



CATS HV Status Report

Presented to

SWAT

May 19, 2009

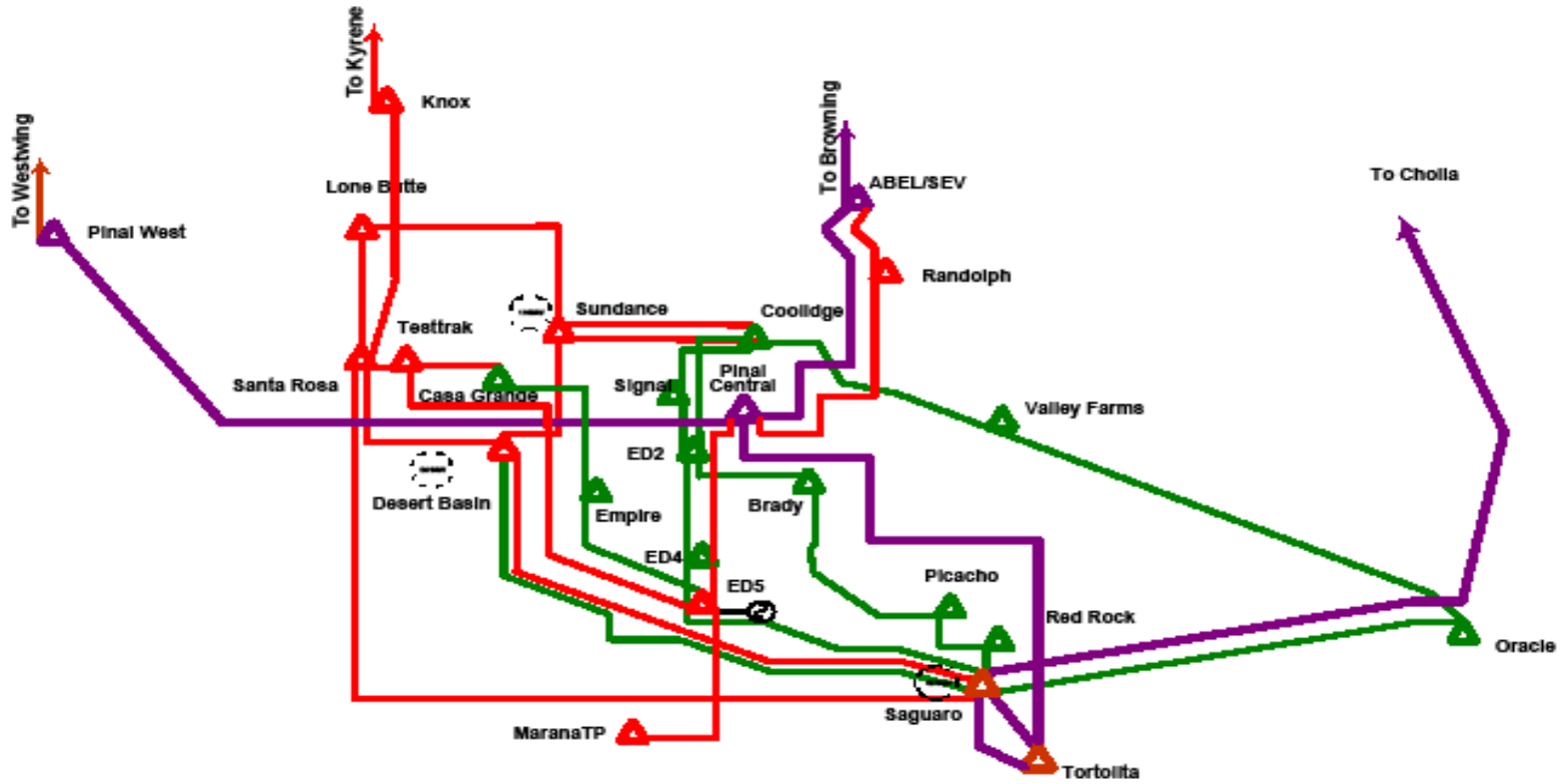


2009 Study Plan





- **Task 1:** Conduct Assessment of the 2019 Transmission Plan for CATS HV detailed system
- **Task 2:** Coordinated Regional Plans within Pinal County (land use, transmission, etc.)
- **Task 3:** Document all findings and conclusions coincident with SWAT/WestConnect Annual Report



CATS HV Study Area



Legend

	115kV
	138kV
	230kV
	345kV
	500kV

Base Case Development

- 2019 Heavy Summer Case from 2018 CATS HV Final Base Case
- Detailed Representation for ED2, ED3, SWTCo, and APS Casa Grande/Coolidge
- Includes SPPR transmission upgrades and generation (627MW)
- Includes SRP Coolidge (561MW), Abel (600MW), and Pinal Central (1200MW)
- Final Case Completed April 14, 2009



