

ORIGINAL



0000080543

53

**BEFORE THE ARIZONA POWER
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 §40-360, et seq., FOR CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY
AUTHORIZING THE SUNDANCE TO PINAL
SOUTH 230Kv TRANSMISSION PROJECT,
WHICH ORIGINATED AT THE SUNDANCE
GENERATING STATION, SECTION 2,
TOWNSHIP 6 SOUTH, RANGE 7 EAST, AND
TERMINATES AT THE FUTURE PINAL
SOUTH SUBSTATION, SECTION 30,
TOWNSHIP 6 SOUTH, RANGE 8 EAST, IN
PINAL COUNTY, ARIZONA.

DOCKET NO. L-00000D-07-0682-00136

CASE NO. 136

NOTICE OF FILING

Staff of the Arizona Corporation Commission hereby files Staff Presentation of Staff Witness
Prem Bahl of the Electric Utility Engineering Division in the above-reference matter.

RESPECTFULLY SUBMITTED this 15th day of January, 2008.

Arizona Corporation Commission

DOCKETED

JAN 15 2008

DOCKETED BY

Charles H. Hains
Attorney, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and twenty-eight (25)
copies of the foregoing filed this
15th day of January, 2008 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85008

RECEIVED
2008 JAN 15 P 2:19
AZ CORP COMMISSION
DOCKET CONTROL

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

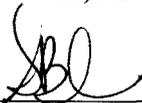
Copies of the foregoing
mailed this 15th day of
January, 2008 to:

Thomas H. Campbell
Albert H. Acken
Lewis & Roca, LLP
Two Renaissance Square
40 North Central Avenue, Suite 1900
Phoenix, Arizona 85004-4429
Attorney for Salt River Project

Lawrence V. Robertson, Jr.
P.O. Box 1448
Tubac, Arizona 85646
Attorney for Pinal County

Chris M. Roll
Chief Civil Deputy
Pinal County Attorney
31 North Pinal St., Bldg. D
P.O. Box 887
Florence, Arizona 85232-0887

Jennifer Boucek, Chairman
Arizona Power Plant and
Transmission Line Siting Committee
Office of the Attorney General
1275 West Washington Street
Phoenix, Arizona 85007





**Arizona
Corporation
Commission**

Docket No. L-00000D-07-0682-00136

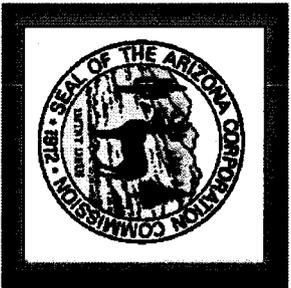
Sundance to Pinal South

230 kV Project

Presentation of Staff Witness

Prem Bahl

January 22 & 23, 2008



ACC Staff Witness

Name: Prem Bahl

Title: Electric Utilities Engineer

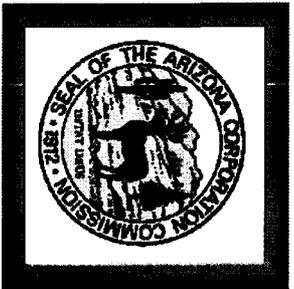
Employer: Arizona Corporation Commission

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



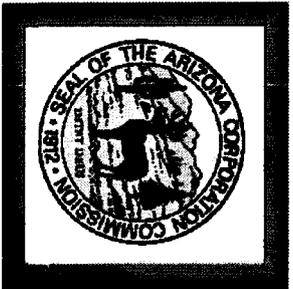
Professional Background

- **M.S.E.E. – South Dakota State University (1972)**
- **Registered P.E. (Arizona) – Electrical (1978)**
- **15 Years as Staff Engineer with the Arizona Corporation Commission; two years as Chief Engineer with RUCO; twenty years with Electric Utilities in U.S. and India; and five years with Consulting Engineering firms ~ Commonwealth Associates in Michigan; R.W. Beck Associates in Phoenix, Arizona; and Ralph M. Parsons in Pasadena, California**



Presentation Review

- Purpose of Testimony
- ACC Balance Test
- Adequacy and Reliability
- Project Description
- Map showing the Project
- History of the Project
- Need and Benefits of the Project
- Staff's Assessment and Conclusions



