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March 28, 2012

via electronic mail to:
Lamont.Jackson@hq.doe.gov

Lamont Jackson
Office of Electricity Delivery and Energy Reliability
Mail Code: OE-20
U.S. Department of Energy
1000 Independence Avenue S.W.
Washington, D.C. 20585

Re: Rapid Response Team for Transmission
OE Docket No. RRTT-IR-001

Dear Mr. Jackson:

Pursuant to the Department of Energy Office of Electricity Delivery and Energy Reliability's February 21, 2012 Request for Information in the above-referenced docket, attached please find American Electric Power's comments.

Respectfully submitted,

/s/ Amanda Riggs Conner

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Attachment

UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY DELIVERY
AND ENERGY RELIABILITY

Rapid Response Team for Transmission	)	OE Docket No. RRTT-IR-001

COMMENTS OF AMERICAN ELECTRIC POWER

Pursuant to the Department of Energy ("DOE") Office of Electricity Delivery and Energy Reliability's February 21, 2012 Request for Information ("RFI") in the above-referenced docket, American Electric Power ("AEP") submits these comments regarding the necessary coordination among multiple federal and state agencies and generation and transmission industry sectors with respect to the development of transmission infrastructure. As the nation addresses environmental and reliability issues currently facing the electric industry, questions arise that have not been dealt with at a significant level since the 1970s, when much of the transmission grid was built. Therefore, this RFI is appropriate and well-timed. AEP appreciates the opportunity to participate in the effort and applauds the DOE for its leadership in this dialogue.

AEP is one of the largest electric utilities in the United States, delivering electricity to more than 5 million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 39,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, the interconnected transmission system that covers 38 eastern and central U.S. states and eastern Canada, and approximately 11 percent of the electricity demand in ERCOT, the transmission system that covers much of Texas. As such,

AEP is well positioned to comment in this docket, and hopes to provide insight that will be beneficial to the government agencies involved as well as to the industry.

I. INTRODUCTION

The lack of coordination among multiple federal agencies, federal and state agencies, and the generation and transmission sectors of the electric industry has become a game of 3-D chess. Overly complex, the layers of moving parts become almost impossible to track in a coherent fashion.

AEP has felt the impacts of these complexities for years. For instance, the Wyoming-Jacksons Ferry 765 kV transmission line, less than 100 miles in length, was announced in 1990. Siting processes began immediately, crossing two states, several parcels of federal land and a national scenic river. Fourteen years later, the approvals were in place and construction began. Sixteen years after its announcement, Wyoming-Jacksons Ferry was energized. Despite being called the most needed electric infrastructure project in the eastern interconnection by DOE, much of this delay resulted from competing interests and goals among federal agencies, some of which do not view electric infrastructure development as a priority. The delays experienced with the Wyoming-Jacksons Ferry line were so pronounced that AEP has since avoided crossing federal lands in siting projects.

Notably, Wyoming-Jacksons Ferry was a reliability project to serve local load, which should have made siting the project a straightforward undertaking. In contrast, today's project proposals, in addition to providing reliability and economic benefits, are often designed to accommodate new generation, sometimes merchant, and often renewable. Additional transmission projects will also be necessary to solve reliability issues resulting from generation retirements necessitated by the implementation of the Environmental Protection Agency's

("EPA") Mercury and Air Toxics Standards ("MATS") regulations. This will happen at the same time the nation is facing a massive construction effort for new base load generation and retrofits to some of the existing coal fleet. These transmission projects will now have a much greater urgency than they did in 1990. Yet, processes have changed little in since then.

The primary obstacles to expeditious siting of generation and transmission are:

1. Lack of a clear lead agency;
2. Discordant review processes among federal agencies;
3. Lack of coordination among federal and state agencies;
4. Lack of coordination between the transmission and generation sectors of the electric industry;
5. Lack of coordination among rail, natural gas transmission and electric transmission planning; and
6. Lack of certainty in project completion.

The last point – lack of certainty in project completion – is a Catch 22. A new generator – most often located near its fuel source and distant from load – cannot reach load without a new transmission project to carry its energy. Yet, it is difficult to obtain approval for a transmission project until there is a generator at the end of the line to which it can connect, making the transmission project used and useful. Too many projects of both genres are canceled in process, often for the reasons listed above. The issue is even more complicated for renewable energy generation, where a planning analysis that minimizes the total cost of generation and transmission needed to interconnect needs to be performed.

II. COMMENTS

Both generators and transmission projects face multiple hurdles before they come to fruition. In addition, disjointed siting and approval processes, combined with construction timelines and delays, create situations where generation and transmission projects are out of synch with each other. This results in delays and cancellations, which have plagued both sectors for the last several years.

The following table, compiled by the Edison Electric Institute ("EEI"), using The Velocity Suite project database, indicates new, proposed and cancelled generation capacity, by fuel type.

