

# Arizona Corporation Commission Workshop

Sixth Biennial Transmission Assessment

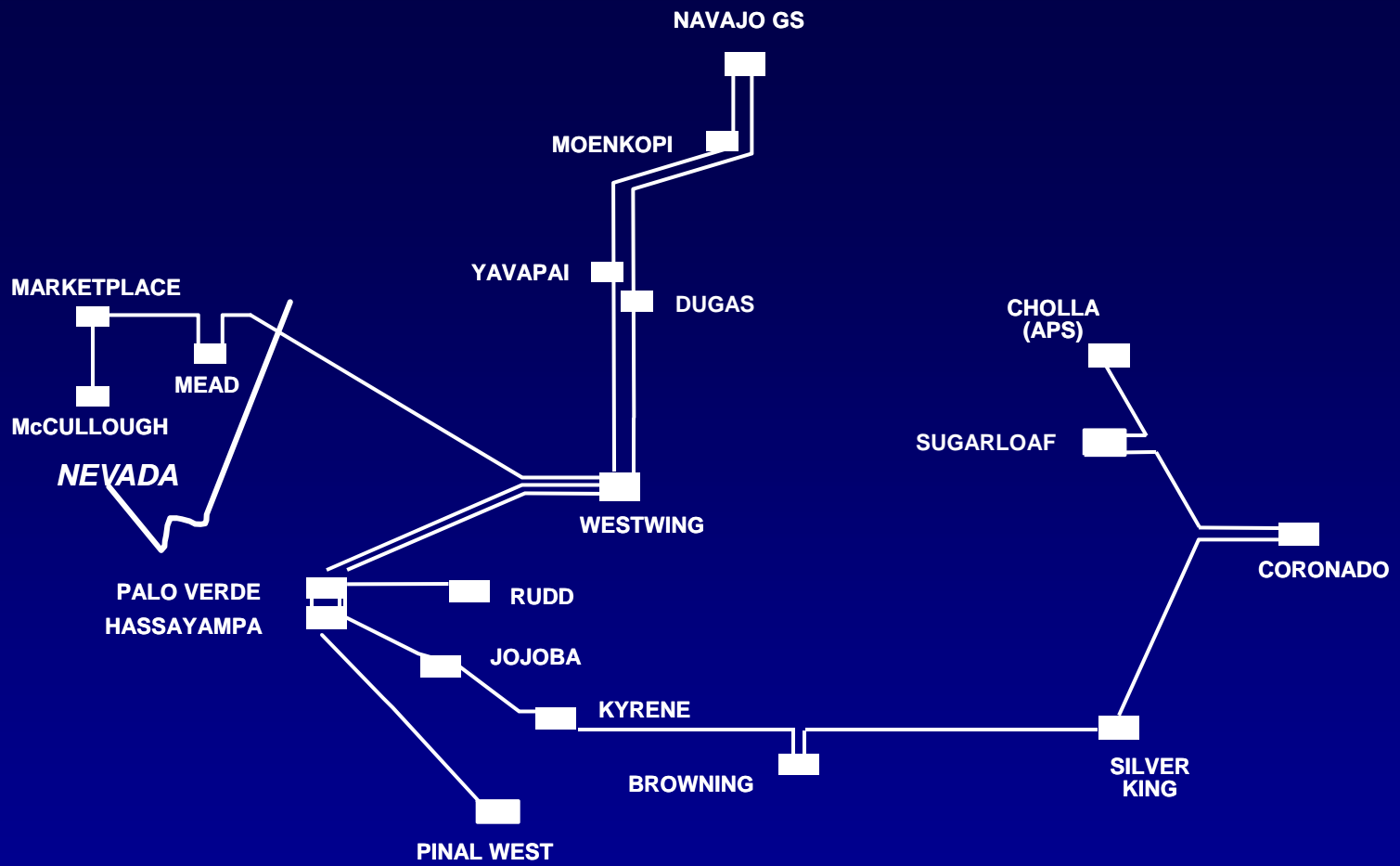
*SRP Ten Year Transmission Plan  
2010-2019*

Chuck Russell, SRP Transmission Planning

Carnegie Center, Phoenix, AZ  
June 3 & 4, 2010

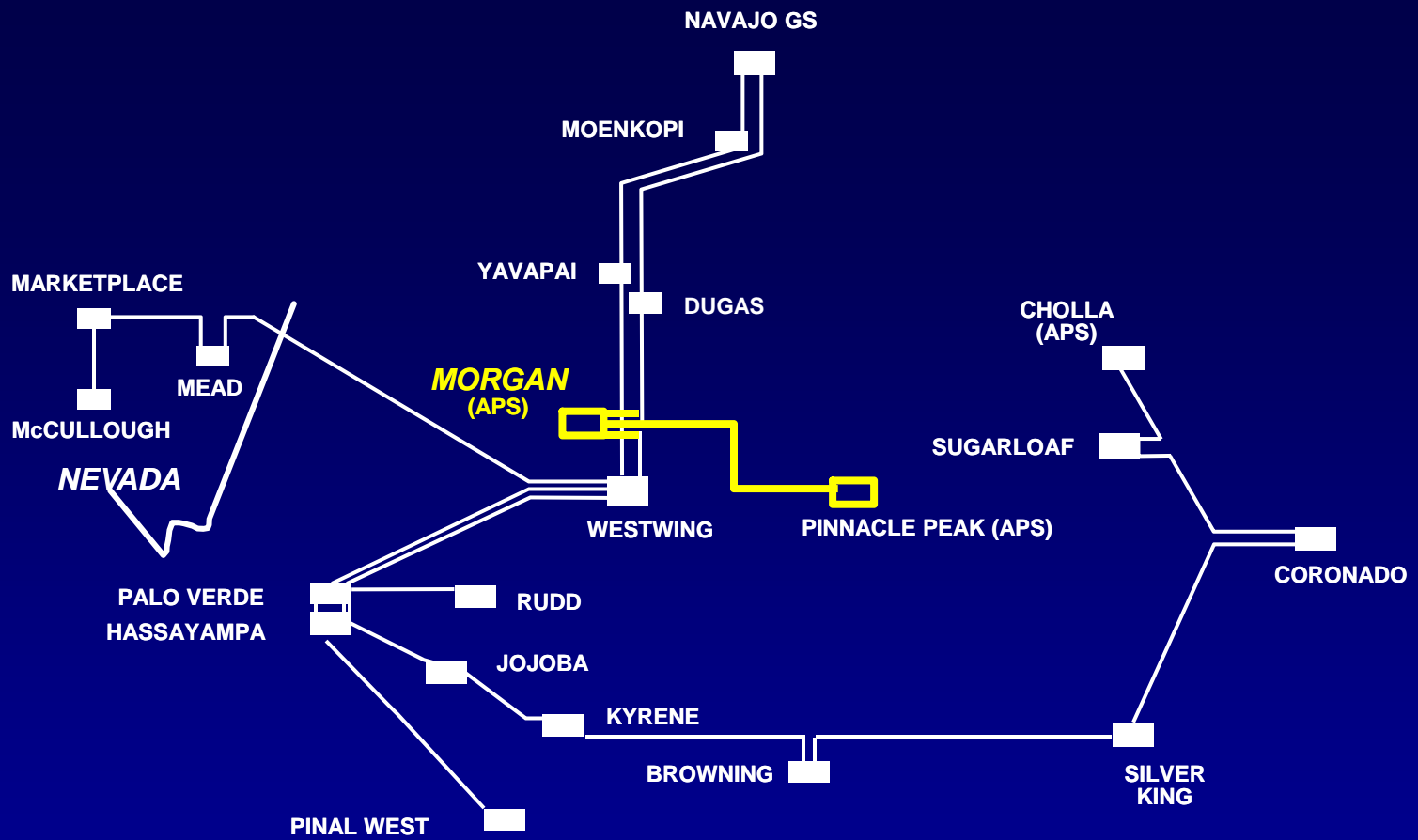


Delivering More Than Power.®



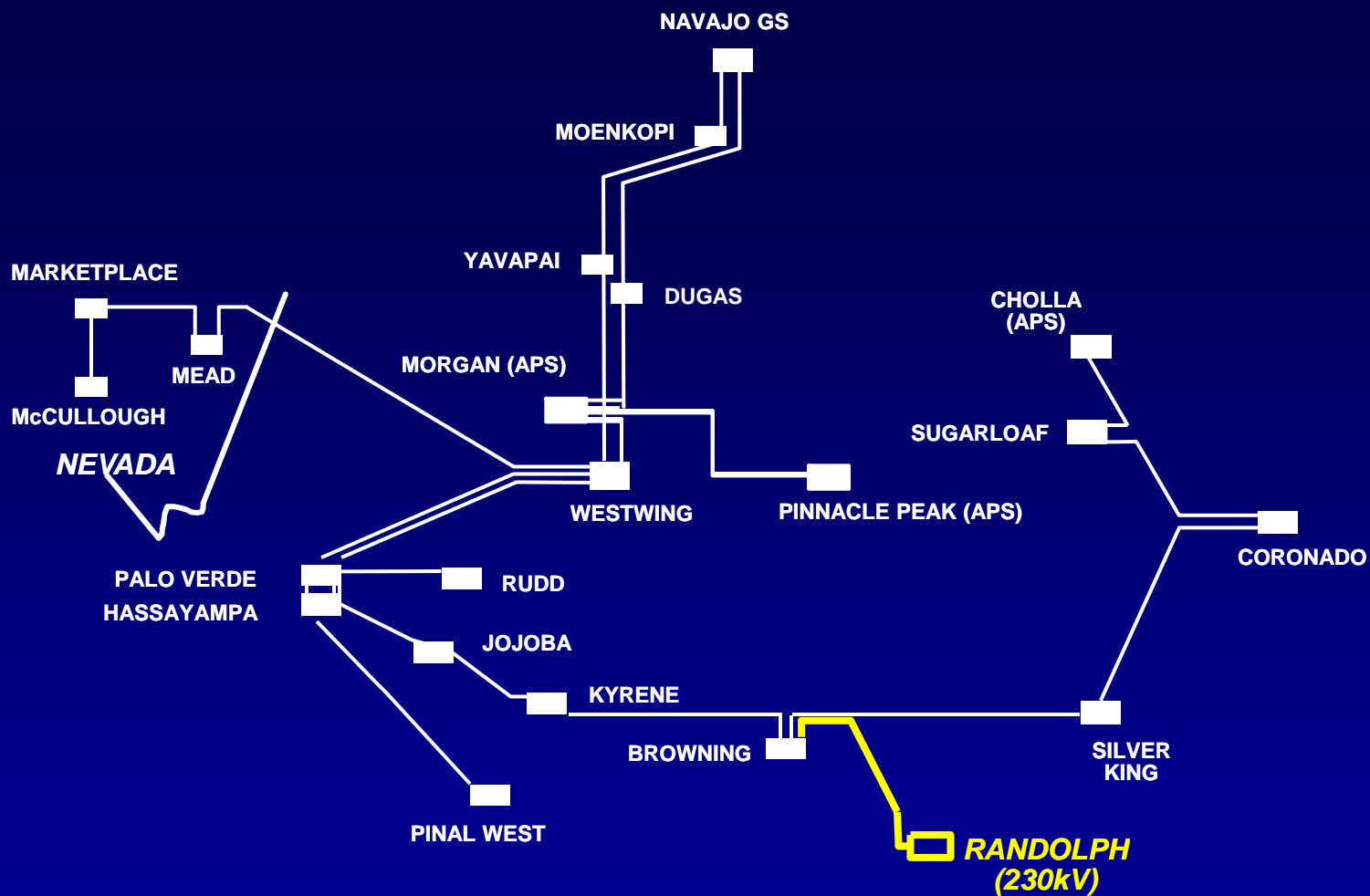
**TODAY**

**SALT RIVER PROJECT  
500kV SYSTEM**



2010

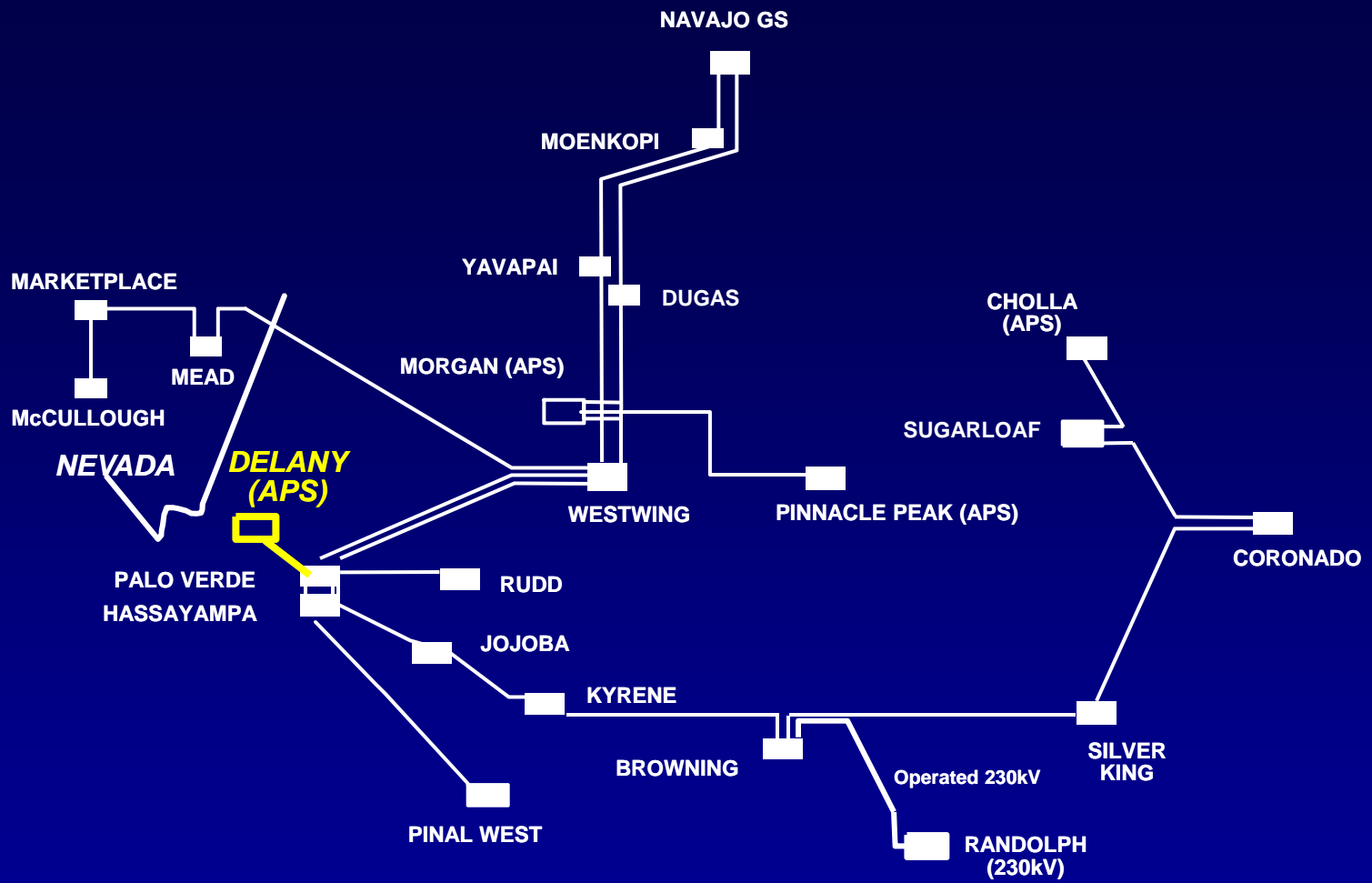
SALT RIVER PROJECT  
500kV SYSTEM



**Note: This segment is constructed  
500kV, operated 230kV**

