Work Classification

Category:	Substation
Type:	SRSE
Type Desc:	STRUCTURAL AND ELECTRICAL
Work Type:	Other Work

Ownership / Management

AWC:	
Statewide:	Yes
Owner:	[redacted]
Manager:	[redacted]

Project Information

Status:	Release for Construction	Associated Projects:	
SPS #:		Assignment ID:	
AIS Score:		Patrol Find ID:	

Budget Summary - Preferred Option — System Resiliency - Circuit Breaker Automation

2015

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	2015 Circuit Breaker Automation	Prelim	1	0 %	$1,900,000	$1,900,000
				2015 Total:	**$1,900,000**	**$1,900,000**

2016

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	2016 Circuit Breaker Automation	Prelim	1	0 %	$1,900,000	$1,900,000
				2016 Total:	**$1,900,000**	**$1,900,000**

2017

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
3	2017 Circuit Breaker Automation	Prelim	1	0 %	$1,900,000	$1,900,000
				2017 Total:	**$1,900,000**	**$1,900,000**
				Total Project:	**$5,700,000**	**$5,700,000**

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	System Resiliency - Circuit Breaker Automation	1,2,3	$5,700,000	$0	100 %	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	2015 Circuit Breaker Automation	$1,900,000			$0.00	$0.00
2	2016 Circuit Breaker Automation	$1,900,000			$0.00	$0.00
3	2017 Circuit Breaker Automation	$1,900,000			$0.00	$0.00
4	cancelled	$0			$0.00	$0.00
5	cancelled	$0			$0.00	$0.00

Background / Scope

Issue:

Substation electro-mechanical feeder relays need to be replaced with high-speed electronic relays provide DSCADA for remote breaker operation and to meet NESC arc flash requirements.

Project Description:

10/22/14 - This project is a revised ENG. The Circuit Breaker Automation work is being split into two parts. This project covers the first part, which includes funding that was part of the original System Resiliency program approved by the PURA in 2013. The approved funding is as follows:

2015 - $1.9M, 2016 - $1.9M, 2017 - $1.9M. Total - $5.7M.

In 2015, the $1.9M funding will be for automation projects at [redacted]

It will also include Engineering for 2016 projects at [redacted].

5/21/14 - This project is being submitted for ENG approval. This will be a blanket project and include all of the work remaining to replace existing substation feeder relays with new relays to meet NESC Arc Flash requirements. This project is expected to cover work in 2015 - 2018 and include relay replacement on approximately 140 feeders. The cost per feeder is approximately $68k.

Cash flow will be as follows:

2015 - $3.0M, 2016 - $3.0M, 2017 - $1.75M, 2018 - $1.75M.

When the new relays are installed, DSCADA is also installed so the arc flash feature can be turned on/off by the SOC and the feeder breakers can also be operated by the SOC.

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?

NESC requirements will continue to be met with work practices.

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☑

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted:		Approx. Pole Count (NU):	
Crit. Cust. Impacted:		Approx. Pole Count (Other):	
Adjoining Property Owner Consent Required:	☐	Town Hearing Required:	☐
Other Utility Pole Custodian Area:	☐	Easement Required:	☐
State Highway Permit Required:	☐		

Relocation / New Service

New Srvc. Contact:	Requestor Type:
Customer Type:	State Highway Project #:
Request Number:	Route #:

Design Alternative CS00015-01

General Information

Segment:	1 - 2015 Circuit Breaker Automation			Status:	Prelim Design Submitted
Segment Type:	DSCADA	Town:	BERLIN	Budget Year:	2015
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2015
Description:	2015 circuit breaker automation.				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	various	various	New feeder relaying and DSCADA.

Design Alternative CS00015-01

Estimate

	Preliminary Estimate Summary
Revision Number:	1
Contingency:	0.00 %
SubTotal:	$1,900,000
Contingency Amount:	$0
Estimate:	$1,900,000
Reimbursement:	$0
Net Amount:	**$1,900,000**
Description:	2015 System Resiliency

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER	14-ALL14	[redacted]		$900,000.00
OTHER OTHER	14-ALL14			$900,000.00
OTHER OTHER	14-ALL14			$100,000.00

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Design Alternative CS00015-02

General Information

Segment:	2 - 2016 Circuit Breaker Automation			Status:	Prelim Design Submitted
Segment Type:	DSCADA	Town:	BERLIN	Budget Year:	2016
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2016
Description:	2016 circuit breaker automation.				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	various	various	New feeder relaying and DSCADA.

Design Alternative CS00015-02

Estimate

	Preliminary Estimate Summary
Revision Number:	1
Contingency:	0.00 %
SubTotal:	$1,900,000
Contingency Amount:	$0
Estimate:	$1,900,000
Reimbursement:	$0
Net Amount:	**$1,900,000**
Description:	2016 circuit breaker automation

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER	14-ALL14	[redacted]		$900,000.00
OTHER OTHER	14-ALL14			$900,000.00
OTHER OTHER	14-ALL14			$100,000.00

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Design Alternative CS00015-03

General Information

Segment:	3 - 2017 Circuit Breaker Automation			Status:	Prelim Design Submitted
Segment Type:	DSCADA	Town:	BERLIN	Budget Year:	2017
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2017
Description:	2017 circuit breaker automation.				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	various	various	New feeder relaying and DSCADA.

Design Alternative CS00015-03

Estimate

	Preliminary Estimate Summary
Revision Number:	1
Contingency:	0.00 %
SubTotal:	$1,900,000
Contingency Amount:	$0
Estimate:	$1,900,000
Reimbursement:	$0
Net Amount:	**$1,900,000**
Description:	2017 circuit breaker automation

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER	14-ALL14	[redacted]		$900,000.00
OTHER OTHER	14-ALL14			$900,000.00
OTHER OTHER	14-ALL14			$100,000.00

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Design Alternative CS00015-04

General Information

Segment:	4 - cancelled			Status:	Cancelled
Segment Type:	DSCADA	Town:	BERLIN	Budget Year:	2018
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2018
Description:	cancelled				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	Miles	1	Miles of ROW Exposure Effected
2	Customer	1	Number of Customers Effected
3	Miles Backup	1	Miles of ROW without Backup Source off ROW
4	Customer Backup	1	Number of Customers without Backup Source off ROW

Design Alternative CS00015-04

Estimate

	Preliminary Estimate Summary
Revision Number:	1
Contingency:	0.00 %
SubTotal:	$0
Contingency Amount:	$0
Estimate:	$0
Reimbursement:	$0
Net Amount:	**$0**

Description:

Item Description	CU	$ / Per	Qty	Amount

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	

Reliability Projection

Title:

Outage Start Date: 01/01/2007 Outage End Date: 05/13/2014 Years History: 7.37

[redacted]

Design Alternative CS00015-05

General Information

Segment:	5 - cancelled			Status:	Cancelled
Segment Type:	OTHER	Town:	BERLIN	Budget Year:	2015
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2015

Description:

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Design Alternative CS00015-05

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00 %
SubTotal:	$0
Contingency Amount:	$0
Estimate:	$0
Reimbursement:	$0
Net Amount:	**$0**

Description:

Item Description	CU	$ / Per	Qty	Amount

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes