ORIGINAL

30E

BEFORE THE POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE PALO VERDE HUB TO TS-5 500kV TRANSMISSION PROJECT WHICH INCLUDES A 500kV TRANSMISSION LINE AND ASSOCIATED FACILITIES AND INTERCONNECTIONS ORIGINATING FROM EITHR THE PALO VERDE NUCLEAR GENERATING STATION SWITCHYARD, SECTION 34, TOWNSHIP 1 NORTH, RANGE 6 WEST, G&SRB&M, OR A NEW SWITCHYARD AT THE ARLINGTON VALLEY ENERGY FACILITY, SECTION 17, TOWNSHIP 1 SOUTH, RANGE 6 WEST, G&SRB&M, EACH LOCATED SOUTH OF INTERSTATE 10 NEAR WINTERSBURG ROAD IN AN UNINCORPORATED AREA OF MARICOPA COUNTY, ARIZONA, TO THE TS-5 SUBSTATION NEAR THE HASSAYAMPA PUMPING PLANT ALONG THE CENTRAL ARIZONA PROJECT CANAL, IN THE TOWN OF BUCKEYE, MARICOPA COUNTY, ARIZONA, AT SECTION 29, TOWNSHIP 4 NORTH, RANGE 4 WEST, G&SRB&M	CASE NO. 128 DOCKET NO. L-00000D-05-0128 **STAFF'S NOTICE OF FILING LATE FILED EXHIBITS S-1 & S-2**

NOTICE IS HEREBY GIVEN that Staff of the Arizona Corporation Commission is filing a copy of the corrected June 7, 2005 power point presentation of Jerry Smith marked as Exhibit S-1 and a copy of Staff's requested CEC condition, marked as S-2.

RESPECTFULLY SUBMITTED this 9th day of June, 2005.

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Pursuant to R14-3-204
the ORIGINAL and
twenty-five copies were
filed this 15 day of
June, 2005 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

COPY of the foregoing
Mailed this 15 day of June, 2005, to:

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By Deborah S. Amaral

ACC Staff Witness

Name: Jerry D. Smith

Title: Electric Utility Engineer

Employer: Arizona Corporation Commission

Address: Utilities Division
1200 W. Washington
Phoenix, AZ 85007

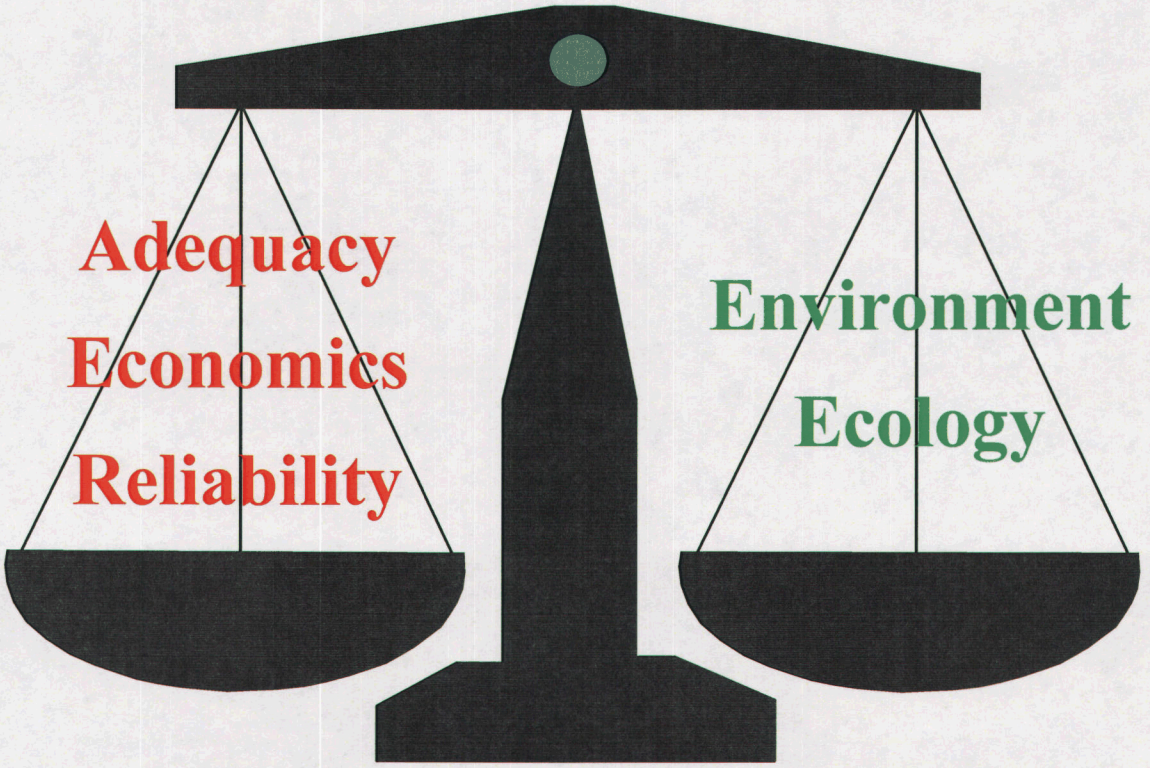
Professional Background

- B.S.E.E. - University of New Mexico
- M.S.E.E. - New Mexico State University
- Registered Arizona P.E. - Electrical
- 27 Yrs. Engineering and Management Experience with the Salt River Project
- Utility Regulatory Experience Since 2/99

Purpose of Testimony

- **Establish Hearing Record for Commission Consideration of its Balancing Test**
- **Contrast Project with Current 10 Year Plan and 2004 Biennial Transmission Assessment**
- **Staff Technical Assessment of Project**
  - Justification of Need
  - Reliability Mitigation Opportunities at Palo Verde Hub

A.R.S. §40-360-07.B
ACC Balance Test



Public Interest

Adequacy and Reliability

Reliability is comprised of two components:

"Adequacy - The ability of the electric systems to supply the aggregate electrical demand and energy requirements of their customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements."

"Security - The ability of the electric systems to withstand sudden disturbances such as electric short circuits or unanticipated loss of system elements."

Additional Staff Proposed Measures of Reliability

- There should be sufficient transmission import capacity to reliably serve all loads in a utility's service area without limiting access to more economical or less polluting remote generation
- New power plants must have sufficient interconnected transmission capacity to reliably deliver its full output without use of remedial action schemes or displacing apriori generation at the same interconnection for single contingency (N-1) outages

BTA vs. 10 Year Plan

- **Biennial Transmission Assessment (BTA):**
  - Occurs on Even Numbered Years
  - Covers a Ten Year Period
  - Utilizes Most Recent Ten Year Plans
- **Third BTA Approved December 16, 2004**
- **Ten Year Transmission Plans Filed Annually with Commission by January 31**
  - Most Recent Plans Filed January 2005
  - Covers 2005 thru 2014

3rd Biennial Transmission Assessment - Key Conclusions

- **Existing and Planned Transmission Facilities Meet Load Serving Requirements of Arizona in a Reliable Manner. (Without the Planned Facilities A Different Conclusion May Have Been Reached)**

- **The Palo Verde to TS5 to Raceway and Palo Verde to Browning Projects Will Significantly Increase the Outlet Capability of the Palo Verde Hub to Arizona.**

- **Existing Transmission from Palo Verde to California is Inadequate to Allow All New Palo Verde Hub Generation Full Access to the California Market Under Weak Arizona Market Conditions.**

Related APS Projects

- **TS5 to Raceway 500 kV Line: 2010**
- **West Valley North 230 kV Line Project (Case # 127)**
- **West Valley South 230 kV Line Project (Case # 122)**
- **Palo Verde to Rudd 500 kV Line (Case # 115)**