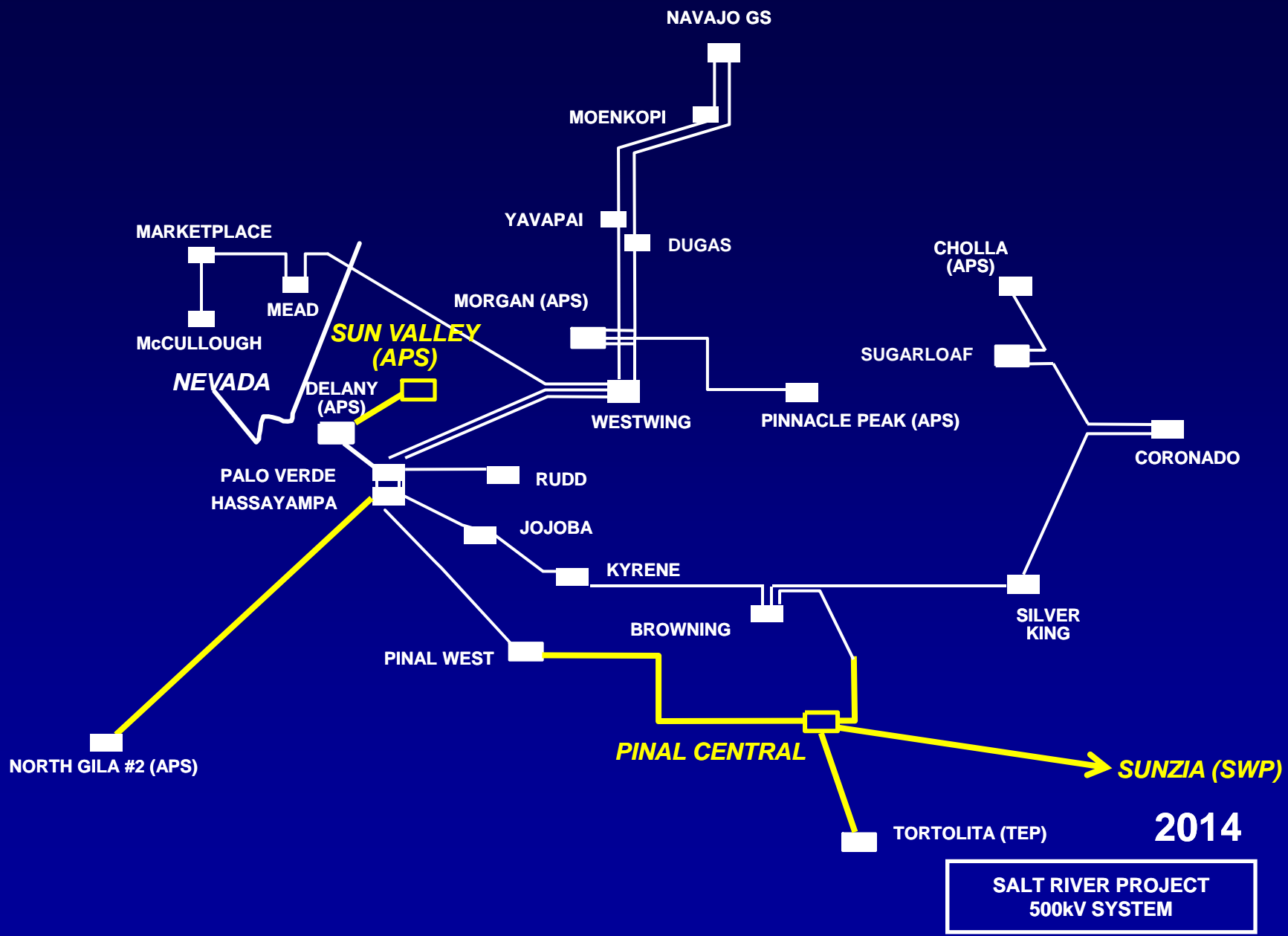
**2011**

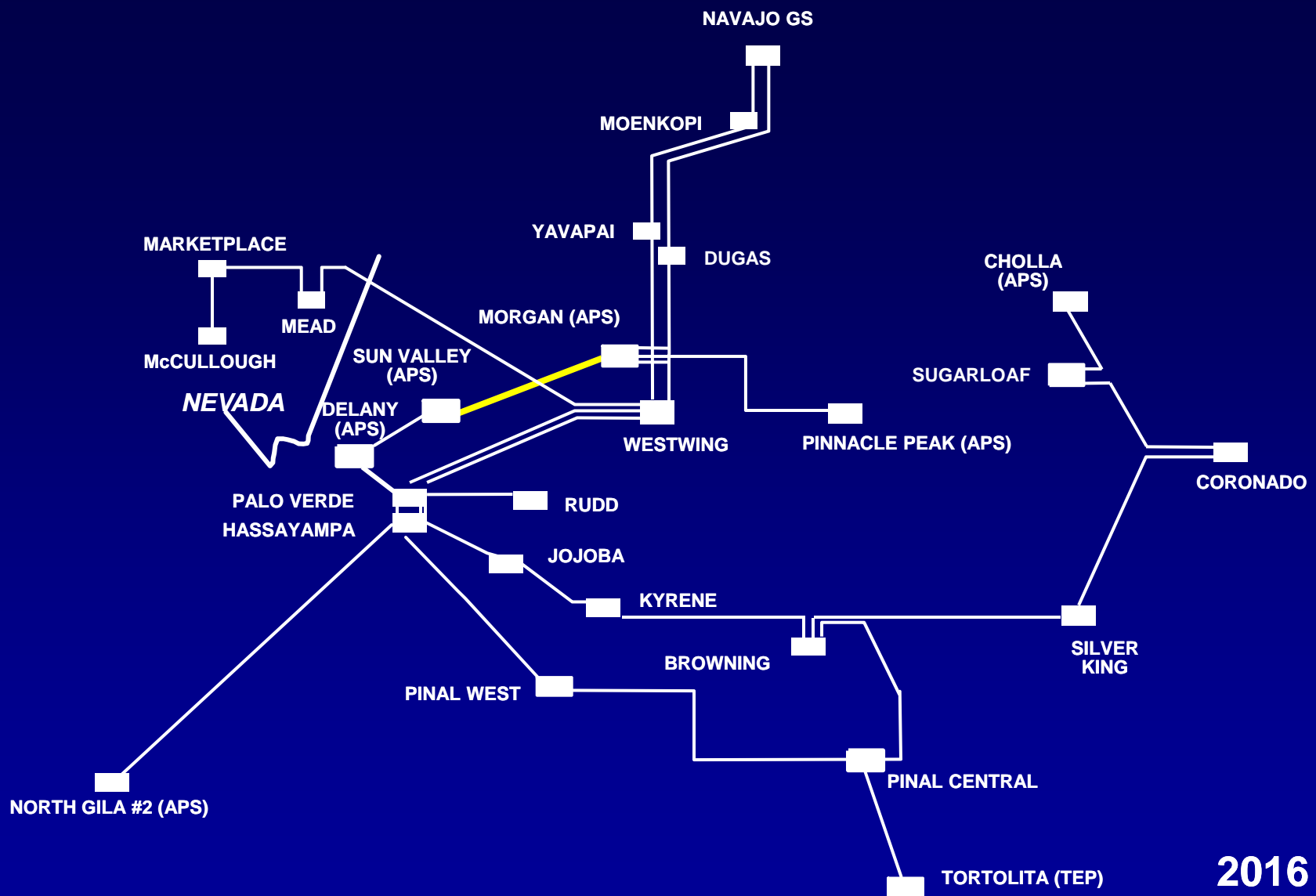
**SALT RIVER PROJECT  
500kV SYSTEM**



2012

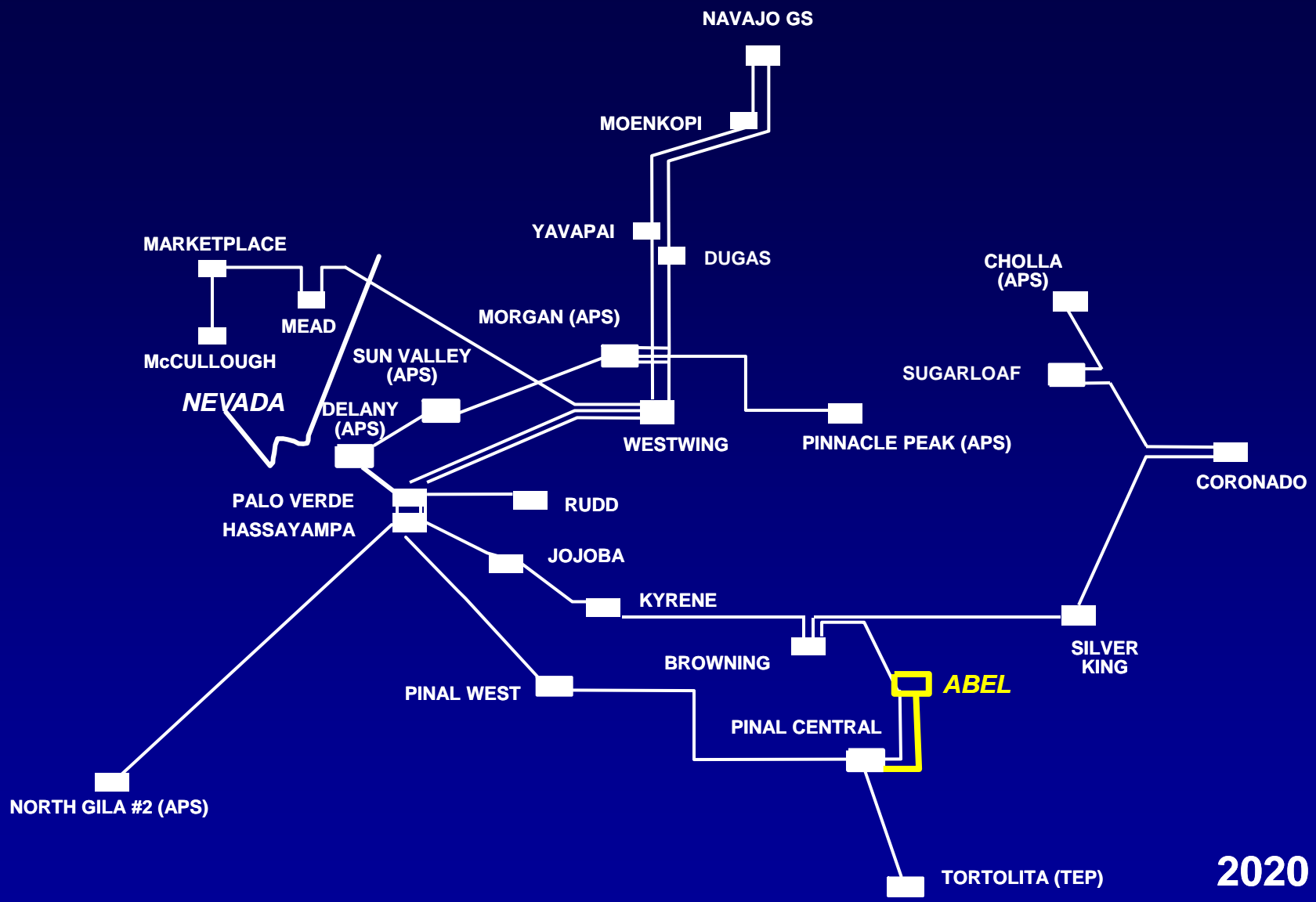
SALT RIVER PROJECT  
500kV SYSTEM



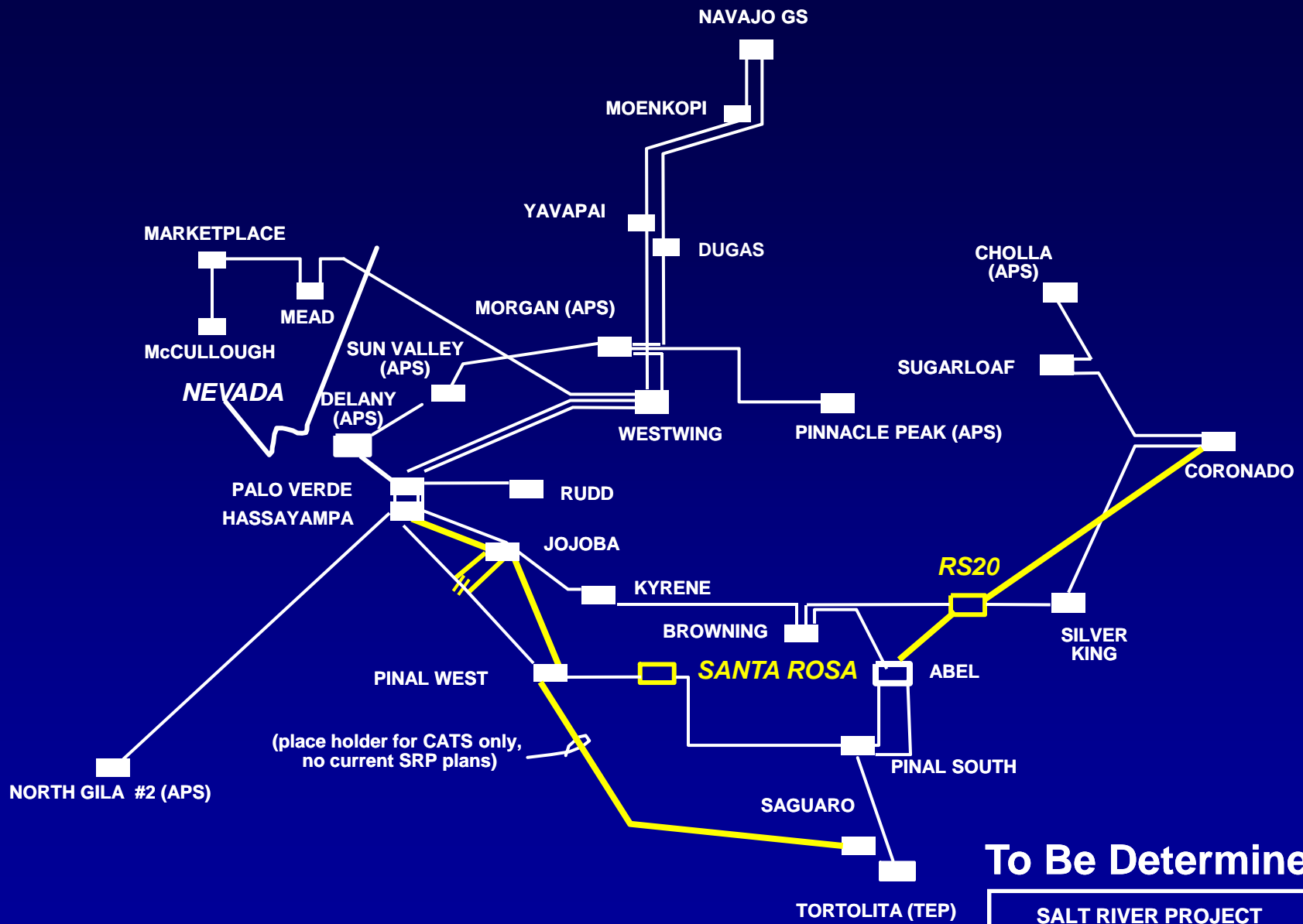


**2016**

**SALT RIVER PROJECT  
500kV SYSTEM**

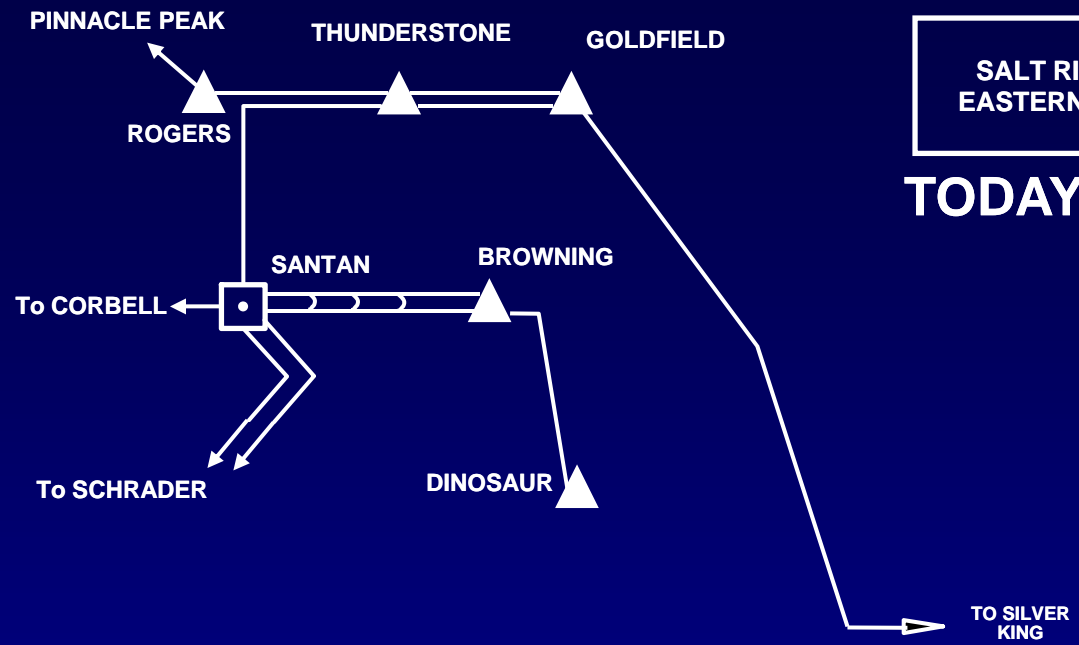