Table 1

New, Proposed and Cancelled Capacity by Fuel Type

Fuel Type	2011 (Preliminary)						2010					
	MW (# of projects)						MW (# of projects)					
	Capacity additions		Projects Announced		Projects Canceled / Postponed		Capacity additions		Projects Announced		Projects Canceled / Postponed	
Coal	**1,909**	(9)			**2,190**	(5)	**6,692**	(12)	**579**	(3)	**5,676**	(12)
Steam turbine	1,599	(7)			2,015	(3)	2,804	(7)	4	(1)	1,822	(3)
Atmospheric Fluidized Bed	310	(2)					704	(1)			1,574	(6)
IGCC					125	(1)			575	(2)	600	(1)
Supercritical/ Adv. Superc.							3,184	(4)			1,680	(2)
Natural Gas	**9,764**	(38)	**6,628**	(48)	**3,766**	(18)	**7,229**	(35)	**3,731**	(28)	**9,312**	(28)
Simple cycle	2,284	(24)	2,812	(38)	1,454	(11)	2,129	(26)	1,518	(23)	3,949	(19)
Combined cycle	7,481	(14)	3,816	(10)	2,312	(7)	5,099	(9)	2,213	(5)	5,363	(9)
Nuclear	**353**	(8)	**96**	(3)			**125**	(3)	**1,464**	(9)	**1,621**	(2)
Renewables	**8,376**	(382)	**26,944**	(593)	**34,169**	(222)	**6,570**	(194)	**48,296**	(546)	**13,837**	(142)
Hydro	224	(16)	6,510	(25)	3,896	(28)	109	(14)	2,568	(18)	799	(32)
Wind	6,434	(103)	8,816	(141)	12,089	(98)	5,269	(78)	27,340	(178)	9,982	(69)
Solar Thermal	31	(3)	906	(7)	9,828	(16)	75	(1)	3,877	(11)	1,149	(6)
Solar PV*	1,289	*	8,818	(333)	4,694	(16)	777	*	12,959	(270)		
Tidal/wave	0	(1)	850	(16)	178	(8)			3	(1)	417	(6)
Other renewables	398	(259)	1,045	(71)	3,484	(56)	340	(38)	1,549	(68)	1,491	(29)
Storage	**20**	(7)	**211**	(2)	**374**	(5)			**62**	(3)		
Other	**153**	(8)	**65**	(12)	**7**	(2)	**108**	(6)	**112**	(4)	**2**	(1)
Total	**20,576**	(452)	**33,944**	(658)	**40,506**	(252)	**20,724**	(250)	**54,243**	(593)	**30,448**	(185)

Fuel Type	MW (# of projects)									
	2009				2008				2007	
	Projects Announced		Projects Canceled / Postponed		Projects Announced		Projects Canceled / Postponed		Projects Announced		Projects Canceled / Postponed	
Coal	**1,780**	(5)	**11,476**	(19)	**6,424**	(10)	**12,572**	(28)	**10,503**	(16)	**33,597**	(47)
Natural Gas	**16,505**	(45)	**10,208**	(55)	**17,448**	(93)	**3,568**	(18)	**22,199**	72	**6,527**	(22)
Nuclear	**3,612**	(10)	**9,830**	(8)	**3,393**	(6)	**1,600**	(1)	**17,124**	(17)	**3,200**	(2)
Renewables	**67,033**	(658)	**27,456**	(238)	**91,842**	(862)	**8,383**	(104)	**38,101**	(559)	**8,043**	(63)
Other	**372**	(10)	**90**	(1)	**217**	(13)	**5**	(1)	**418**	(19)	**292**	(3)
Total	**81,767**	(664)	**58,712**	(313)	**119,324**	(984)	**26,128**	(152)	**88,345**	(539)	**51,658**	(137)

Source: Ventyx Inc., The Velocity Suite. IREC, SEIA for data on PV additions
*PV capacity additions for all industry segments are included per IREC and SEIA data (DC-AC conversion: 87%). Data for PV capacity announced and/or cancelled/postponed by the residential sector or smaller than 1MW by other sectors are not included.

In addition, the Eastern Interconnection Planning Collaborative ("EIPC") phase 1 report modeled the economic impacts of eight potential future scenarios. Below are the generation results from their business as usual model run.

Table 2

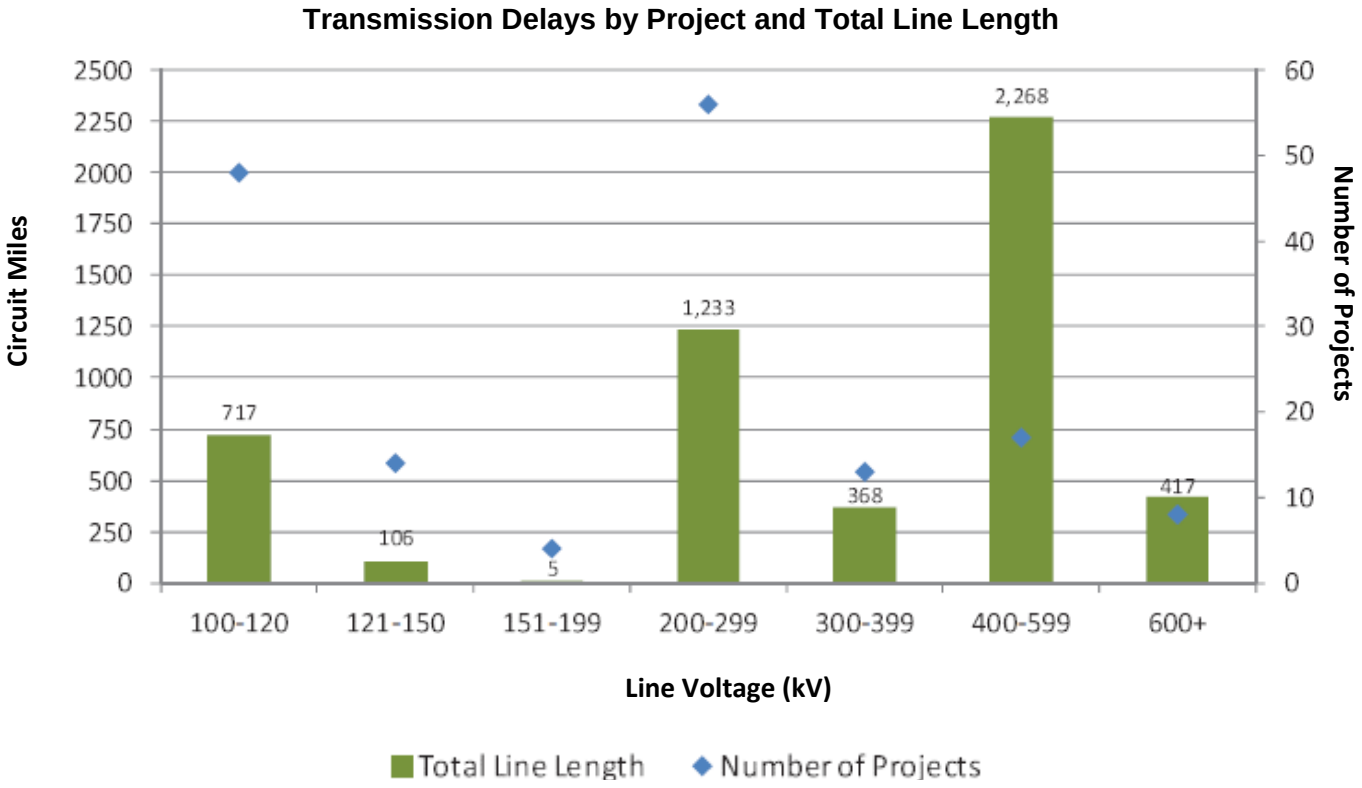
New Builds and Retirements by Capacity Type for the Eastern Interconnection – 2015, 2020, and 2030 (GW)

	2010 In-Service	---- Additions ----			---- Retirements ----			2030 In-Service
		2015	2020	2030	2015	2020	2030	
Coal	271.9	8.5	0.0	0.0	66.8	14.8	0.0	198.8
Nuclear	99.8	2.7	4.5	0.0	0.0	0.6	1.5	105.0
CC	132.7	30.7	17.7	26.2	5.5	0.0	0.0	201.8
CT	120.3	4.7	4.4	4.4	2.2	0.0	0.0	131.7
Steam Oil/Gas	74.5	0.0	0.0	0.0	37.6	0.4	0.4	36.1
Hydro	44.6	0.0	0.0	0.0	0.0	0.0	0.0	44.6
On-Shore Wind	18.7	22.2	12.1	14.8	0.0	0.0	0.0	67.8
Off-Shore Wind	0.0	0.5	0.0	1.1	0.0	0.0	0.0	1.6
Other Renewable	3.6	2.3	3.3	4.5	0.0	0.0	0.0	13.7
New HQ/Maritimes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	17.1	0.0	0.0	0.0	0.0	0.0	0.0	17.1
Total	783.3	71.6	42.1	50.9	112.1	15.8	1.9	818.2
DR	33.1	-1.3	16.8	22.1				70.7

Meanwhile, transmission projects face their own problems with cancellations and delays. The following table, taken from the NERC *2011 Long Term Reliability Assessment* ("LTRA"),

illustrates the kind of delays faced by transmission projects, comparative to the length of the proposed lines.

Chart 1



To alleviate the hurdles to generation and transmission development, a lead agency should be designated for facility siting processes, and a clear hierarchy among jurisdictions should be established. Further, appropriate benchmarks for completing state and federal studies and approving proposed projects should be set.[1]

A. A Lead Agency Should Be Designated

Congress recognized the long-standing roadblocks to electric infrastructure when it named DOE lead agency in Section 1221 of the Energy Policy Act of 2005 ("EPAct 05").

[1] These proposed solutions assume a situation in which the regional transmission organization ("RTO") or independent transmission operator ("ISO") involved already has approved a project for inclusion in its regional transmission plan.

EPAct 05 amended the Federal Power Act ("FPA"), adding a new Section 216(h),[2] which gives DOE broad authority to coordinate all federal approvals for siting a transmission facility. Section 216(h) states that DOE shall act as lead agency to coordinate all federal authorizations and environmental reviews required to site a transmission facility, including coordination with state siting authorities and Indian tribes. "Federal authorizations" means permits, authorizations or other approvals needed to site a transmission facility under federal law.

Section 216(h) tasks DOE with setting deadlines for review and authorization decisions and ensuring that all permit decisions and environmental reviews under federal laws are completed within one year of an application being considered complete. To expedite the authorization process, DOE is authorized to provide an expeditious pre-application mechanism for prospective applicants to confer with agencies involved. Section 216(h)(5) empowers DOE to prepare a single environmental review document to be used as the basis for all decisions on the proposed project under federal law.

Notwithstanding the direction provided by EPAct 05, the current model for approval of new transmission projects relies on the approving authorities working on their own schedules, with little or no coordination with other agencies. For example, a project that crosses multiple states will get approval independently from each state. If federal lands are involved, another approval agency (now at the federal level) is added to the process that works on its own timetable.

Rather than continuing with the current model, coordination at a higher level would bring the approvals together in the proper order to render a compatible decision among stakeholders. Because it was tasked as lead agency in EPAct 05, DOE is in a position to provide the oversight

[2] 16 U.S.C. § 824p(h).

and leadership needed to bring stakeholders together and better enable them to work in parallel with each other. As lead agency, DOE should facilitate a single application process among the many federal agencies involved and coordinate environmental reviews and application timelines with state siting authorities. Once DOE has facilitated the process improvements necessary to coordinate a single application and siting process on federal lands, DOE should consider delegating siting authority to the Federal Energy Regulatory Commission ("FERC") based on its experience with gas pipeline siting.

B. A Hierarchy Among Jurisdictions Should be Established

Once a clear lead agency has been established, that agency should be responsible for delegating a priority order to the remaining agencies that may be involved. The lead agency should be the starting point for siting a project and marks the point where it is handed off from the planning organization to be implemented. The lead agency should receive the application and should bear responsibility for facilitating concurrent review by other agencies involved, with firm milestones and deadlines along the way. All federal agencies involved in the project would answer to the lead agency, which will set their timelines for action and coordinate their interaction with each other. This allows each agency time to assess a project proposal from its own perspective but prevents inefficiencies that are sometimes created by assessments being passed back and forth between agencies, with no single agency accepting ultimate responsibility for approval. With a single application to the lead agency and a coordinated evaluation among agencies, the stakeholders would avoid the overlaps experienced today in their evaluations, which will lead to improved efficiencies in the project schedule and cost.