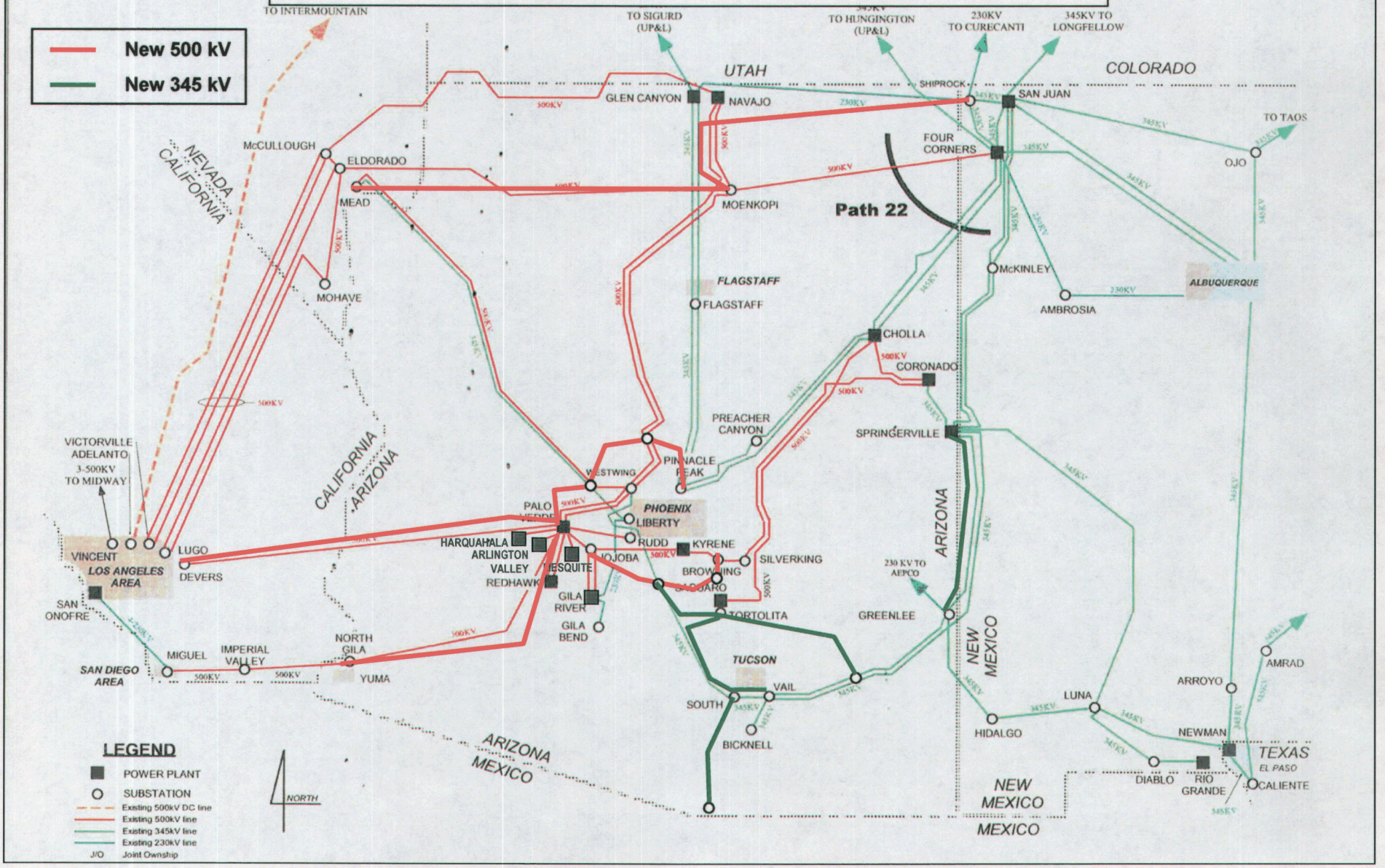
Ten Year Plan Filings
Project Elements In-Service Dates

Per A.R.S. §40-360.02.A Statutory Requirement:

Project Elements	2004 10 Yr Plan	2005 10 Yr Plan
Palo Verde – TS5 500 kV	2007	2007
TS5 – TS1 230 kV:[2] Dbl Ckt	2007	2007/TBD
TS1 - TS2 230 kV[2]	2008	2008/TBD
TS2 – TS3 230 kV[1]	2008	2008/TBD
TS3 – TS4 230 kV:[1] Dbl Ckt	2006	2006
TS5 – Raceway 500 kV	2010	2010

[1] Case No. 122 [2] Case No. 127

Existing and Planned Arizona EHV Transmission



Benefits of Proposed Project

- New Line Capacity Meeting Local Consumer Needs
- Helps Mitigate Existing Metropolitan Phoenix Reliability Must Run (RMR) Constraints
- Improves Palo Verde Hub Merchant Power Plants' Access to Local Retail Market
- Provides an Opportunity to Mitigate Risks Associated with Extreme Outages Affecting Palo Verde Hub

