has initiated various activities related to the procurement of the spun concrete monopoles. Pole specifications were created, an RFQ was released for bids, Lone Star has reviewed bids and is in the process of negotiating with a single pole supplier to ensure timely delivery of the structures. Lone Star is confident that the spun concrete pole quantities necessary to support the construction schedule submitted in its CCN Application will be available at a reasonable price and that production of spun concrete poles can commence by as early as October 2010 in support of the schedule submitted in its CCN Application. This is based on Lone Star's potential supplier representations and Lone Star's experience.

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| Preparer: | T.O.Nasby | Title: | Senior Director / Engineering and Construction |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 26, lines 1–2. Please provide the "extensive preliminary engineering work" as mentioned in the statement.

**RESPONSE**

Various "extensive preliminary engineering work" documents are available for review in Lone Star's voluminous room. These documents are preliminary in nature and were used to support the preparation of the CCN appplication and subsequent engineering studies. These documents are subject to the final Lone Star, ERCOT, PUCT, and interconnecting utility requirements, and are subject to revision during the detailed engineering phase of the project.

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| Preparer: | Don Schleicher, P.E | Title: | Manager - Construction,<br>NextEra Energy Resources, LLC |
| Preparer: | Philip Givens, P.E | Title: | Manager - Construction,<br>NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering,<br>NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 34, line 20. Please explain what is meant by the term "concentrated."

**RESPONSE**

The term "concentrated" in this context (on page 34 line 20 of Mr. Mayers' direct testimony) means densely developed (such as a residential subdivision, the central business district/downtown portion of the cities in the study area, or commercial/industrial parks).

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| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 37, lines 22-24. Please clarify to what line does the 19.5 miles refer. Also, identify the distance of the existing 345-kV transmission line from the ROW of the proposed Central A to Central C preferred route.

**RESPONSE**

The 19.5 mile existing 345 kV transmission line referenced in Dan Mayers' direct testimony is the Morgan Creek - Graham 345kV line. The ROWs for each line will be separate and adjacent, thus the distance would be more than 100 feet between the structures center to center. The precise distance will be determined during detail design, after the Commission orders a route.

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|---|---|---|---|
| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please refer to page 38, lines 6-7. What are the widths of ROW that are assumed for the Lone Star ROW and the ROW of any existing transmission line?

**RESPONSE**

Lone Star proposes to typically use a 100 foot ROW width as described in Staff First Set of RFIs, Request No. 1-19. Once the Commission orders a route, Lone Star will acquire access to private properties, conduct ground surveys and begin engineering design, then Lone Star will determine the actual width of ROW required and that of the existing transmission line.

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| Preparer: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

## QUESTION

The following questions refer to the testimony of Dan Mayers:

Please refer to Exhibit DM-8.

a. Please explain the meaning of "DC 345."
b. Please provide the distance between the Lone Star route ROW and the ROW of the parallel 345-kV lines that are not immediately adjacent.

## RESPONSE

a. Double Circuit 345kV
b. Please refer to Lone Star's responses to Staff's First Set of RFIs, Requests Nos. 1-33 and 1-34.

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|---|---|---|
| Preparer: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please provide a map that shows the preferred and alternate routes of the Central A to Central C project as they exit the Central A station along with the alternative routes proposed by Oncor for the Central B to Central A and the Tonkawa to Central A transmission projects.

**RESPONSE**

Please refer to Lone Star's Second Supplement to its Application for a Certificate of Convenience and Necessity.

Preparer: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

Sponsor: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Does Lone Star have an agreement with Oncor concerning the placement of the deadend structure at the entrance to the Central A substation? If so, please provide a copy of the agreement. If not, please state the understanding between the two companies as to the entrance location.

**RESPONSE**

In terms of transmission line routing, Lone Star and Oncor have generally agreed that the deadend structure for Lone Star's interconnection at Central A would be located on the south side of the Central A Substation and its specific location will depend upon which route the Commission approves in Lone Star's case.

Preparer: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

Sponsor: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Please provide a map that shows the preferred and alternate routes of the Central A to Central C project and the Central C to Sam Switch as they exit the Central C station along with the alternative routes proposed by ETT for the Clear Crossing to Central C line.

**RESPONSE**

Please refer to Lone Star's Second Supplement to its Application for a Certificate of Convenience and Necessity.

