



July 21, 2009
NND-09-0204

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

ATTN: Document Control Desk

Subject: V. C. Summer Nuclear Station Units 2 and 3
Docket Numbers 52-027 and 52-028
Combined License Application – Response to NRC
Environmental Report (ER) Requests for Additional Information
(RAI): CR-4, 5, 7, 8, 9, and 10, and TLine-1

Reference: 1. Letter from Ronald B. Clary to Document Control Desk,
Submittal of Revision 1 to Part 3 (Environmental Report) of the
Combined License Application for the V. C. Summer Nuclear
Station Units 2 and 3, dated February 13, 2009.
2. Letter from Patricia J. Vokoun to Ronald B. Clary, Requests for
Additional Information Related to the Environmental Review for
the Combined License Application for the V. C. Summer
Nuclear Station, Units 2 and 3, dated June 22, 2009.

By letter dated March 27, 2008, South Carolina Electric & Gas Company (SCE&G) submitted a combined license application (COLA) for V.C. Summer Nuclear Station (VCSNS) Units 2 and 3, to be located at the existing VCSNS site in Fairfield County, South Carolina. Subsequently the Environmental Report (ER), Part 3 of the application, was revised and submitted to the NRC (reference 1).

The enclosure to this letter provides the SCE&G response to RAI items CR-4, 5, 7, 8, 9, and 10, and TLine-1 transmitted by the NRC via reference 2.

Please address any questions to Mr. Alfred M. Paglia, Manager, Nuclear Licensing, New Nuclear Deployment, P. O. Box 88, Jenkinsville, S.C. 29065; by telephone at 803-345-4191; or by email at apaglia@scana.com.

1083
NRO

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 21 day of July 2009



Ronald B. Clary
General Manager
New Nuclear Deployment

ARR/RBC/ar

Enclosures

c (with Enclosures):

Patricia Vokoun
Carl Berkowitz
Richard Darden
FileNet

c (without Enclosures):

Luis A. Reyes
John Zeiler
Chandu Patel
Stephen A. Byrne
Ronald B. Clary
Bill McCall
William M. Cherry
Randolph R. Mahan
Kathryn M. Sutton
Rich Louie
John J. DeBlasio
April Rice

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-4 **Revision:** 0

Reference ER Information Needs Item: CR-10

Question Summary (RAI):

Provide copies of all ongoing correspondence between the applicant and the SHPO/Tribes regarding all ongoing, past and present cultural resource activities completed for the COLA.

Full Text (supporting information):

Correspondence between SHPO and Tribes, the applicant, and the applicant's cultural-resources contractor provides regulatory input that assists the NRC staff in conducting their analysis of construction and operating impacts.

VCSNS Response:

The response to this RAI was addressed in the responses to ER Information Needs Items CR-5, 9, and 10. SCE&G has provided existing correspondence with SHPO to the NRC in letters NND-09-0125, dated May 11, 2009 and NND-09-0136 dated May 18, 2009. As requested, SCE&G will copy the NRC on future correspondence with SHPO and related interested parties.

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-5 **Revision:** 0

Reference ER Information Needs Item: CR-11

Question Summary (RAI):

Provide a copy of the preliminary cultural resources analysis reports completed by Santee Cooper and SCE&G, which discuss known cultural resources located within two kilometers of proposed transmission routes and existing transmission routes to be modified, as well as future cultural resources investigations. (Include impacts to Traditional Cultural Property (TCPs) once transmission line routes have been finalized.)

Full Text (supporting information):

Analysis of transmission line impacts on cultural resources is necessary to understand cumulative as well as direct and indirect impacts resulting from transmission line modifications and new construction of transmission lines (construction) and operations.

VCSNS Response:

The response to this RAI was addressed in the response to ER Information Needs Item CR-11. SCE&G has provided the NRC with this ER Information Needs Item response in letter NND-09-0153, dated June 8, 2009.

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-7 **Revision:** 0

Reference ER Information Needs Item: CR-15

Question Summary (RAI)

Provide documentation on how SCE&G intends to address and implement SHPO concerns described in the letter from the SHPO dated August 16, 2007.

Full Text (supporting information):

The letter from the SHPO dated August 16, 2007, describes concerns of the SHPO regarding how SCE&G will assure that impacts to cultural resources resulting from the proposed project will be resolved. Understanding how the applicant intends to address input from the SHPO will assist the NRC staff in conducting their analysis of construction and operating impacts.

NND-09-0125 provides a partial answer, indicating that a Programmatic Agreement (PA) will be developed. However, no mention is made of specific protection/avoidance measures to be implemented, such as a protective covenant as recommended by the SHPO or avoidance plans. There is also no discussion of management plans.

VCSNS Response:

The SHPO letter refers to a Programmatic Agreement including the SHPO, SCE&G, the Nuclear Regulatory Commission, and any interested parties. It is SCE&G's intent to enter into such an agreement. Based on recent conversations between the SHPO and the NRC, it appears that the NRC will not be a party to the agreement. Regarding "interested parties", SCE&G will consult with SHPO to identify any potentially interested parties.

The agreement with SHPO would address both the protection of known cultural resources already surveyed at the site location (protective covenant) and the protection of resources discovered during the course of electrical transmission line construction. The protection of known historical resources within the Area of Potential Effects (APE) is discussed in the response to RAI CR-8. The VCSNS Unit 2 & 3 project has an existing Environmental Management Plan. This plan will be updated to provide further details on how protection of known cultural resources during pre-construction and construction is being accomplished (e.g. environmentally sensitive areas are noted on site layout drawings, known sensitive areas will be marked with signage, and signage awareness will be added to orientation training).

VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information

The SCE&G/SHPO agreement would cover cultural resources within the APE and those potentially impacted by the development of transmission lines associated with VCSNS.

Separate negotiations will occur between SHPO and Santee Cooper regarding cultural resources within Santee Cooper's VCSNS-associated transmission rights-of-way.

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-8 **Revision:** 0

Reference ER Information Needs Item: CR-18

Question Summary (RAI):

Provide documentation (i.e., a management plan), describing how SCE&G would avoid impacting significant cultural resources such as Pearson Cemetery, 38FA349, 38FA366 and 38FA 360 during construction and operation of the new units.

Full Text (supporting information):

Several significant cultural resources have been identified that are located within the proposed project's APE. To complete an analysis of construction and operating impacts to these resources, details describing how these impacts would be avoided are necessary.

A partial response was provided in NND-09-125. Has there been any input from the SHPO on appropriate avoidance mechanisms, such as fencing or signage? These details, and consultation with SHPO to provide input on these details, should be addressed in the PA or management plan.

VCSNS Response:

Locations of known cultural resources, along with other restricted areas, have been noted on the site layout drawings and will be marked in the field with signage stating "Environmentally Sensitive Area, Do Not Disturb". In addition, the Pearson Cemetery has been fenced. Site 38FA 360, although located outside of the Area of Potential Effects (APE), has been surrounded with temporary fencing which will remain in place until road modification/repair is completed in the adjacent area.

Awareness training for sensitive-area signage will be added to the construction site orientation training (similar to existing awareness training for wetland buffer-zone signage).

As Units 2 & 3 transition to operating facilities, the protection of these areas will be included in the appropriate unit operational procedures. In addition, SCE&G forestry harvest maps will also be updated with the location of sensitive areas on the VCSNS site. SCE&G intends to place the details of the protective measures in a Programmatic Agreement (or Memorandum of Understanding) to be negotiated with the SHPO and SCE&G. Further discussion related to a Programmatic Agreement may be found in the response to RAI CR-7.

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-9 **Revision:** 0

Reference ER Information Needs Item: CR-19

Question Summary (RAI):

Provide copies of the Environmental Management Plan (EMP) and Unit 1 procedures that pertain to cultural resources referenced in the ER, and describe how these would be applied to construction and operating impacts resulting from Units 2 and 3.

Full Text (supporting information):

Several significant cultural resources have been identified that are located within the APE. SCE&G currently has procedures in place for Unit 1 that pertain to the protection of cultural resources on site, and to required actions in case of inadvertent discovery. Similar procedures are necessary to assure that construction and operating impacts resulting from the new units can be analyzed.