Consolidated Facilities and Common Corridors (1 of 2)

- **Staff Supports Consolidation of Facilities For Environmental and Aesthetic Purposes when System Reliability is Not Unduly Compromised (Ref Case No. 115: Rudd to TS4 230 kV)**
- **Staff Also Supports Use of Common Corridors when System Reliability is Not Unduly Compromised (Ref Case No. 120: Westwing to Raceway)**
- **Consolidation of Proposed Facilities or Use of Common Corridors w/o Consideration of Technical Consequences Is Inappropriate Planning**

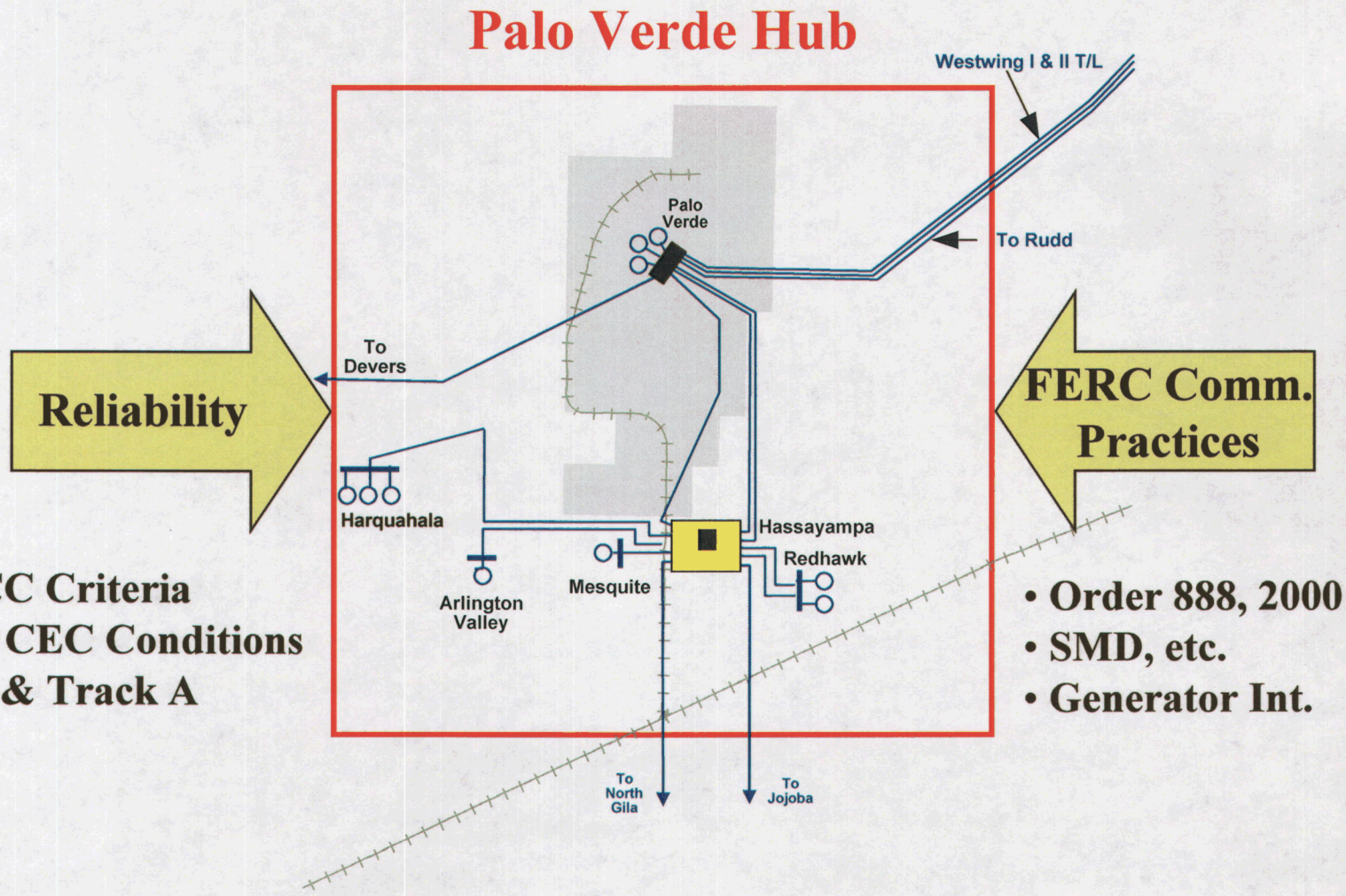
Consolidated Facilities and Common Corridors (2 of 2)