State public utility commissions would still perform their independent review on private lands, and federal agencies would coordinate their approval for public land crossings under a

schedule set by the lead agency; however, their processes should run on a parallel basis, which will lead to a more efficiently managed process that saves time and reduces costs. Section 216(g)(4)(A) of the FPA further authorizes DOE to consult with willing states to establish binding milestones and ultimate deadlines for review. The ultimate approval deadline for this concurrent federal and state review should be within one year of an application being complete, with appropriate flexibility for complex projects and reconciliation of federal and state routing decisions.

According to EEI's *Transmission Projects: At a Glance* 2011 report, 67 percent of all transmission projects currently proposed are interstate in nature, meaning they will have multiple state jurisdictions to maneuver. There is no need to clog state dockets with projects that may not get federal approval. This proposal allows the lead agency to interface with the appropriate state agencies simultaneously with the federal jurisdictions performing their review.

This hierarchy of jurisdictional approvals will be especially important for transmission lines, which are justified by needs statements on a broad scale. Because an individual federal agency may not consider all of the circumstances that drive a transmission project, the transmission project can experience delays in its schedule as each agency evaluates the project based on its area of expertise. To improve upon this dilemma, the federal government needs a coordinated effort (with the lead agency, DOE, as facilitator) among various agencies to put the studies in parallel with each other.

Agencies should be coordinated to better share data and avoid conflicting resolutions that will cause work to be repeated. The lead agency would provide coordination to the stakeholder agencies to prepare them for their work. This should even include coordination of a single need and a single siting consultant to examine the application for all the agencies. Currently, this is

done by different consultants for each agency. Efficiencies could be realized and schedules improved if this was all coordinated to a single need consultant and single siting consultant, which would be organized by and answerable to the lead agency. In order to effectively manage this effort, the lead agency must be empowered to break a stalemate between other stakeholders, make a decision and move on to the next stage of the project.

A coordinated process should also accommodate the planning activities of rail expansion, natural gas transmission planning and electric transmission siting. As one looks at where major electric generation develops, it is usually at the intersection of major rail and gas lines for fossil fueled electric generation. Coordination of rail and gas should be considered during the agency approval stage to maximize the value of the electric transmission route.

With regard to existing infrastructure, it is important to recognize the emphasis that state and federal agencies place on utilization of existing corridors in their siting methodologies. Combining environmental impacts to locations that are already impacted is the theme of modern day transmission line siting. Creativity by an experienced utility can lead to unique opportunities in siting which may include: (1) construction of a new line adjacent to an existing right-of-way, (2) combination of a new transmission circuit in the existing or expanded right-of-way, or (3) a complete rebuild of an existing line. The ability to find engineering solutions such as these is dependent upon many factors, including the critical nature of the circuits and whether they can be located in proximity to each other, limitations on structure capabilities and required outage times to rebuild the line. Nevertheless, since these solutions are encouraged by the agencies, it should be their practice to shorten the approval process and encourage these projects to move forward.

C. Appropriate Benchmarks Should be Set

With proper coordination, the completion timeline for state and federal agency studies should be no more than 12-15 months. The proposal outlined above should yield that level of expediency, opening the door for much quicker siting processes.

It is AEP's opinion that a 100-mile extra high voltage ("EHV") transmission line should be permitted, engineered and constructed in less than seven or eight years, total on a new right-of-way (Appendix A). The approval process and schedule should be further improved with the use of existing utility corridors. A number of variables can impact that timeframe, however, including: (1) the number of stakeholders, (2) the level of coordination among stakeholders, and (3) whether the National Environmental Policy Act ("NEPA") is impacted, indicating passage of a project through delicate ecosystems that must be protected.[3]

After the studies are done, the regulatory permitting process for transmission projects should be concluded within 12 months. When coordination is needed among federal agencies and multiple states, that timeframe may require a six-month extension (see Appendix D timeline to a final EIS). However, based on the urgent need for transmission, the established goal should be 12 months, and an extension should be considered an exception, not the norm. Just as the approval process itself should be scalable to accommodate the variety of projects and their unique approval needs, so should the timeframe. A line of less than 100 miles involving no more than two states should have a 12-month limit, with the FERC to have backstop authority if the states reach an impasse. A line of 100-300 miles, with two or more state or federal agencies should be approved within 18 months. Appendices A-D outline in detail the average siting needs

[3] NEPA involvement can easily extend the process by two or more years.

for projects with and without NEPA considerations now, and what might be achievable with expedited processes.

III. CONCLUSION

The siting challenges facing both transmission and generation projects are many and complex. The technical challenges of meeting modern environmental demands, coupled with the frustrations of blending discordant construction processes, are compounded by disjointed bureaucratic systems. But they are not insurmountable.

AEP believes that establishing a clear federal lead agency to coordinate efforts among supplemental agencies responsible for transmission and generation regulation will smooth the process to a workable system. Much of the challenge simply lies with unclear direction from the top. The clear designation of a lead agency should go far in addressing that issue.

AEP stands ready to assist in the smoothing of these processes in whatever way might be helpful. We appreciate the opportunity to participate in the process and are happy to continue to provide input as requested.