Preparer: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

Sponsor: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

**QUESTION**

The following questions refer to the testimony of Dan Mayers:

Does Lone Star have an agreement with ETT as to where the Clear Crossing to Central C line will enter the Central C station? If so, please provide a copy of the agreement. If not, please state the understanding between the two companies as to the entrance location.

**RESPONSE**

In terms of transmission line routing, Lone Star and ETT have generally agreed that ETT would enter the Central C station from the north.

Preparer: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

Sponsor: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

**QUESTION**

The following questions refer to the testimony of David K. Turner:

Please describe Mr. Turner's specific expertise and experience in reliability issues.

**RESPONSE**

With respect to reliability issues, Mr. Turner has extensive experience in identifiying transmission line contingencies (*e.g.*, single element Category B contingencies, two or more element Category C contigencies, and extreme event Category D contingencies involving two or more elements) for evaluation by his prior employer's system planning and protection department, in determining transmission line operating and emergency ratings and other characteristics for use by his prior employer's system operations department, in designing transmission lines to operate reliably, and in evaluating and determining vegetation managment and maintenance requirements affecting reliability for his prior employer's transmission line maintenance department. Please also refer to Mr. Turner's resume attached to his direct testimony.

Preparer: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

Sponsor: David K. Turner, P.E. Title: Project Director, Lone Star Transmission, LLC

**QUESTION**

The following questions refer to the testimony of David K. Turner:

On page 8, he states that Lone Star is in the process of coordinating with other CREZ transmission service providers about the crossing of other proposed CREZ routes.

a. Please identify all possible crossings of any of the Lone Star proposed routes with other proposed CREZ lines to the extent this information is known by Lone Star.
b. Please provide any conclusions that Lone Star has reached concerning the reliability of its CREZ transmission line when it is paralleling other high-voltage transmission lines including proposed CREZ lines.

**RESPONSE**

Please refer to Lone Star's Second Supplement to its Application for a Certificate of Convenience and Necessity, including supplemental direct testimonies of David Turner and Julius Horvath.

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|---|---|
| Co-Preparer: Julius Horvath, P. E. | Title: Director of System Planning, Lone Star Transmission, LLC |
| Co-Preparer: David K. Turner, P. E. | Title: Project Director, Lone Star Transmission, LLC |
| Co-Sponsor: Julius Horvath, P. E. | Title: Director of System Planning, Lone Star Transmission, LLC |
| Co-Sponsor: David K. Turner, P. E. | Title: Project Director, Lone Star Transmission, LLC |

**QUESTION**

The following questions refer to the testimony of David K. Turner:

On page 9, he states that Lone Star does not intend to place structures within public road ROW. Does this statement exclude obtaining easements needed for crossing public road ROW or aerial easements?

**RESPONSE**

Mr. Turner's statement is not intended to imply exclusion of any necessary permits (*e.g.*, TxDOT permits) needed for crossing public road ROW. In those cases, not easements but permits are the mechanism to be used and requirements for those permits are specified in Title 43 of the Texas Administrative Code. Please also refer to the direct testimony of Mr. Dan Mayers at page 7, line 20 to page 8, line 3.

| | |
|---|---|
| Co-Preparer: David K. Turner, P. E. | Title: Project Director,<br>Lone Star Transmission, LLC |
| Co-Preparer: Dan Mayers | Title: Director of Trans./Subst. Engineering,<br>NextEra Energy Resources, LLC |
| Co-Sponsor: David K. Turner, P. E. | Title: Project Director,<br>Lone Star Transmission, LLC |
| Co-Sponsor: Dan Mayers | Title: Director of Trans./Subst. Engineering,<br>NextEra Energy Resources, LLC |

**QUESTION**

The following questions refer to the testimony of Michael G. Grable:

Please refer to page 3, line 12. Please reconcile the start of construction date of January 2011 with the date of May 2011 on line 18, page 17 of Mr. Mayers' testimony.

**RESPONSE**

Substaton related activities, including site clearing and lay down area, are scheduled to begin in January 2011. The transmission related activities are projected to begin with ROW clearing in May 2011.

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| Preparer: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |
| Sponsor: | Dan Mayers | Title: | Director of Trans./Subst. Engineering, NextEra Energy Resources, LLC |