**2020**  
**SALT RIVER PROJECT**  
**500kV SYSTEM**



To Be Determined

SALT RIVER PROJECT  
500kV SYSTEM

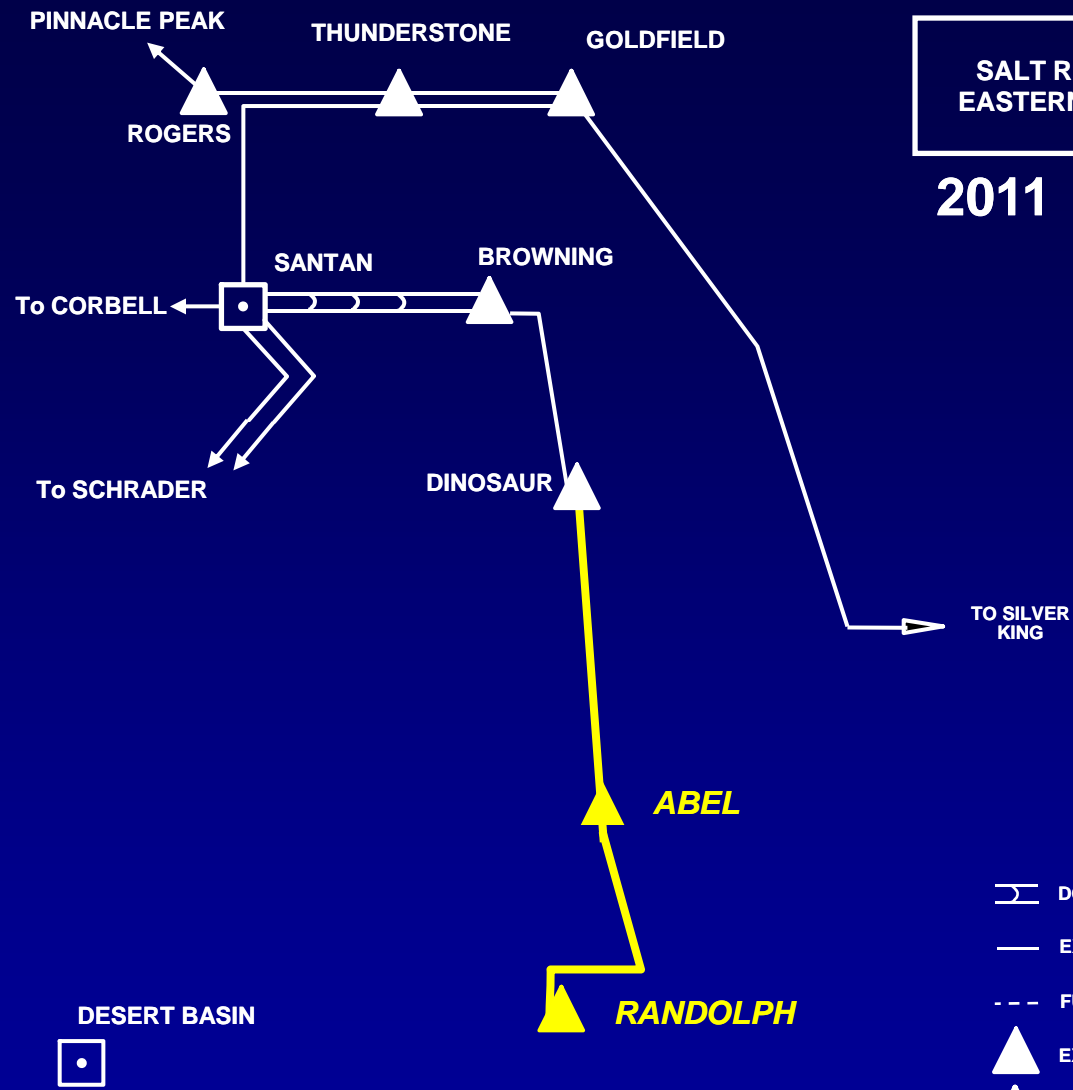


**SALT RIVER PROJECT  
EASTERN 230kV SYSTEM**

**TODAY**







**DESERT BASIN**

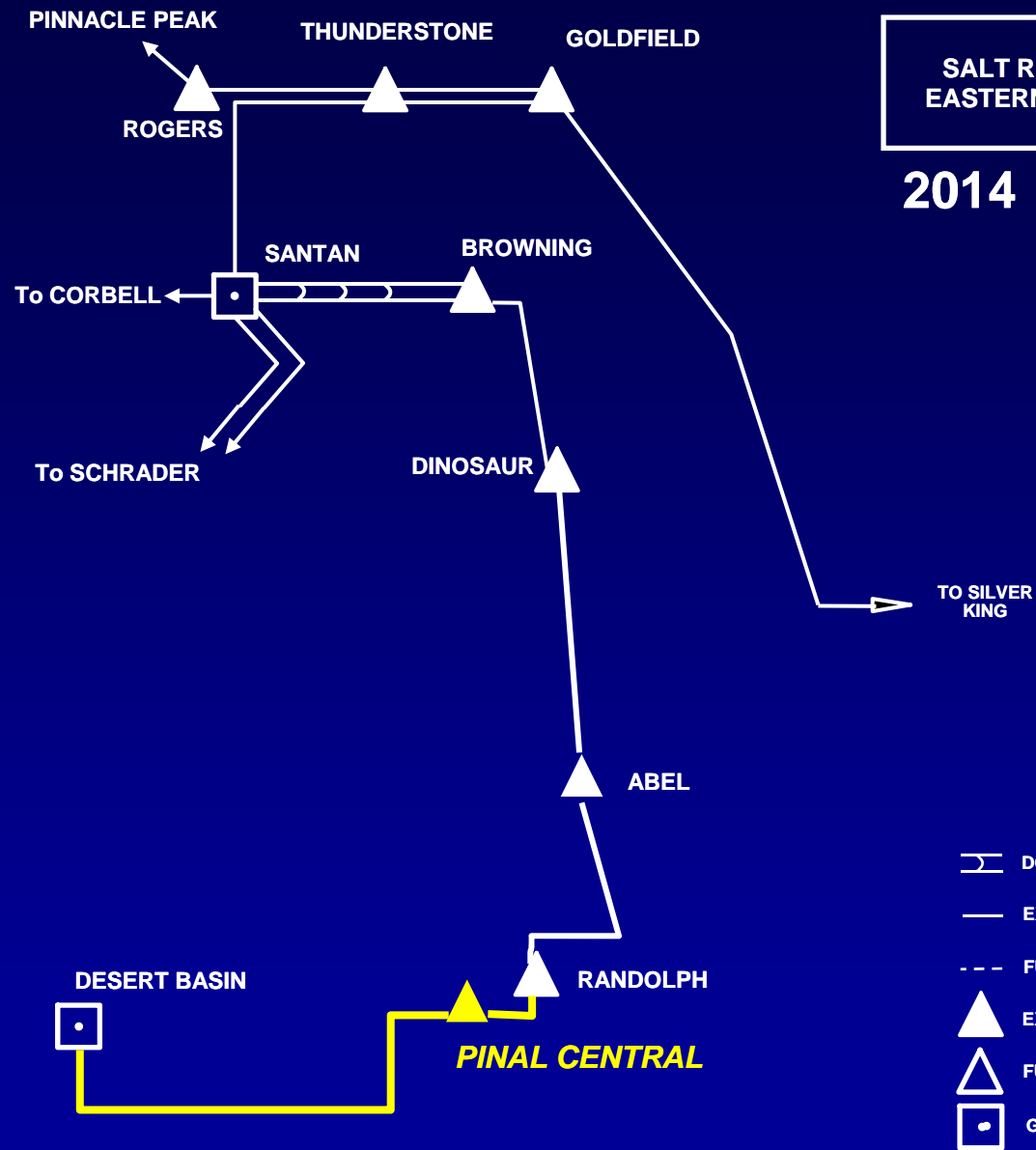
- DOUBLE CIRCUIT, PHASE TIED LINE
- EXISTING 230kV CIRCUIT
- FUTURE 230kV CIRCUIT
- EXISTING 230kV SUBSTIT
- FUTURE 230kV SUBSTIT
- GENERATING STATION