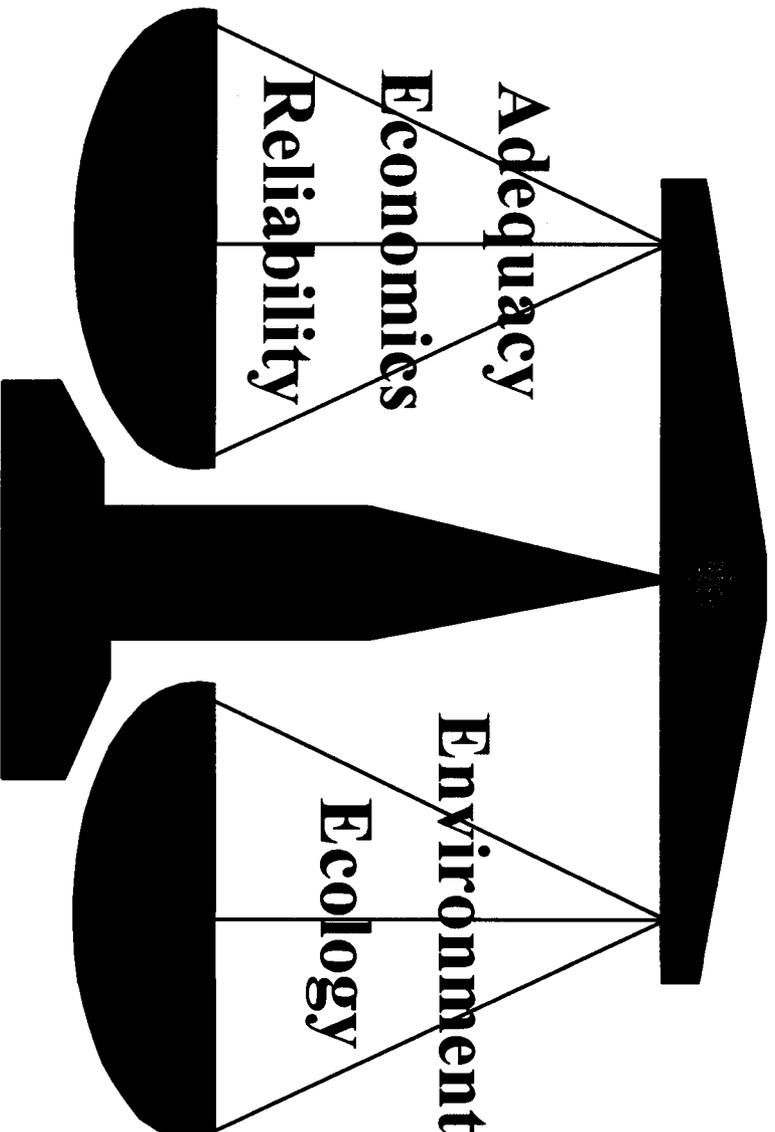
Purpose of Testimony

- **Establish Hearing Record for Commission Consideration of its Balancing Test**
- **Staff's Technical Assessment of Project**
 - Justification of Need
 - Benefits of the Project
 - System Reliability based on the System Impact Studies results
 - Staff's Assessment and Conclusions



ACC Balance Test

A.R.S. §40-360-07.B



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.”