Provide copies of SAP-404, SAP-405, the EMP and Unit 1 procedures for docketing, to provide clarification as to how these are implemented. Provide a more detailed description of how these procedures would be implemented for Units 2 and 3, and more detail on how environmental evaluations that are specifically for cultural resources are conducted.

VCSNS Response:

Copies of the current Unit 2/3 Environmental Management Plan (EMP) and the Unit 1 procedures (SAP-404 and SAP-405) have been made available in the Reading Room.

During the construction phase of the project, the Environmental Management Plan (Section 12.1) governs how and what SCE&G would do in the event of an inadvertent discovery of cultural resources onsite. As described in this section, in the event that previously unidentified artifacts are encountered during construction, an immediate halt in work activities would take place in the vicinity of that particular area, and SHPO would be notified by SCE&G.

Locations of known cultural resources found during site wide archaeological surveys, have been noted on the Construction General Site Layout drawings. In addition, these locations will be marked in the field with signs stating "Environmentally Sensitive Area, Do Not Disturb" (environmentally sensitive areas include, but are not restricted to known cultural resource sites). Awareness of the environmentally sensitive areas where ground disturbance is not allowed will be accomplished through the construction site orientation training. As VCSNS Units 2 & 3 transition to operating units, station administrative procedures (SAP-404 and SAP-405) will be updated to include the identified areas. In addition, Station Orientation Training for each operating unit (including VCSNS Unit 1) will be modified to include a discussion of environmentally sensitive area protection.

Environmental evaluations have been historically performed at VCSNS Unit 1 primarily in response to requirements found in the Environmental Protection Plan (EPP) which is Appendix B to the VCSNS Unit 1 operating license. As of the date of this RAI response,

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

the final template for EPPs for new reactors has not been issued by the NRC, but SCE&G assumes that new EPPs will address cultural resources evaluations.

Since the immediate area around VCSNS Unit 1 is highly disturbed, the potential for impact to cultural resources on the Unit 1 site due to the operation of the existing unit is remote.

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: TLine-1 **Revision:** 0

Reference ER Information Needs Item: G-9

Question Summary (RAI):

Provide the custom digital GIS coverages (shapefiles or geodatabases) used to construct Figure 3.4 and 3.5 in the Santee Cooper transmission siting study, including the transmission line layer and the point layer depicting the substation locations in these figures. Provide similar GIS data for Figures 4.2-1, 4.2-2 and 4.2-3 in the SCE&G transmission siting study.

Full Text (supporting information):

The staff needs this information to independently verify the measurements and acreages reported in the two siting studies. Previously submitted GIS data from SCE&G does not contain this information.

VCSNS Response:

The response to this RAI is contained in the response to RAI Gen-2, letter number NND-09-0197, dated July 16, 2009. In addition, ER Information Needs G-9 Part 1 provided the SCE&G data on a hard drive (reference letter NND-09-0122, dated May 7, 2009). As a convenience, the locations of the related GIS data are included for each of the three SCE&G Transmission Line Projects.

St George Project:

- Land Cover can be found on the hard drive at
(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-STGeorge_230kV_Line\Siting\Data\Land_Cover\StGeorge_Final\Landcover_031708.shp
- SCE&G Transmission Lines can be found on the hard drive at
(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-STGeorge_230kV_Line\Siting\Data\Utility\stgeorge_SCEG_Transmission_Regional_051908.shp
- Santee Cooper Transmission Lines can be found on the hard drive at
(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-STGeorge_230kV_Line\Siting\Data\Utility\stgeorge_Santee_Cooper_Transmission_Regional_051908.shp
- Duke Energy Transmission Lines can be found on the hard drive at
(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-STGeorge_230kV_Line\Siting\Data\Utility\stgeorge_Duke_Transmission_Regional_051908.shp
- Substation Points shown in the "St. George Route Location" map can be found on the hard drive at
(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-STGeorge_230kV_Line\Siting\Raw_Data\SCEG_trans_lines\ralph miller\Substations.shp

VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information

Killian Project:

- Land Cover can be found on the hard drive at
(Drive):SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Data\Land_Cover\VSC_Killian_Final_LandCover_050208.shp
- SCE&G Transmission Lines can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Raw_Data\SCEG_transmission_and_substations\FairfieldRichlandlines.shp
- Santee Cooper Transmission Lines can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Raw_Data\Santee_Cooper_trans_lines\richland_spans.shp
and
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Raw_Data\Santee_Cooper_trans_lines\fairfield_spans.shp
- Duke Energy Transmission Lines can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Raw_Data\Duke_trans_lines\duke_100kV_line_SC83ifshp.shp
- Substation points as shown on the "Killian Route Location" map can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Killian_230kV_Line\Siting\Raw_Data\SCEG_transmission_and_substations\FairfieldRichlandsubs.shp

Lake Murray Project

- Land Cover can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Lake_Murray\Siting\Data\Land_Cover\Lake_Murray_Final_LC_070108.shp
- SCE&G Transmission Lines can be found on the hard drive at
(Drive):\SCE&G
Projects\SCE&G\VC_Summer_Lake_Murray\Siting\Data\Utility\SCEG_Transmission_Lines.shp
- Santee Cooper Transmission Lines can be found on the hard drive at
(drive): \SCE&G
Projects\SCE&G\VC_Summer_Lake_Murray\Siting\Data\Utility\Santee_Cooper_Transmission_Lines.shp

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

- Duke Energy Transmission Lines can be found on the hard drive at
*(drive):\SCE&G
Projects\SCE&G\VC_Summer_Lake_Murray\Siting\Data\Utility\Duke_Transmission_Line.
shp*

- Substation points as shown on the "Lake Murray Route Location" map can be
found on the hard drive at
*(Drive):\SCE&G Projects\SCE&G\VC_Summer_3-
ST_George_230_kV_Line\Siting\Raw_Data\SCEG_trans_lines\ralphmillerSubstations.sh
p*

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

None

**VCSNS UNITS 2 and 3
Environmental Report Review
Response to NRC Requests for Additional Information**

NRC RAI Letter Dated June 22, 2009

NRC RAI Number: CR-10 **Revision:** 0

Reference ER Information Needs Item: CR-21

Question Summary (RAI):

Provide the timeline for when it is anticipated that SCE&G and Santee Cooper would be conducting cultural resource investigations for new transmission lines and modifications to existing lines.

Full Text (supporting information):

Analysis of transmission-line impacts on cultural resources is necessary to understand cumulative as well as direct and indirect impacts resulting from transmission-line modifications, construction of new transmission lines, and operations.

A schedule was provided in NND-09-0125; however, clarification is needed concerning how updates will be provided as the cultural resources surveys progress.

VCSNS Response:

Cultural resources investigations are planned as outlined in the attached schedules. These schedules are updated from those provided in ER Info Need CR-21, Letter NND-09-0125 dated May 11, 2009. Further updates to the schedules will be provided every January and July until the transmission line cultural resource surveys are completed.

Associated COLA Revisions:

No COLA revision is required as a result of the response to this RAI.

Associated Attachments:

SCE&G timelines for Killian, Lake Murray and St. George

Santee Cooper timeline for T Lines

Activity Name	Activity % Complete	Start	Finish	2012												2013												2014												2015												2016												2017																	
				D	J	F	M	A	M	J	Jul	A	S	O	N	D	D	J	F	M	A	M	J	Jul	A	S	O	N	D	D	J	F	M	A	M	J	Jul	A	S	O	N	D	D	J	F	M	A	M	J	Jul	A	S	O	N	D	D	J	F	M	A	M	J	Jul	A	S	O	N	D	D	J	F	M	A	M	J	Jul	A	S	O	N	D
				-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72					
X Santee Cooper Cultural Resource Investigations		02-Jan-12	02-Feb-17																																																																														
Kick-Off Meeting - (NOTE 1)	0%	02-Jan-12																																																																															
PRELIMINARY ENGINEERING / ROUTING	0%	02-Jan-12	13-Feb-12																																																																														
PROJECT MGT.	0%	02-Jan-12	28-Mar-13																																																																														
DESIGN (TLD)	0%	02-Jan-12	28-Mar-13																																																																														
E.A. CONTRACT	0%	14-Feb-12	19-Mar-12																																																																														
MGT. APPROVAL	0%	20-Mar-12	26-Mar-12																																																																														
OBTAIN SURVEY PERMITS	0%	27-Mar-12	16-Apr-12																																																																														
ENVIRON. ASSESSMENT & CULTURAL RESOURCES BID/AWARD CONTRACT	0%	17-Apr-12	21-May-12																																																																														
ENVIRON. ASSESSMENT & CULTURAL RESOURCES CONTRACT (NOTE 2)	0%	08-May-12	28-Mar-13																																																																														
SURVEY NOTIFICATIONS (on existing R/W) - if nec.	0%	29-Mar-13	25-Apr-13																																																																														
DESIGN (TLD)	0%	29-Mar-13	08-Dec-16																																																																														
PROJECT MGT.	0%	29-Mar-13	02-Feb-17																																																																														
P&P to TLD (from SURVEY)	0%	19-Apr-13																																																																															
SURVEY (LIDAR, Field work, Plats, etc.)	0%	26-Apr-13	05-Sep-13																																																																														
TIMBER CRUISE	0%	06-Sep-13	12-Dec-13																																																																														
ACQUIRE LAND (ROE OR EASEMENT)	0%	13-Dec-13	18-Dec-14																																																																														
REQUISITION MAT. (INCLUDES STOCK & NON-STOCK)	0%	09-Oct-14	03-Dec-14																																																																														
BID CLEARING	0%	07-Nov-14	12-Feb-15																																																																														
PRE-CON MEETING: R/W CLEARING	0%	13-Feb-15																																																																															
R/W CLEARING (includes side trimming existing R/W)	0%	16-Feb-15	10-Sep-15																																																																														
RECEIVE MATERIAL	0%	03-Jul-15	08-Oct-15																																																																														
BID CONSTRUCTION	0%	03-Jul-15	08-Oct-15																																																																														
STRUCTURE STAKING & MON.	0%	11-Sep-15	05-Nov-15																																																																														
PRE-CON MEETING: LINE CONSTRUCTION	0%	09-Oct-15																																																																															
LINE CONSTRUCTION	0%	12-Oct-15	11-Aug-16																																																																														
UPDATE SINGLE LINE FOR ECC	0%	25-Jul-16	25-Jul-16																																																																														
COMMUNICATIONS	0%	29-Jul-16	11-Aug-16																																																																														
RELAY (check out, etc.)	0%	29-Jul-16	11-Aug-16																																																																														
METERING	0%	29-Jul-16	11-Aug-16																																																																														
ENERGIZE LINE	0%		11-Aug-16																																																																														

NOTES:
 1. This assumes an 01/01/2012 Start Date, subject to change
 2. Environmental Assessment and Cltural Resources are for 2.44 miles of new Rights-Of-Way.
 3. Prepared April 2009.
 4. Updated July 2009.

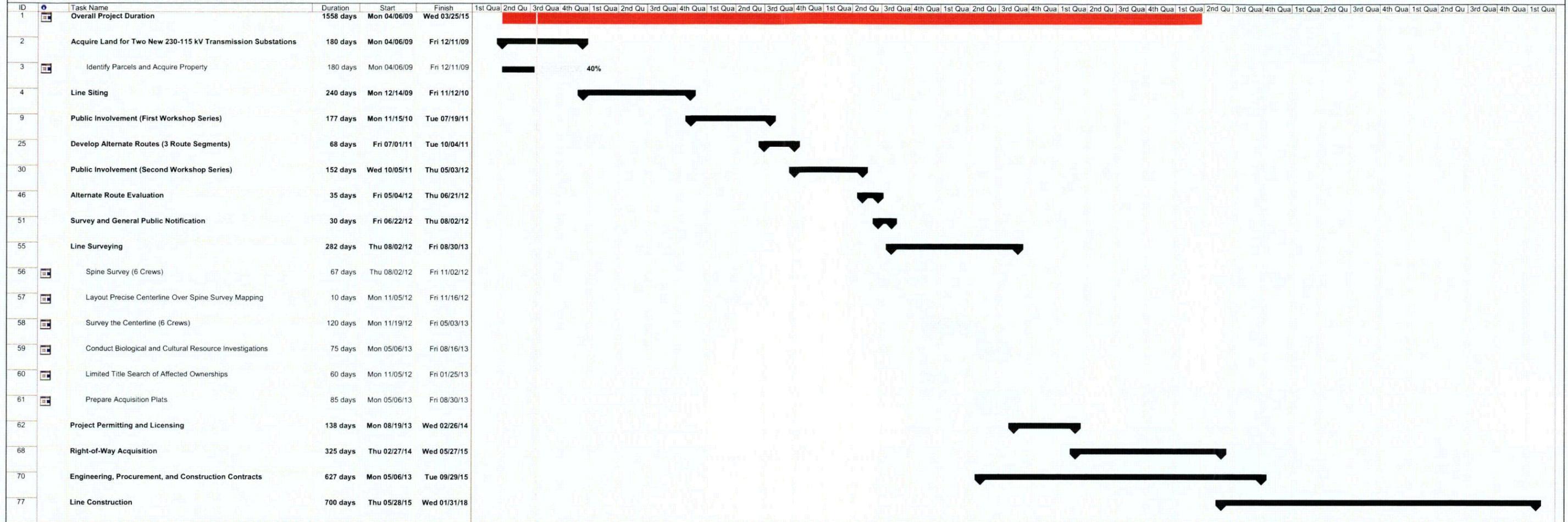
Master Schedule

Activity Name	Activity % Complete	Start	Finish	2012												2013												2014												2015												2016												2017												
				D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
				-1	1	2	3	4	5	6	7	8	9	10	11	12	13	1	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
AS-BUILTS PREPARATION	0%	12-Aug-16	15-Sep-16	AS-BUILTS PREPARATION																																																																								
BOM ANALYSIS (Mat's Coord)	0%	16-Sep-16	10-Nov-16	BOM ANALYSIS (Mat's Coord)																																																																								
DESIGN ANAL / AS-BUILTS	0%	11-Nov-16	08-Dec-16	DESIGN ANAL / AS-BUILTS																																																																								
PROJECT COST ANAL	0%	09-Dec-16	05-Jan-17	PROJECT COST ANAL																																																																								
TEFIS / LIS	0%	09-Dec-16	22-Dec-16	TEFIS / LIS																																																																								
PROJECT CLOSEOUT	0%	06-Jan-17	02-Feb-17	PROJECT CLOSEOUT																																																																								

NOTES:
 1. This assumes an 01/01/2012 Start Date, subject to change
 2. Environmental Assessment and Cltural Resources are for 2.44 miles of new Rights-Of-Way.
 3. Prepared April 2009.
 4. Updated July 2009.

Master Schedule

VCSNS-St. George 230 kV Line
Milestone Schedule



Project: VCS-St. George Project Sched
Date: Mon 07/20/09 Revision #1

Task: [Grey bar] Milestone: [Diamond] Rolled Up Task: [Blue bar] Rolled Up Progress: [Thick black bar] External Tasks: [Light grey bar] Group By Summary: [Down arrow]

Progress: [Thick black bar] Summary: [Thin black bar] Rolled Up Milestone: [Diamond] Split: [Dotted line] Project Summary: [Grey bar] Deadline: [Down arrow]

VCSNS-Lake Murray 230 kV Line Milestone Schedule

ID	Task Name	Duration	Start	Finish	Predecessors	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua				
1	Overall Project Duration	1400 days	Mon 05/11/09	Fri 09/19/14																					
2	Project Scoping	90 days	Mon 05/11/09	Fri 09/11/09																					
3	Environmental Evaluation and Planning	110 days	Mon 09/14/09	Fri 02/12/10	2																				
4	Initial Environmental, Land Use, and Cultural Resource Data Collection	110 days	Mon 09/14/09	Fri 02/12/10																					
10	Re-Survey the Line Route Along the Existing Right-of-Way	131 days	Fri 05/15/09	Fri 11/13/09																					
11	Complete Title Search to Confirm Current Ownership	15 days	Fri 05/15/09	Thu 06/04/09																					
12	Courtesy Notification to Property Owners to Announce Line Surveying	4 days	Fri 06/05/09	Wed 06/10/09	11																				
13	Survey the Line Centerline and Mark Right-of-Way Edges	110 days	Mon 06/15/09	Fri 11/13/09	12																				
14	Conduct Biological and Cultural Resource Investigations	120 days	Mon 11/16/09	Fri 04/30/10																					
15	Conduct Biological Investigation	30 days	Mon 03/22/10	Fri 04/30/10	13																				
16	Conduct Cultural Resource Investigation	30 days	Mon 11/16/09	Fri 12/25/09	13																				
17	Project Permitting and Licensing	195 days	Mon 05/03/10	Fri 01/28/11																					
23	Engineering, Procurement, and Construction Contracts	415 days	Mon 01/11/10	Fri 08/12/11																					
30	Line Construction	830 days	Mon 07/18/11	Fri 09/19/14																					