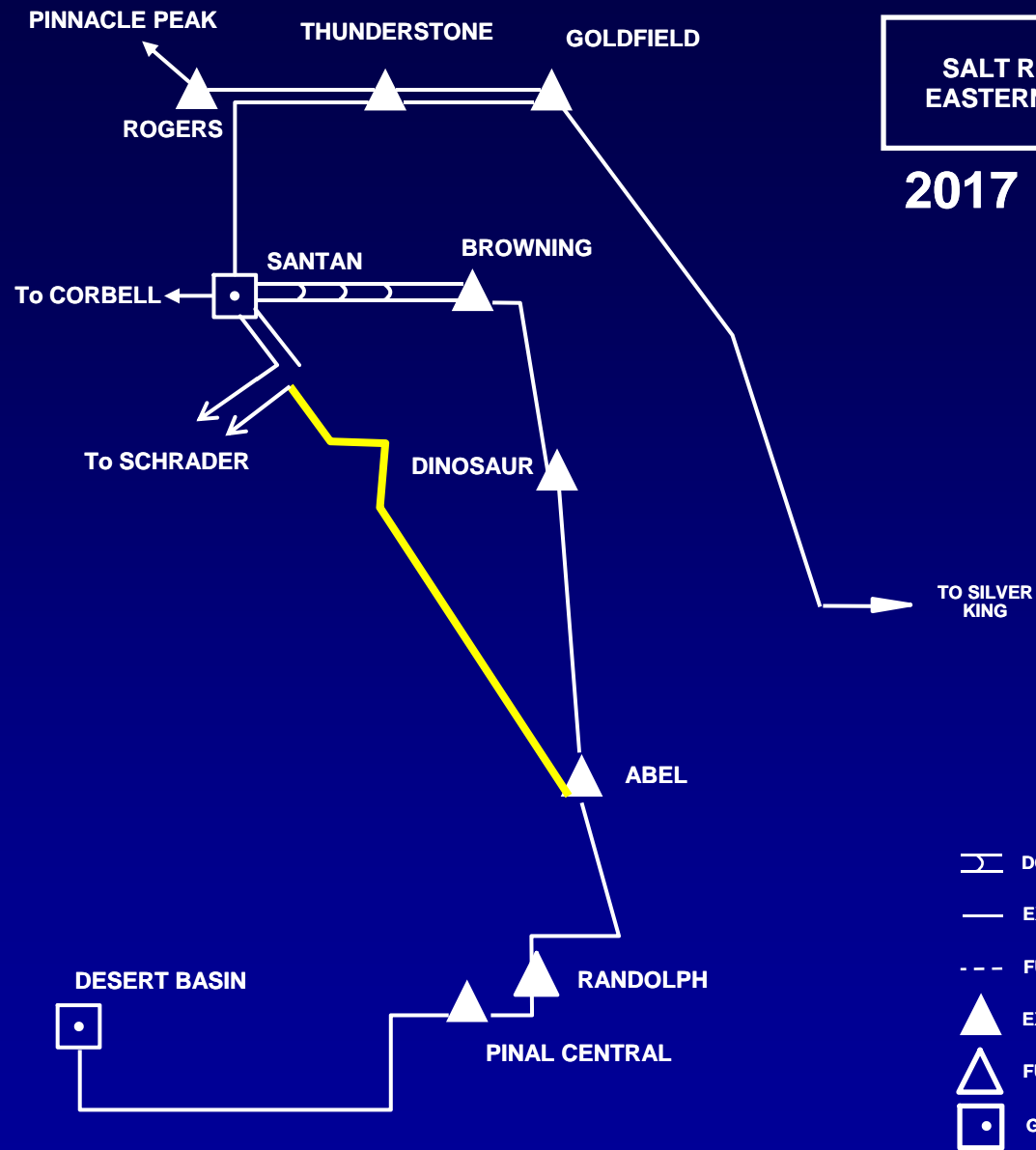


**SALT RIVER PROJECT  
EASTERN 230kV SYSTEM**

**2011**







-  DOUBLE CIRCUIT, PHASE TIED LINE
-  EXISTING 230kV CIRCUIT
-  FUTURE 230kV CIRCUIT
-  EXISTING 230kV SUBSTIT
-  FUTURE 230kV SUBSTIT
-  GENERATING STATION