Respectfully submitted,

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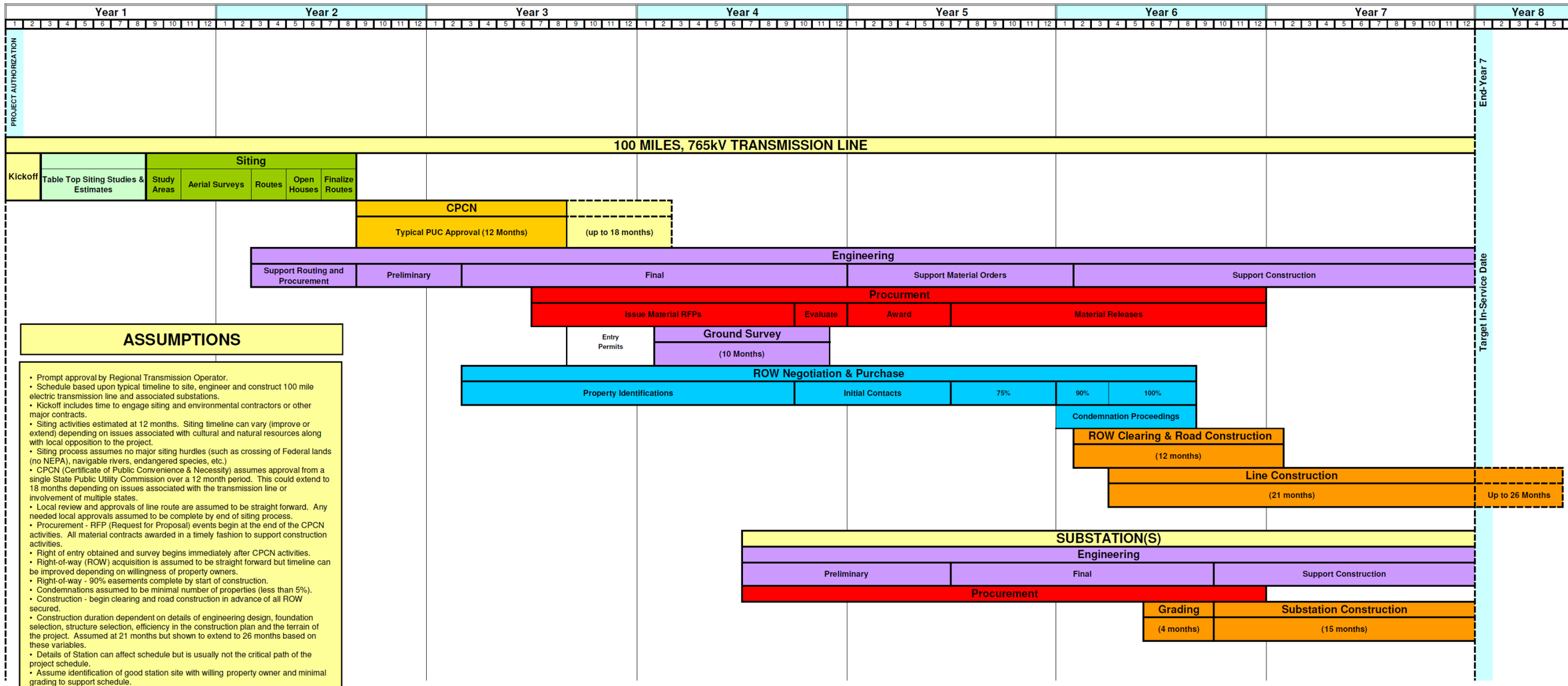
March 28, 2012

Typical Schedule for EHV Electric Transmission Line Project

DRAFT - March, 2012 - DRAFT



ASSUMPTIONS

- Prompt approval by Regional Transmission Operator.
- Schedule based upon typical timeline to site, engineer and construct 100 mile electric transmission line and associated substations.
- Kickoff includes time to engage siting and environmental contractors or other major contracts.
- Siting activities estimated at 12 months. Siting timeline can vary (improve or extend) depending on issues associated with cultural and natural resources along with local opposition to the project.
- Siting process assumes no major siting hurdles (such as crossing of Federal lands (no NEPA), navigable rivers, endangered species, etc.)
- CPCN (Certificate of Public Convenience & Necessity) assumes approval from a single State Public Utility Commission over a 12 month period. This could extend to 18 months depending on issues associated with the transmission line or involvement of multiple states.
- Local review and approvals of line route are assumed to be straight forward. Any needed local approvals assumed to be complete by end of siting process.
- Procurement - RFP (Request for Proposal) events begin at the end of the CPCN activities. All material contracts awarded in a timely fashion to support construction activities.
- Right of entry obtained and survey begins immediately after CPCN activities.
- Right-of-way (ROW) acquisition is assumed to be straight forward but timeline can be improved depending on willingness of property owners.
- Right-of-way - 90% easements complete by start of construction.
- Condemnations assumed to be minimal number of properties (less than 5%).
- Construction - begin clearing and road construction in advance of all ROW secured.
- Construction duration dependent on details of engineering design, foundation selection, structure selection, efficiency in the construction plan and the terrain of the project. Assumed at 21 months but shown to extend to 26 months based on these variables.
- Details of Station can affect schedule but is usually not the critical path of the project schedule.
- Assume identification of good station site with willing property owner and minimal grading to support schedule.

SCHEDULE #1

Appendix B – Expedited EHV Siting Schedule

Expedited Schedule for EHV Electric Transmission Line Project

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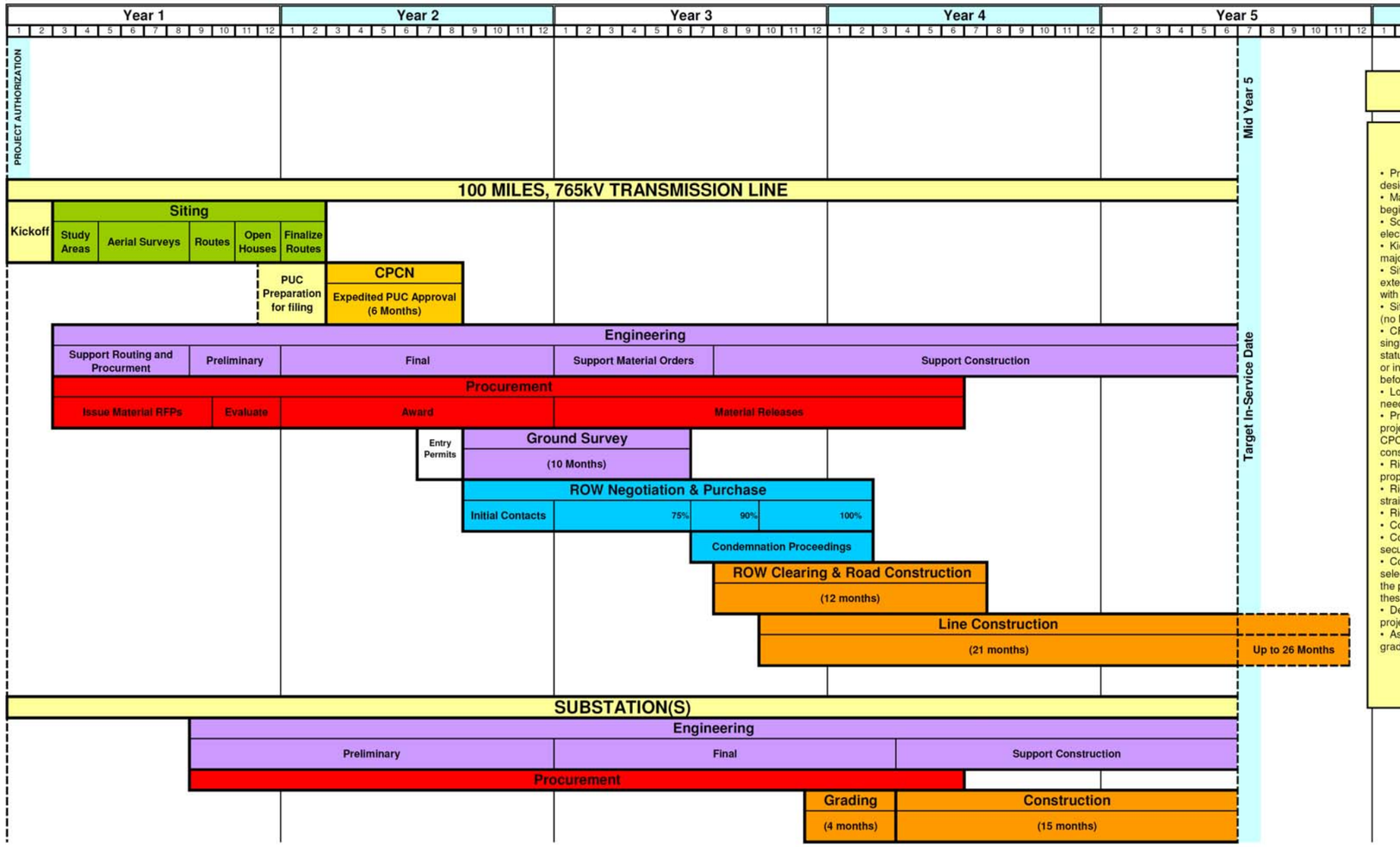