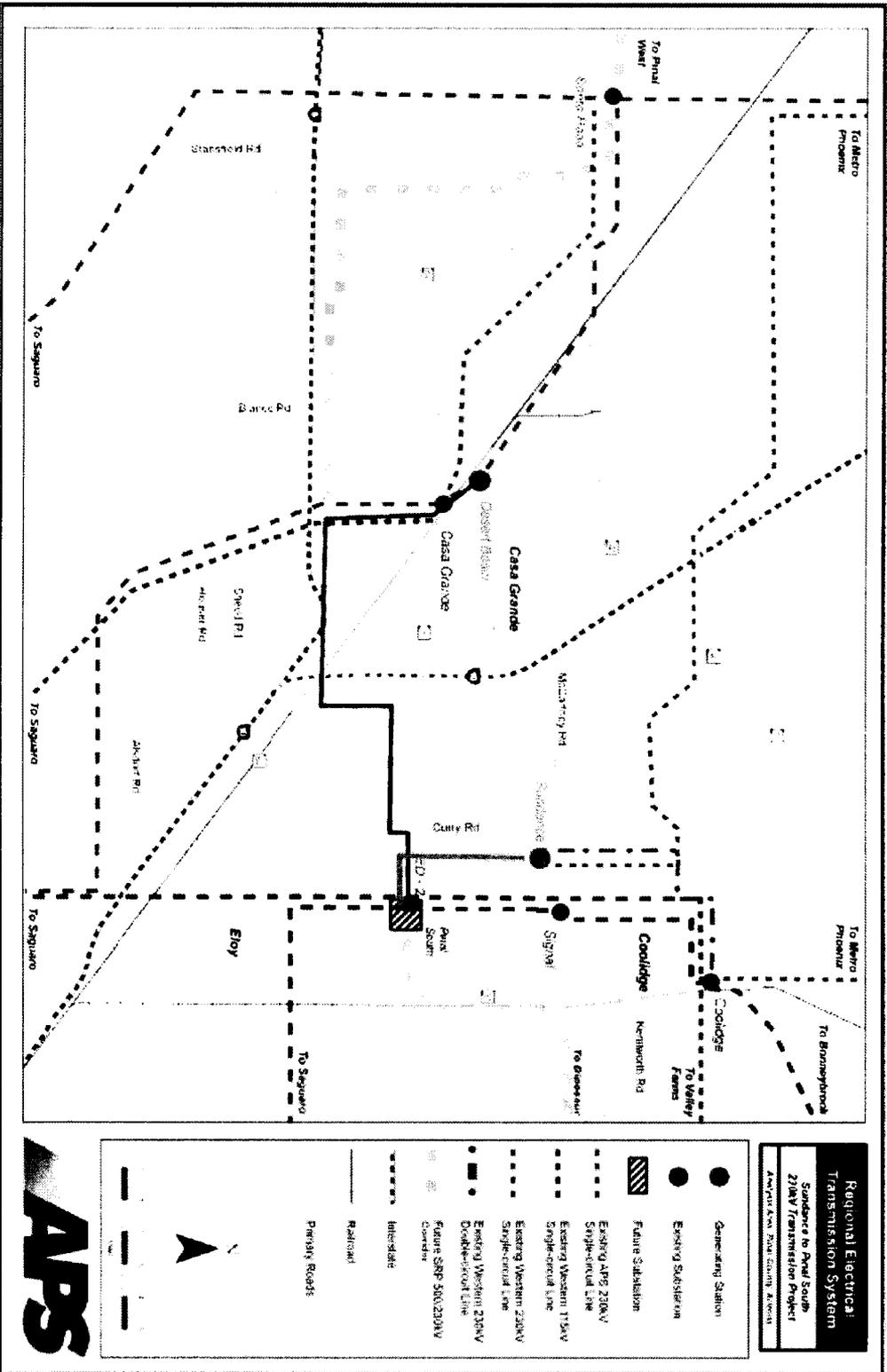


Project Description

- On December 11, 2007, Arizona Public Service Company (“APS” or “Applicant”) filed an Application with the Commission for a Certificate of Environmental Compatibility (“CEC”) for the proposed construction of a seven-mile double circuit 230 kV line from Sundance Generating Station (“Sundance”) to Pinal South substation (“Project” or “Line”)
- Electrical District ED2 is a potential participant in the Project with the possibility of underbuilding a 69 kV line between Sundance and ED2 substations.



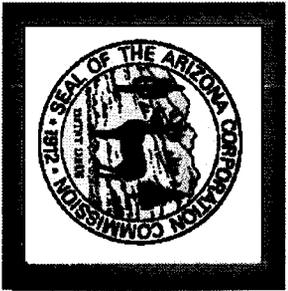
Project Description





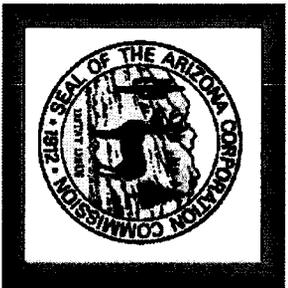
History of the Project

- The Project was included in the Central Arizona Transmission high voltage (“CATS-HV”) 2006 Saturation Studies.
- The Project was included in APS’ 10-year Plan filings (per A.R.S. § 40-360-02) in 2007.



Need and Benefits of the Project

- **The Project provides an opportunity for future additional peaking generation at the Sundance Plant**
 - Helps in meeting growing peak load requirements in the Pinal County and in other parts of APS' service territory in the state, being interconnected at the Pinal South substation
 - Provides an opportunity to ED2 to participate in the Project and for underbuild of 69 kV line, which would reduce the environmental impact in not having to acquire the right-of-way for the 69 kV line



Need and Benefits of the Project

- **Increases local and regional system reliability**
- **Being in a separate corridor from the Western Area Power Administration's ("Western") corridor containing two 115 kV lines, the Project does not create a negative system impact in case of multiple line outages**
- **Project in a separate corridor has a higher level of system reliability**



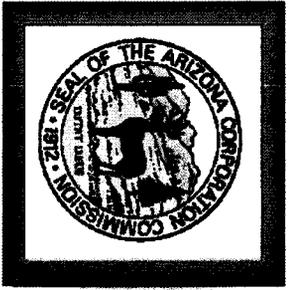
Staff's Assessment and Conclusions

- **Staff believes the Sundance Project is needed in view of the rapidly growing load in the Pinal County, and the Applicant has met the need justification burden**
- **The Applicant has performed the necessary load flow studies to determine the impact of the Project on the interconnected transmission grid**
- **Staff has reviewed the system studies performed by APS. The results of system studies demonstrate that even with additional generation of 500 MW at Sundance to stress the system representing summer peak load conditions beyond 2011, the Line outage does not load any transmission element beyond its emergency rating if located in a separate corridor.**



Staff's Assessment and Conclusions (contd.)

- The results of the system studies also show that if the Project is in the same corridor as Western's corridor with two existing 115 kV lines, the corridor outage taking out all four lines results in the Coolidge-Spookhill 230 kV line carrying 111% of its emergency rating
- It is Staff's conclusion that the Project as filed does not have a negative impact on system reliability in an N-1 or N-2 contingency
- Staff proposes the following conditions in this proceeding:
 - Applicant will follow the latest WECC/NERC Planning standards as approved by FERC, and NESC construction standards
 - Applicant will coordinate with SRP regarding the separation between the Sundance Line and the Pinal West to SEV/Browning 500/230 kV Project. To avoid the impact of a collapse of both the lines into each other, Applicant shall maintain a separation between the lines equal in distance to the height of the tallest tower in each individual span.
- Staff reserves the right to ask the Applicant additional questions or propose appropriate conditions for the grant of CEC during Line Siting hearings



Questions ?