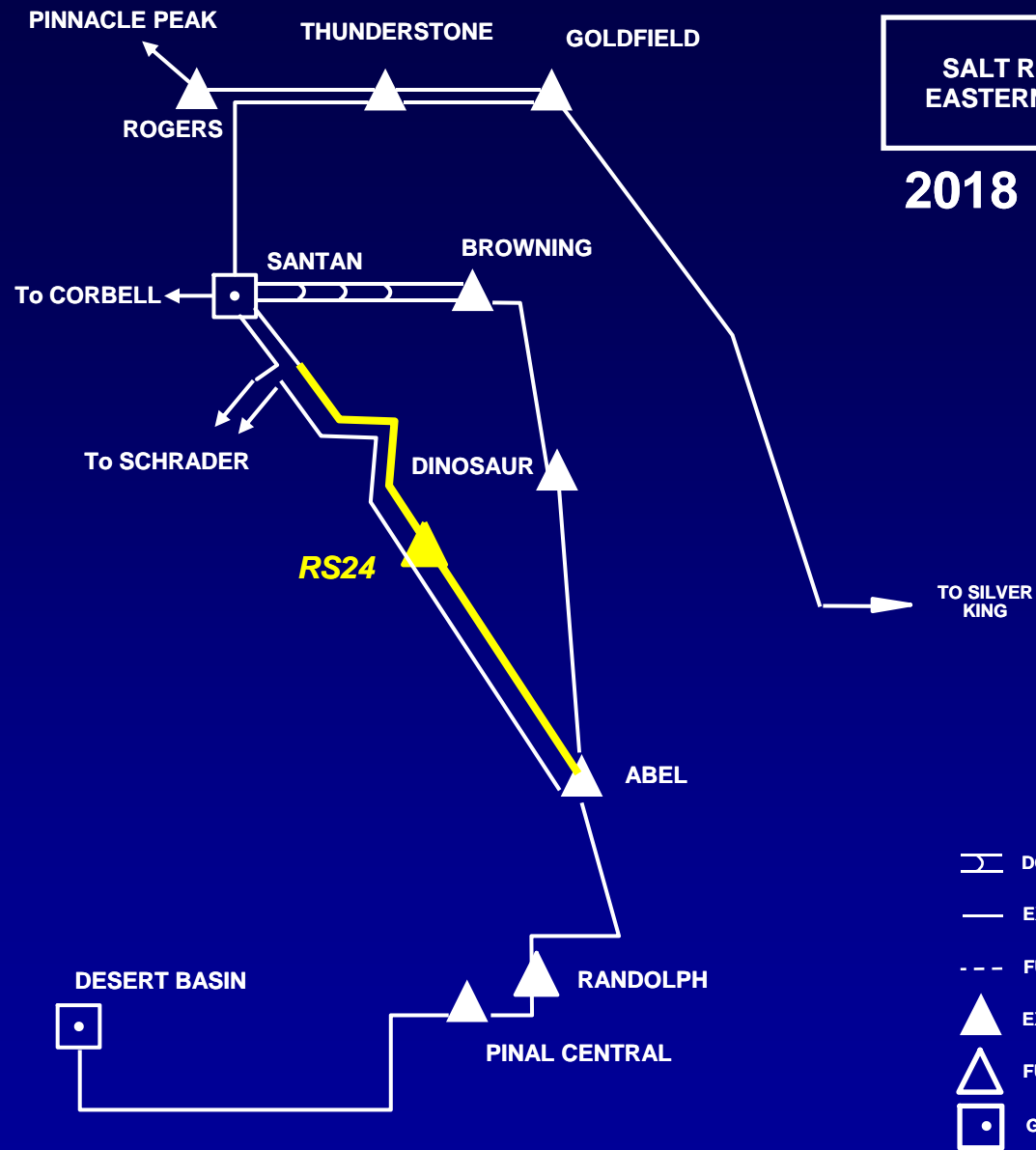










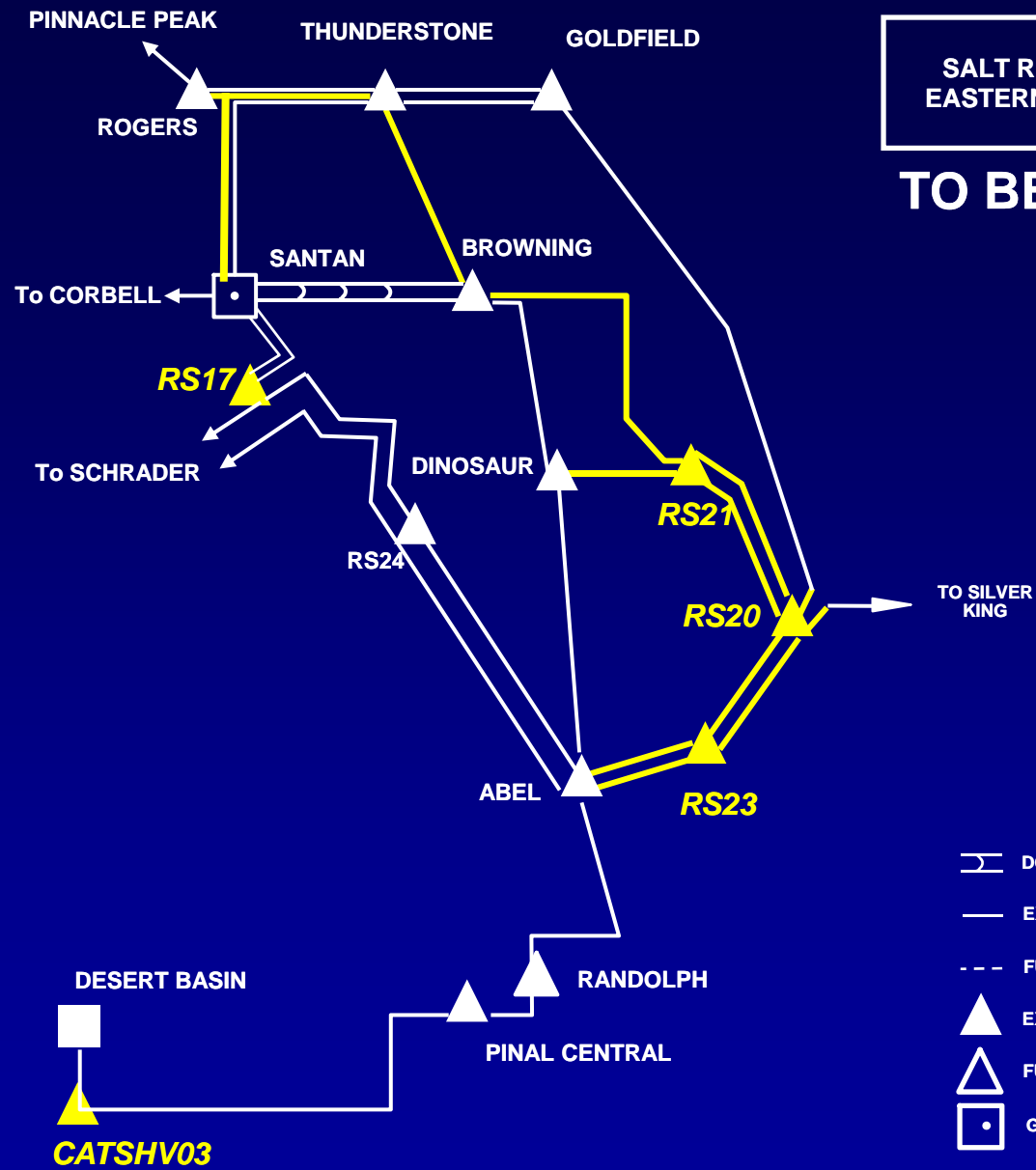
**SALT RIVER PROJECT  
EASTERN 230kV SYSTEM**

**2017**

-  DOUBLE CIRCUIT, PHASE TIED LINE
-  EXISTING 230kV CIRCUIT
-  FUTURE 230kV CIRCUIT
-  EXISTING 230kV SUBSTIT
-  FUTURE 230kV SUBSTATIONS
-  GENERATING STATION









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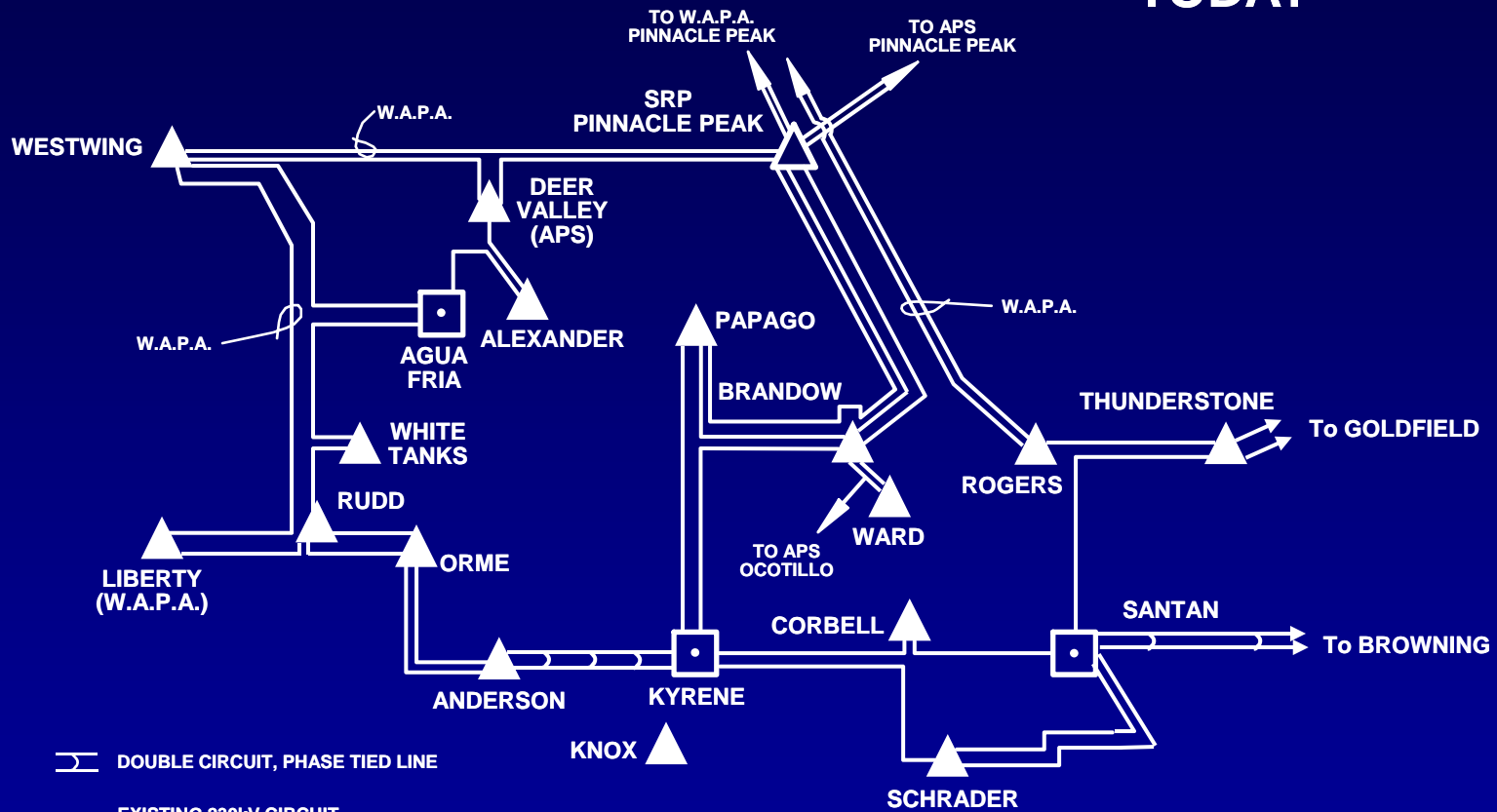
**SALT RIVER PROJECT  
EASTERN 230kV SYSTEM**







**TO BE DETERMINED**

-  DOUBLE CIRCUIT, PHASE TIED LINE
-  EXISTING 230kV CIRCUIT
-  FUTURE 230kV CIRCUIT
-  EXISTING 230kV SUBSTIT
-  FUTURE 230kV SUBSTIT
-  GENERATING STATION

SALT RIVER PROJECT  
WESTERN 230kV SYSTEM

TODAY

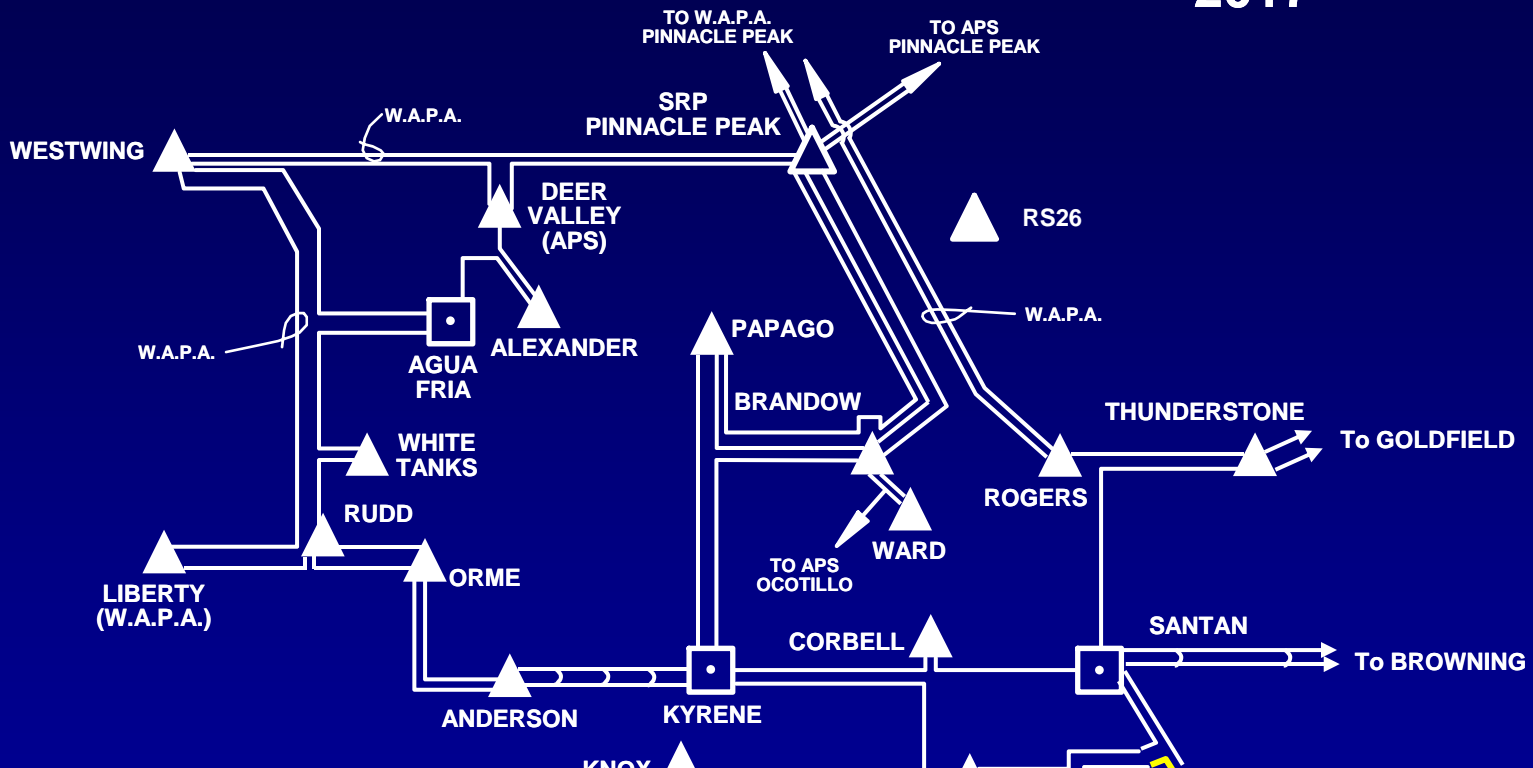








-  DOUBLE CIRCUIT, PHASE TIED LINE
-  EXISTING 230kV CIRCUIT
-  FUTURE 230kV CIRCUIT
-  EXISTING 230kV SUBSTATIONS
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-  GENERATING STATION