- **Reliability Impacts of Consolidating Facilities or Using A Common Utility Corridor are Generally Lessened When:**
  - Lines Are of a Different Voltage Class (ie. 230 kV vs. 500 kV) - ref. Case No. 115
  - Lines Do Not Share a Common Terminus
  - Lines Connect to Segregated Service Areas or Geographical Areas (ie. TEP's Tucson Service Area and SRP's Phoenix Service Area)

Common Corridor & Consolidation of Facilities

- Consolidating the Existing Hassayampa Pumping Station 230 kV Line and the PV-TS5 500 kV Line Poses No Significant System Reliability Risk.
- Outage of Three 500 kV Lines in a Common Corridor Between Harquahala Junction and the Palo Verde Hub Is Not The Most Critical Extreme Contingency at The Palo Verde Hub.
- Harquahala Junction Switchyard and Arlington Switchyard Each Provides A Means of Mitigating Outage Effects Of Three 500 kV Lines in a Common Corridor.

A Seams Issue Extraordinaire



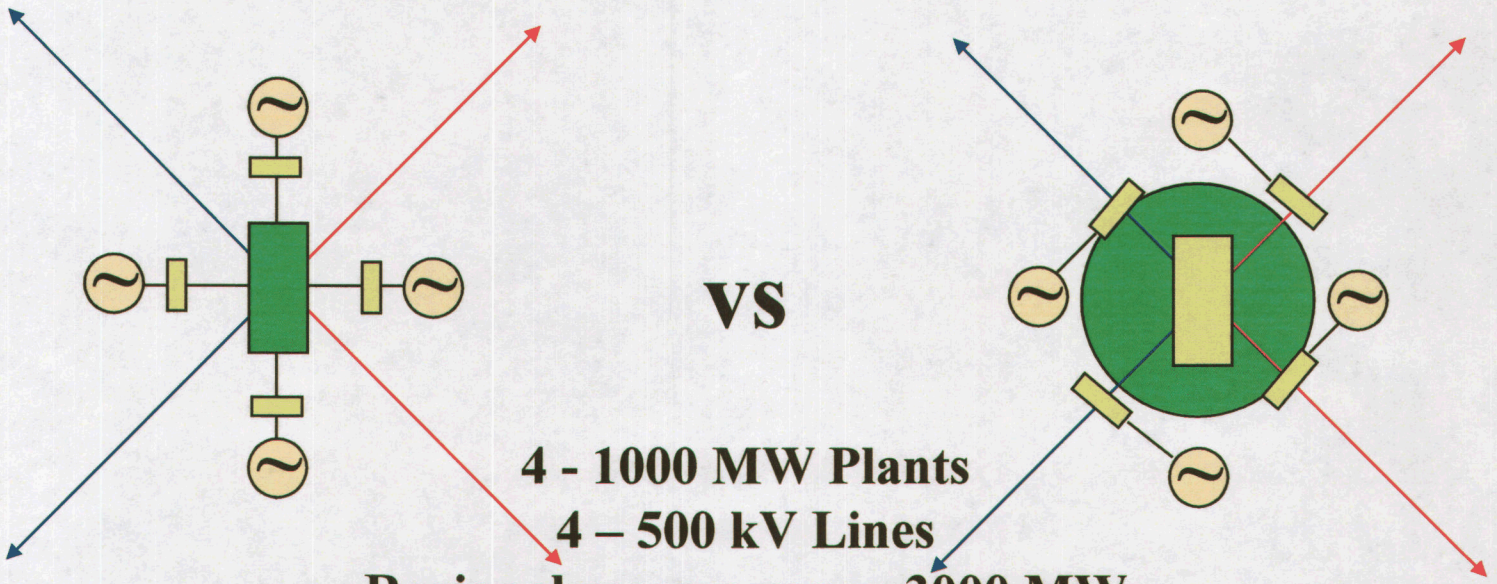
- WECC Criteria
- ACC CEC Conditions
- BTA & Track A

- Order 888, 2000
- SMD, etc.
- Generator Int.