ASSUMPTIONS

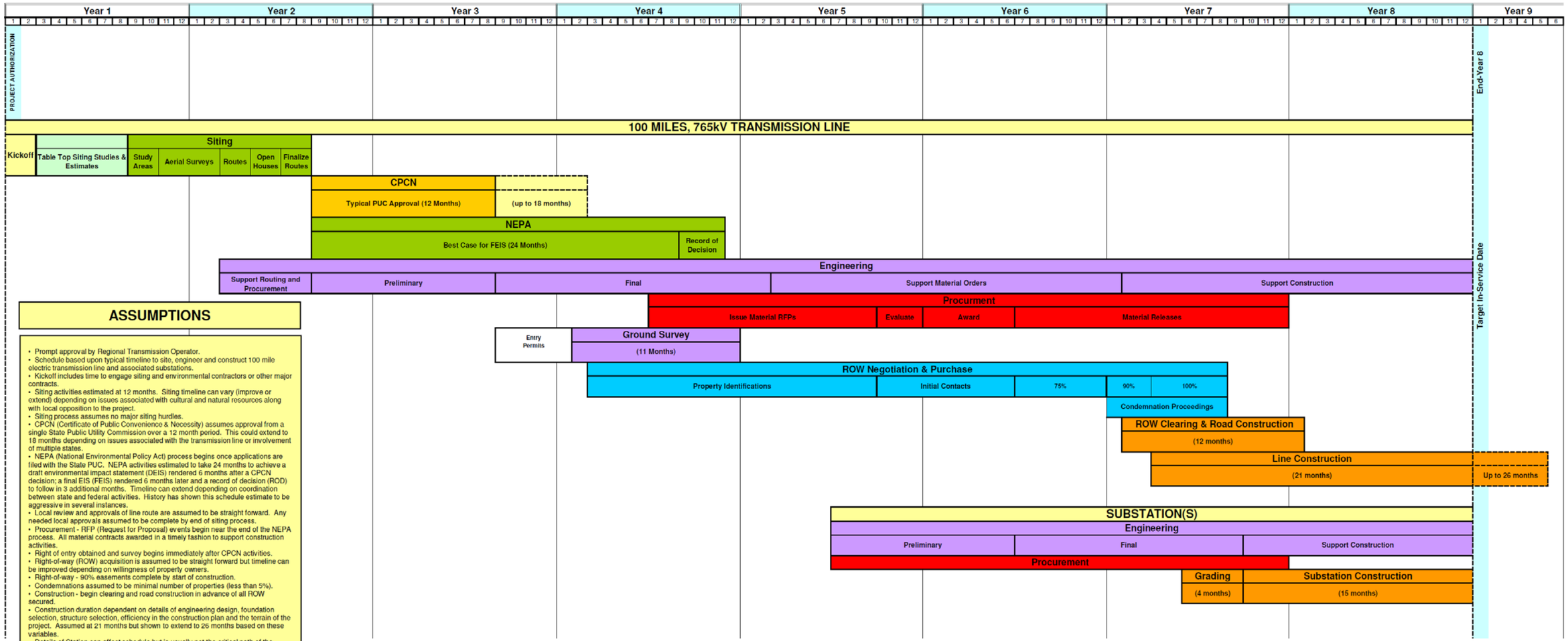
- Prompt approval by Regional Transmission Operator (RTO) with a clear designation as a critical status project.
- Major contractors identified, project team assembled and contracts expedited to begin work upon approval by RTO.
- Schedule based upon expedited timeline to site, engineer and construct 100 mile electric transmission line and associated substations.
- Kickoff includes time to engage siting and environmental contractors or other major contracts.
- Siting activities estimated at 12 months. Siting timeline can vary (improve or extend) depending on issues associated with cultural and natural resources along with local opposition to the project.
- Siting process assumes no major siting hurdles (such as crossing of Federal lands (no NEPA), navigable rivers, endangered species, etc.)
- CPCN (Certificate of Public Convenience & Necessity) assumes approval from a single State Public Utility Commission (PUC) over a 6 month period based on critical status. This could extend depending on issues associated with the transmission line or involvement of multiple states. PUC will have to prepare for the application before it arrives (ie. engage contracts with consultants).
- Local review and approvals of line route are assumed to be straight forward. Any needed local approvals assumed to be complete by end of siting process.
- Procurement - RFP (Request for Proposal) events begin at the beginning of the project with the goal to have major contracts in place during or by the end of the CPCN activities. All material contracts awarded in a timely fashion to support construction activities.
- Right of entry obtained and survey begins during CPCN activities with willing property owners. All right of entry obtained upon conclusion of CPCN activities.
- Right-of-way (ROW) acquisition is expedited at 18 months and assumed to be straight forward.
- Right-of-way - 90% easements complete by start of construction.
- Condemnations assumed to be minimal number of properties (less than 5%).
- Construction - begin clearing and road construction in advance of all ROW secured.
- Construction duration dependent on details of engineering design, foundation selection, structure selection, efficiency in the construction plan and the terrain of the project. Assumed at 21 months but shown to extend to 26 months based on these variables.
- Details of Station can affect schedule but is usually not the critical path of the project schedule.
- Assume identification of good station site with willing property owner and minimal grading to support schedule.

SCHEDULE #2

Appendix C – Typical EHV Siting Schedule with NEPA

Typical Schedule for EHV Electric Transmission Line Project with Federal NEPA Process