SALT RIVER PROJECT  
WESTERN 230kV SYSTEM

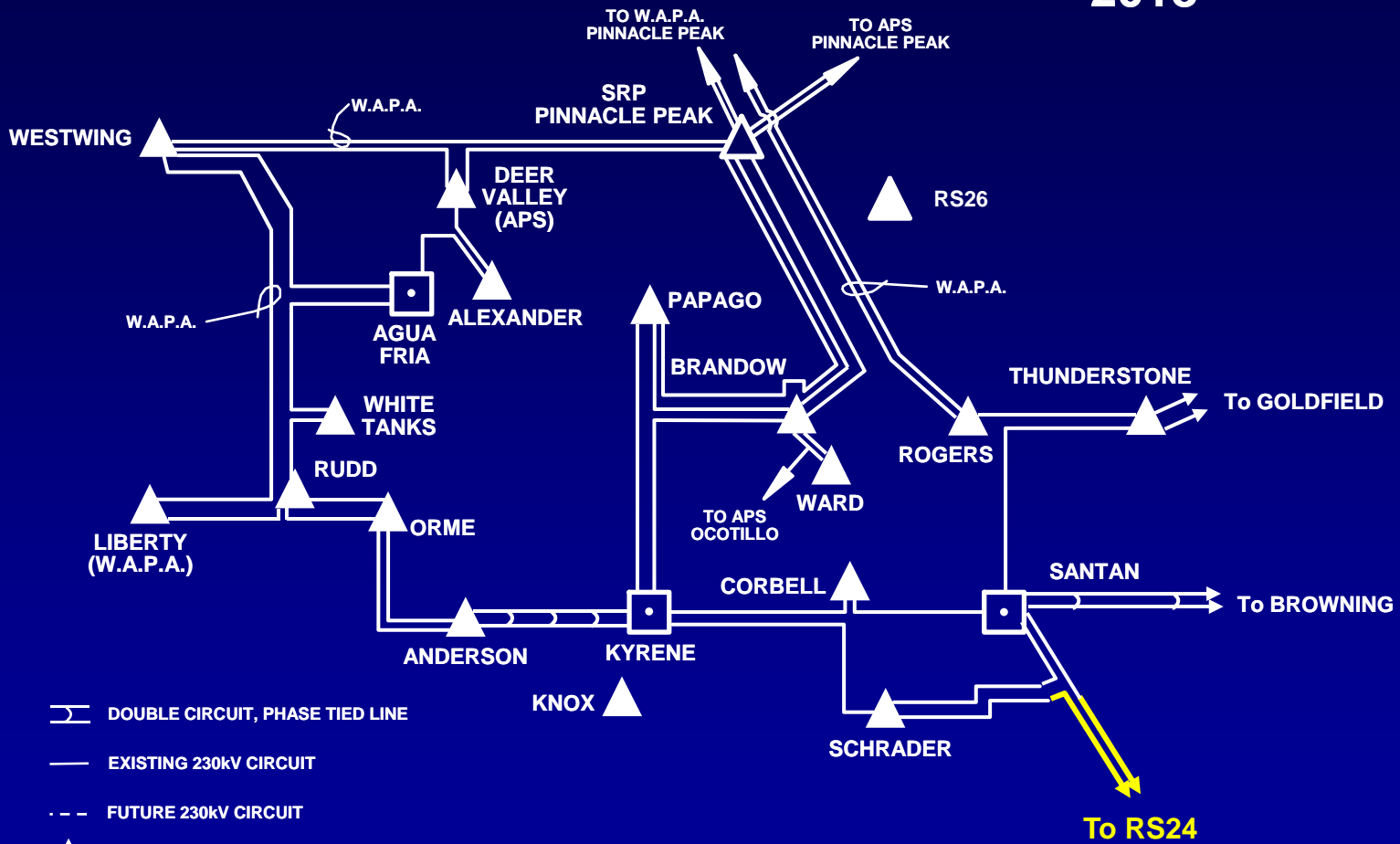
2017









-  DOUBLE CIRCUIT, PHASE TIED LINE
-  EXISTING 230kV CIRCUIT
-  FUTURE 230kV CIRCUIT
-  EXISTING 230kV SUBSTATIONS
-  FUTURE 230kV SUBSTATIONS
-  GENERATING STATION