VCSNS-Killian 230 kV Line Milestone Schedule

ID	Task Name	Duration	Start	Finish	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu	3rd Qua	4th Qua	1st Qua	2nd Qu						
1	Overall Project Duration	1558 days	Mon 04/06/09	Wed 03/25/15	[Red bar]																											
2	Line Siting	273 days	Mon 04/06/09	Wed 04/21/10	[Red bar]																											
3	Update Data	103 days	Mon 04/06/09	Wed 08/26/09	[Progress bar 80%]																											
4	Recheck Agency Data (including Cultural Resources)	45 days	Mon 04/06/09	Fri 06/05/09	[Progress bar 100%]																											
5	Field Studies (Occ Bldgs, Pub Vis)	75 days	Mon 04/06/09	Fri 07/17/09	[Progress bar 95%]																											
6	Data Entry	55 days	Mon 05/04/09	Fri 07/17/09	[Progress bar 85%]																											
7	Prepare Workshop 1 Exhibits	28 days	Mon 07/20/09	Wed 08/26/09	[Task bar]																											
8	Public Involvement	147 days	Mon 06/08/09	Tue 12/29/09	[Task bar]																											
16	Develop Alternate Routes	19 days	Wed 12/30/09	Mon 01/25/10	[Task bar]																											
22	Public Involvement	52 days	Tue 01/26/10	Wed 04/07/10	[Task bar]																											
30	Alternate Route Evaluation	32 days	Thu 04/08/10	Fri 05/21/10	[Task bar]																											
35	Survey and General Public Notification	33 days	Mon 05/24/10	Wed 07/07/10	[Task bar]																											
39	Line Surveying	262 days	Thu 07/01/10	Fri 07/01/11	[Task bar]																											
40	Spine Survey (2 Crews)	67 days	Thu 07/01/10	Fri 10/01/10	[Task bar]																											
41	Layout Precise Centerline Over Spine Survey Mapping	15 days	Mon 10/04/10	Fri 10/22/10	[Task bar]																											
42	Survey the Centerline (2 Crews)	95 days	Mon 10/25/10	Fri 03/04/11	[Task bar]																											
43	Conduct Biological and Cultural Resource Investigations	50 days	Mon 03/07/11	Fri 05/13/11	[Task bar]																											
44	Limited Title Search of Affected Ownerships	60 days	Mon 10/04/10	Fri 12/24/10	[Task bar]																											
45	Prepare Acquisition Plats	85 days	Mon 03/07/11	Fri 07/01/11	[Task bar]																											
46	Project Permitting and Licensing	99 days	Mon 05/16/11	Thu 09/29/11	[Task bar]																											
52	Right-of-Way Acquisition	325 days	Fri 09/30/11	Thu 12/27/12	[Task bar]																											
54	Engineering, Procurement, and Construction Contracts	470 days	Mon 03/07/11	Fri 12/21/12	[Task bar]																											
61	Line Construction	584 days	Fri 12/28/12	Wed 03/25/15	[Task bar]																											

Project: VCS-Killian Project Schedule_ Date: Mon 07/20/09 Revision #1

Task [Light Blue Box] Milestone [Diamond] Rolled Up Task [Dark Blue Box] Rolled Up Progress [Thick Black Bar] External Tasks [Grey Box] Group By Summary [Down Arrow]

Progress [Thick Black Bar] Summary [Down Arrow] Rolled Up Milestone [Diamond] Split [Dotted Line] Project Summary [Grey Box] Deadline [Down Arrow]