DRAFT - March, 2012 - DRAFT



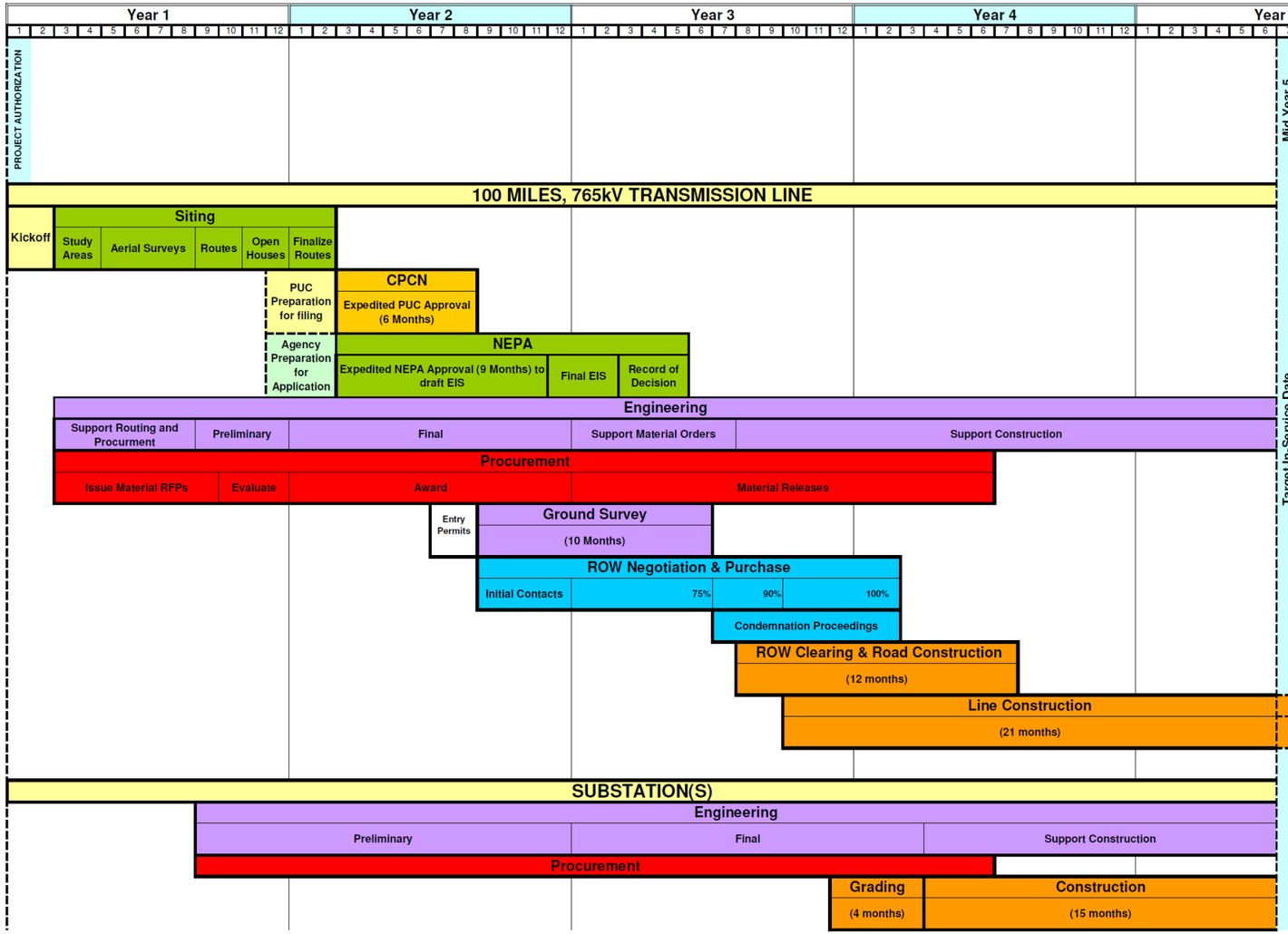
ASSUMPTIONS

- Prompt approval by Regional Transmission Operator.
- Schedule based upon typical timeline to site, engineer and construct 100 mile electric transmission line and associated substations.
- Kickoff includes time to engage siting and environmental contractors or other major contracts.
- Siting activities estimated at 12 months. Siting timeline can vary (improve or extend) depending on issues associated with cultural and natural resources along with local opposition to the project.
- Siting process assumes no major siting hurdles.
- CPCN (Certificate of Public Convenience & Necessity) assumes approval from a single State Public Utility Commission over a 12 month period. This could extend to 18 months depending on issues associated with the transmission line or involvement of multiple states.
- NEPA (National Environmental Policy Act) process begins once applications are filed with the State PUC. NEPA activities estimated to take 24 months to achieve a draft environmental impact statement (DEIS) rendered 6 months after a CPCN decision; a final EIS (FEIS) rendered 6 months later and a record of decision (ROD) to follow in 3 additional months. Timeline can extend depending on coordination between state and federal activities. History has shown this schedule estimate to be aggressive in several instances.
- Local review and approvals of line route are assumed to be straight forward. Any needed local approvals assumed to be complete by end of siting process.
- Procurement - RFP (Request for Proposal) events begin near the end of the NEPA process. All material contracts awarded in a timely fashion to support construction activities.
- Right of entry obtained and survey begins immediately after CPCN activities.
- Right-of-way (ROW) acquisition is assumed to be straight forward but timeline can be improved depending on willingness of property owners.
- Right-of-way - 90% easements complete by start of construction.
- Condemnations assumed to be minimal number of properties (less than 5%).
- Construction - begin clearing and road construction in advance of all ROW secured.
- Construction duration dependent on details of engineering design, foundation selection, structure selection, efficiency in the construction plan and the terrain of the project. Assumed at 21 months but shown to extend to 26 months based on these variables.
- Details of Station can affect schedule but is usually not the critical path of the project schedule.
- Assume identification of good station site with willing property owner and minimal grading to support schedule.

SCHEDULE #3

Expedited Schedule for EHV Electric Transmission Line Project with Federal NEPA Process

DRAFT - March 2012 - DRAFT



ASSUMPTIONS

- Prompt approval by Regional Transmission Operator (RTO) with a clear designation as a critical status project.
- Major contractors identified, project team assembled and contracts expedited to begin work upon approval by RTO.
- Schedule based upon expedited timeline to site, engineer and construct 100 mile electric transmission line and associated substations.
- Kickoff includes time to engage siting and environmental contractors or other major contracts.
- Siting activities estimated at 12 months. Siting timeline can vary (improve or extend) depending on issues associated with cultural and natural resources along with local opposition to the project.
- Siting process assumes no major siting hurdles.
- CPCN (Certificate of Public Convenience & Necessity) assumes approval from a single State Public Utility Commission (PUC) over a 6 month period based on critical status. This could extend depending on issues associated with the transmission line or involvement of multiple states. PUC will have to prepare for the application before it arrives (ie. engage contracts with consultants).
- NEPA (National Environmental Policy Act) process begins when applications are filed with the State PUC. NEPA activities expedited to achieve a draft environmental impact statement (DEIS) in 9 months, a final EIS (FEIS) rendered 3 months later and a record of decision (ROD) to follow in 3 additional months. Timeline can extend depending on coordination between state and federal activities. Agency preparation prior to filing of NEPA application would be necessary (ie. engage contracts with consultants).
- Concurrent activities between state and federal agencies based on a coordinated effort to streamline parallel activities. This is not currently available.
- Local review and approvals of line route are assumed to be straight forward. Any needed local approvals assumed to be complete by end of siting process.
- Procurement - RFP (Request for Proposal) events begin at the beginning of the project with the goal to have major contracts in place during or by the end of the CPCN activities. All material contracts awarded in a timely fashion to support construction activities.
- Right of entry obtained and survey begins during CPCN activities with willing property owners. All right of entry obtained upon conclusion of CPCN activities.
- Right-of-way (ROW) acquisition is expedited at 18 months and assumed to be straight forward.
- Right-of-way - 90% easements complete by start of construction.
- Condemnations assumed to be minimal number of properties (less than 5%).
- Construction - begin clearing and road construction in advance of all ROW secured.
- Construction duration dependent on details of engineering design, foundation selection, structure selection, efficiency in the construction plan and the terrain of the project. Assumed at 21 months but shown to extend to 26 months based on these variables.
- Details of Station can affect schedule but is usually not the critical path of the project schedule.
- Assume identification of good station site with willing property owner and minimal grading to support schedule.

SCHEDULE #4