PV Hub Risk Assessment Recommendations

- **Future generation or transmission projects should give consideration to risk mitigation for extreme events.**
- **For overall diversity, performance and risk mitigation: should consider terminating future lines at generating stations interconnected at the hub rather than at the Palo Verde or Hassayampa Switchyards.**
- **Future generators desiring to interconnect at the Palo Verde hub should also be interconnected to at least one other location in the transmission network.**

Hub Concepts



3rd Biennial Transmission Assessment - Key Requirements

- **Utilities and Staff to Develop and Implement More Stringent RMR Study Criteria for the 2006 BTA.**
- **Study Extreme Contingency Outages of Arizona's Major Transmission Stations and Generation Hubs to Identify Associated Risks and Consequences if Mitigating Infrastructure Improvements Not Planned.**
- **Compliance with WECC and NERC (N-1-1) Single Contingency Criteria Overlapped with Bulk Power System Facilities Maintenance for Year 1 of the BTA.**

PV Hub Interconnection ACC Meeting 5/31/05

- **Attendees – APS, SRP, SCE, LADWP, Duke Energy Services, LS Power - Harquahala Power Plant**
- **Reliability / Commercial Implications of New PV Hub Transmission Line Interconnections Were Discussed**
- **Agreed Upon Action Plan:**
  - APS & Duke Energy Services Will Seek Closure on An Interconnection Agreement at Arlington Valley by December 31, 2005.
  - SCE Will Continue to Pursue Interconnection at Harquahala via Its PV to Devers 2 Project.
  - All PV Hub Interconnectors Will Explore Merits of Commercial Hub Boundry Reformation via Palo Verde E&O Committee.
  - SWAT & STEP Will Serve as Technical Study Forum

Staff Assessment (1 of 3)

- Staff Believes the Proposed Project is Needed and Applicant Has Met The Need Justification Burden.
- For Reliability Reasons Staff Would Object to Placing the Proposed 500 kV Line in The Existing Palo Verde to Westwing Corridor Given Other Routes Are Possible.
- Staff Supports the Proposed Preferred Route.
- Corridors in Excess of 1000 Feet Seem to Be A Desired Feature Rather Than Required For Technical Feasibility.
- This Line Provides an Additional 500 kV Interconnection to the Local Phoenix 230 kV Grid at TS5. (Helps Mitigate Effects of 2004 Westwing Events)

Staff Assessment (2 of 3)

- **APS has Provided Staff an Updated PV Hub Extreme Contingency Analysis of Its Alternative 500 kV Line Interconnections in 2007/2008.**
- **The Long Term Reliability Benefits of The Proposed Alternative PV Hub Interconnections Will Be Updated and Filed with APS' Ten Year Plan Filing in January 2006.**

Staff Assessment (3 of 3)

- **Staff Prefers the Arlington Valley Switchyard Termination Option at The PV Hub.**
  - Mitigates Extreme Contingency Outage Exposure for Arlington Valley Plant.
  - Establishes an Arlington Valley Switchyard and 2nd Line Required for Phase 2 Expansion of The Plant.
- **The Harquahala Junction Switchyard is An Acceptable Interim Termination if Agreement is Not Achieved with Duke Energy Service by 12/31/05.**
- **APS Should File A Report with ACC Staff Documenting All Reasons For Failure to Reach an Agreement to Interconnect if Either Location Is Not Achieved by 12/31/05.**
- **The Two Above Termination Options Would Allow Additional Time to Resolve Global PV Hub Commercial Issues At FERC.**

Exhibit S-1

Exhibit S-2

Staff Proposed Conditions
6/7/2005

Within 10 days of ACC approval of this CEC, Applicant APS and Participant SRP will formally request all parties interconnected at the Palo Verde Hub to negotiate and prepare a new filing for submittal to FERC. That filing is to facilitate resolution of HUB reliability concerns via future transmission lines interconnecting at the various PV Hub interconnected power plants while preserving the transmission tariff free delivery of capacity and energy from those power plants to the PV Hub. APS and SRP will also request the Palo Verde E&O Committee to facilitate this request on an expedited schedule basis. APS will file with the ACC Utilities Division its request, the individual interconnector's response to the requests and any perceived barriers to development of a FERC filing, and any agreed upon schedule for action.