Contingency Assessment

- Base Case N-0 Conditions
- Contingency Analysis
 - 2417 N-1 Outages (Arizona Lines, Transformers and Generating Units)
 - N-0 and N-1 Analysis Only



Task 1: Preliminary Findings

- No N-0 overloads in the CATS HV Area
- N-1 Voltage Deviations
 - Valley Farms
 - Merril to SE5 Mitigated with Switch Capacitors
- N-1 Overloads
 - None Within The CATS HV Area
 - 2008 Overloads Have Been Mitigated
 - Casa Grande 230/69kV Xfmr loaded to 70% of 187MVA rating for loss of Milligan 230/69kV Xfmr



Voltage Deviation

BUS NAME	BUS KV	BUS AREA	BUS ZONE	CONTINGENCY DESCRIPTION	Cats_Rev3_final
MERRIL	69	14	845	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	-14.96%
SE5	69	14	845	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	-14.94%
VLYFARMS	69	14	845	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	-14.51%
VLYFARMS	115	14	141	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	-13.88%
GILABEND	69	14	148	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	-11.34%
GILABEND	230	14	141	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	-10.66%
BUTERFLD	69	14	148	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	-9.34%
HACKBERY	69	14	164	Line HACKBERY 230.0 to MORENCI 230.0 Circuit 1	-8.56%
HACKBERY	230	14	164	Line HACKBERY 230.0 to MORENCI 230.0 Circuit 1	-7.98%
DOSCONDO	230	14	171	Line HACKBERY 230.0 to MORENCI 230.0 Circuit 1	-7.39%
BOOTHILL	115	14	141	Line ADAMS TP 115.0 to APACHE 115.0 Circuit 1	-6.87%
DOSCONDO	230	14	171	Line APACHE 230.0 to RED TAIL 230.0 Circuit 1	-6.31%
SNMANUEL	100	14	845	Tran SNMANUEL 115.00 to SNMANUEL 100.00 Circuit 1	-6.24%
HACKBERY	69	14	164	Line APACHE 230.0 to RED TAIL 230.0 Circuit 1	-6.16%
HACKBERY	230	14	164	Line APACHE 230.0 to RED TAIL 230.0 Circuit 1	-5.75%
CASGRAPS	69	14	845	Tran CASGRAPS 230.00 to CASGRAPS 69.00 Circuit 1	-5.54%
SE8	69	14	845	Line CASGRAPS 69.0 to SE8 69.0 Circuit 1	-5.20%
SE8	69	14	845	Tran CASGRAPS 230.00 to CASGRAPS 69.00 Circuit 1	-5.18%



Voltage Magnitude

NUMBER	NAME	KV	AREA	ZONE	OTG	OTG DESCRIPTION	CONTINGENCY DESCRIPTION	Cats_Rev3_final
84875	MERRIL	69	14	845	336	"line_335"	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	86.14%
84904	SE5	69	14	845	336	"line_335"	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	86.14%
14359	VLYFARMS	115	14	141	336	"line_335"	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	87.34%
84908	VLYFARMS	69	14	845	336	"line_335"	Line COOLIDGE 115.0 to VLYFARMS 115.0 Circuit 1	88.40%
17044	HACKBERY	230	14	164	285	"line_284"	Line HACKBERY 230.0 to MORENCI 230.0 Circuit 1	91.69%
14235	GILABEND	230	14	141	71	"line_70"	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	92.51%
84419	GILABEND	69	14	148	71	"line_70"	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	92.52%
84412	BUTERFLD	69	14	148	71	"line_70"	Line GILARIVR 230.0 to GILABEND 230.0 Circuit 1	93.37%
17045	HACKBERY	69	14	164	285	"line_284"	Line HACKBERY 230.0 to MORENCI 230.0 Circuit 1	93.40%
17044	HACKBERY	230	14	164	271	"line_270"	Line APACHE 230.0 to RED TAIL 230.0 Circuit 1	93.92%



Task 2 CATS HV GIS DATA

- Develop Common CATS HV Area GIS Data with Jurisdictions within CATS HV Area
 - Utility GIS RAW DATA
 - Standardize GIS DATA
 - Pinal Land use Map
 - Incorporate Transmission Facilities
 - Gate Keeper of Data



Remaining Tasks and Schedule

- **Task 1:** Fix Voltage issues, Completed
- **Task 2:** Additional Workshop, June 22nd
- **Task 3:** Draft Report by August