SALT RIVER PROJECT  
WESTERN 230kV SYSTEM

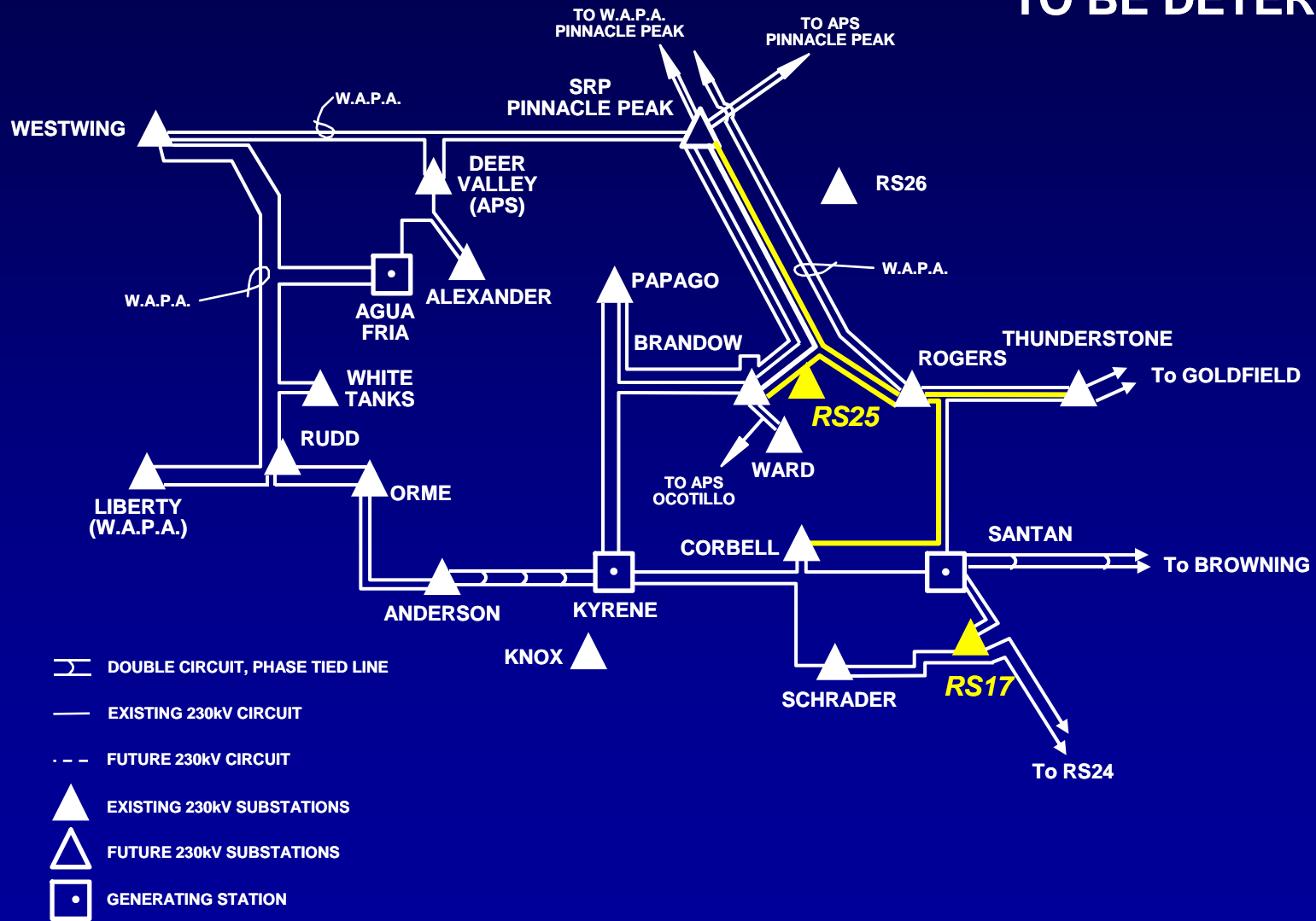
2018

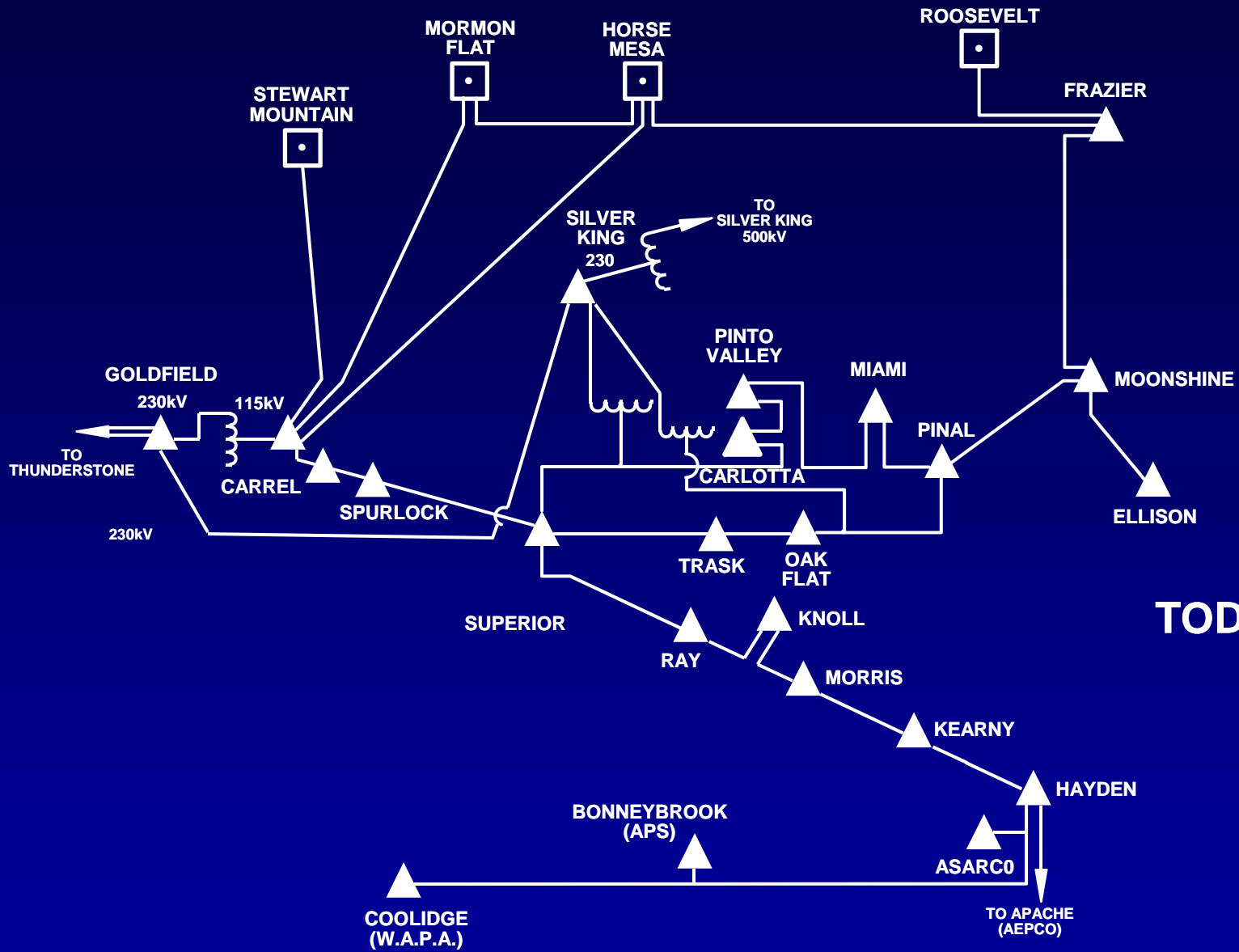


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SALT RIVER PROJECT  
WESTERN 230kV SYSTEM

TO BE DETERMINED

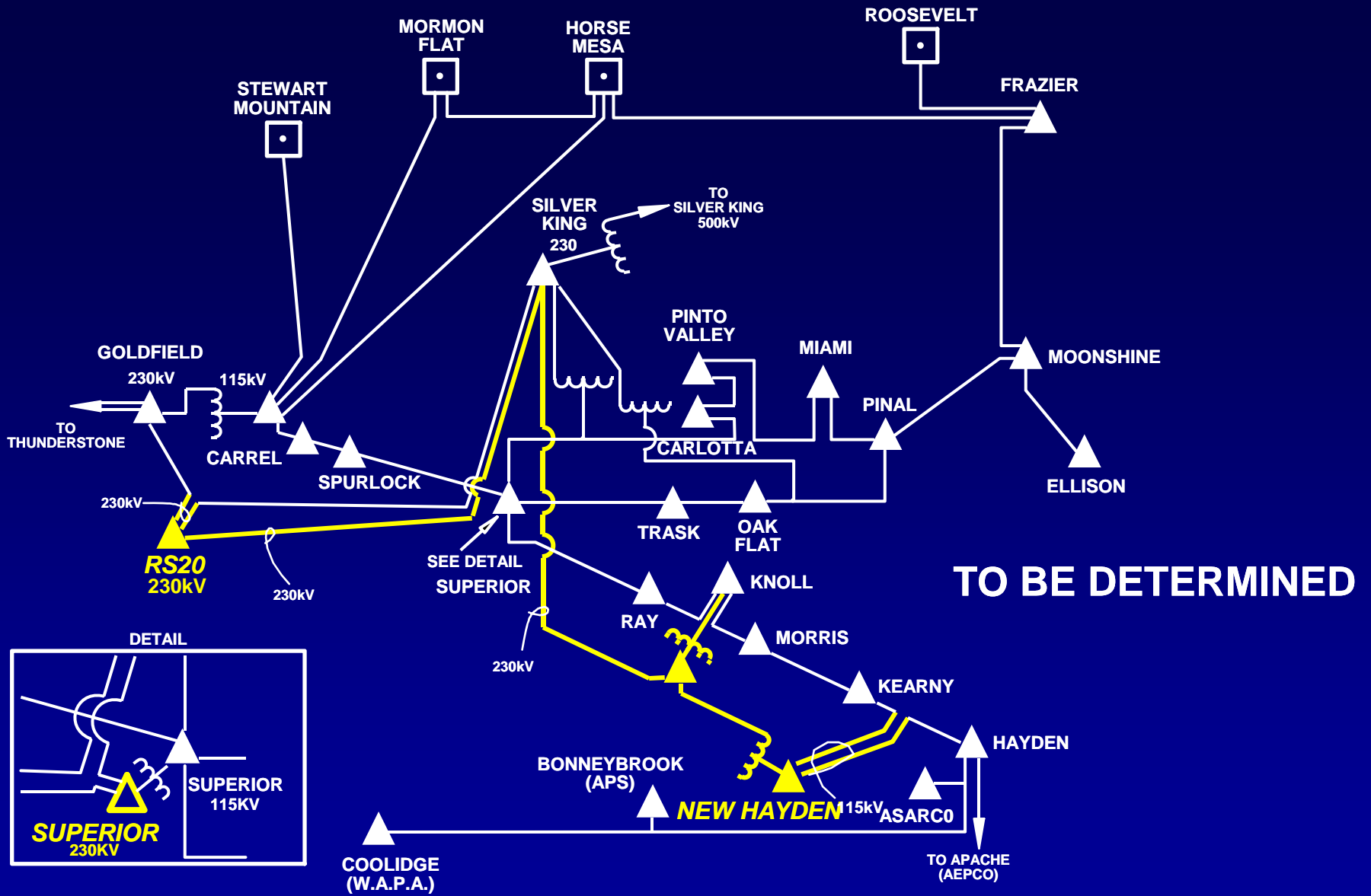




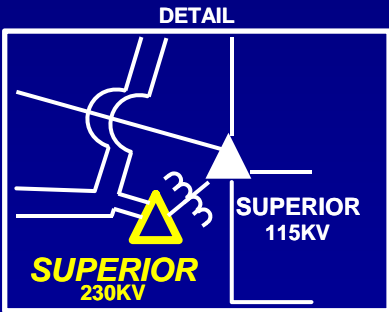
**TODAY**




**SALT RIVER PROJECT  
EASTERN MINING  
AREA SYSTEM**


-  FUTURE SUBSTATION
-  EXISTING SUBSTATION
-  GENERATING STATION
-  FUTURE LINE
-  EXISTING LINE



**TO BE DETERMINED**



-  FUTURE SUBSTATION
-  EXISTING SUBSTATION
-  GENERATING STATION

-  FUTURE LINE
-  EXISTING LINE

**SALT RIVER PROJECT  
EASTERN MINING  
AREA SYSTEM**

# Summary Status

<b>Project</b>	<b>I/S</b>	<b>Status</b>	<b>Study Forum</b>
<b>Pinal West – Pinal Central 500kV</b>	<b>2014</b>	<b>Design / ROW</b>	<b>Yes CATS/CATS HV/WATS/SEV E&amp;O/ WECC SRWG, TSS</b>
<b>Pinal Central – Randolph 500kV</b>	<b>2014</b>	<b>Design / ROW</b>	<b>Yes same as above</b>
<b>Randolph – Abel 500kV</b>	<b>2011/14</b>	<b>Const</b>	<b>Yes same as above</b>
<b>Abel – Browning 500kV</b>	<b>2011/14</b>	<b>Const</b>	<b>Yes same as above</b>
<b>Desert Basin – Pinal South 230kV</b>	<b>2014</b>	<b>Design</b>	<b>Yes CATS HV/WECC SRWG, TSS</b>
<b>Pinal South – Randolph 230kV</b>	<b>2014</b>	<b>Design</b>	<b>Yes CATS HV</b>
<b>Randolph – Abel 230kV</b>	<b>2011</b>	<b>Const</b>	
<b>RS24 230kV Transmission Project</b>	<b>2017</b>	<b>ROW</b>	<b>Yes</b>
<b>RS26 Transmission Project</b>	<b>2014</b>	<b>Pre Siting</b>	<b>Yes</b>

# Summary Status

**Types of studies performed for the various projects:**

**N-0, N-1, N-2 contingency studies**

**Transient and Post Transient voltage analyses**

**Stability analyses**

**Short circuit analyses**

**Reports where these projects may be found:**

**CATS, CATS HV, CATS EHV, SWAT, WestConnect, WATS,  
WECC Annual Study Plan Report**

# SRP Changes from 5<sup>th</sup> BTA to 6<sup>th</sup> BTA

## *Completed Projects*

Hassayampa – Pinal West 500kV

Sugarloaf Loop in of Coronado - Cholla

Carlotta 115kV Station Addition

# SRP Changes from 5<sup>th</sup> BTA to 6<sup>th</sup> BTA

## *500kV Projects*

**2010 Raceway – Pinnacle Peak**

**Now Morgan – Pinnacle Peak**

**2009 Palo Verde – TS5**

**Now Palo Verde – Delany (2012) and Delany –  
Sun Valley (2014)**

**2011 Pinal West – Pinal South**

**Now Pinal West – Pinal Central (2014), Pinal Central –  
Randolph (2014), Randolph – Abel (2011/2014), and  
Abel – Browning (2011/2014)**

**2012 Palo Verde – North Gila 2**

**Now 2014**

**2012 TS5 – TS9**

**Now Sun Valley – Morgan (2016)**

# SRP Changes from 5<sup>th</sup> BTA to 6<sup>th</sup> BTA

## *500kV Projects, con't*

*New Pinal Central – Tortolita (TEP) (2014)*

*New New Mexico – Pinal Central (SunZia) (2013/2014)*

*New Pinal Central – Abel (2020)*

*New Abel – RS20 – Coronado (TBD)*

## *230kV Projects*

*2011 Dinosaur – Southeast Valley – Pinal South – Desert Basin*

*Now Dinosaur – Abel – Randolph (2011), Randolph – Pinal Central – Desert Basin (2014)*

*2012 Southeast Valley – RS24 – Santan/Schrader*

*Now Abel – Schrader (2017), Abel – RS24 – Santan (2018)*