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April 22, 2008

Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007
Attn: Legal Division and Docket Control

RE: Docket No. E-00000M-08-0170; 90-day Plan Filing

Ladies and Gentlemen:

On March 20, 2008, Coolidge Power Corporation (Applicant) filed with the Arizona Corporation Commission (Commission) the "Plan" for the Coolidge Generating Station, pursuant to A.R.S. 40-360.02. Attached as Exhibit A to the Plan was an "Interconnection System Impact Study" (SIS) required to be filed as part of the Plan.

When the Plan was filed on March 20, 2008, the Commission did not have a specific docket for receiving such filings. Subsequently, the Commission legal division notified us that it has opened a generic docket, as captioned above, for such purpose.

Additionally, when the Plan was filed the SIS was labeled as "confidential information", resulting in concerns in the Commission legal division regarding the appropriate docketing and public distribution of its content.

Since making the filing, it has been determined by the Applicant that the SIS does not need to be kept confidential. Therefore, an additional 25 copies of the Plan, including the SIS *without* any confidentiality designation, are being delivered under cover of this letter, for docketing and further distribution as the Commission deems useful. Persons to whom the earlier filed copies of the Plan were distributed are authorized to treat the SIS as non-confidential, and may mark out the confidential label if they wish.

Please feel free to contact the undersigned if there are any questions in this regard, or with respect to the Plan itself. Thank you for your continued assistance.

Very truly yours,

Jay I. Moyes

JIM/lkk
Enclosures
cc: Janice Alward
Peter Lund
John Cashin

PLAN
for the
Coolidge Generating Station

Submitted by Coolidge Power Corporation
March 20 , 2008

Pursuant to A.R.S. 40-360.02, Coolidge Power Corporation ("Applicant") hereby submits the plan ("Plan") for the Coolidge Generating Station ("CGS" or "Project").

Applicant is a wholly-owned affiliate of TransCanada Pipeline USA, Ltd. Applicant proposes to construct a nominal 575 MW peaking electric generating facility comprised of twelve individual simple-cycle gas turbine generators capable of producing approximately 48 MW each. The Project will be located within the annexed corporate limits of the City of Coolidge, in Pinal County, Arizona.

A.R.S. 40-360.02(B) requires a party contemplating construction of an electric generating plant to file a plan with the Commission at least 90 days prior to filing an application for a Certificate of Environmental Compatibility for such plant. Applicant intends to file such an application during the summer of 2008 and, therefore, files this Plan at least 90 days in advance of filing such application.

Project Overview

The planned CGS will be comprised of twelve individual General Electric LM6000 PC SPRINT NxGen simple-cycle natural gas combustion turbine generators ("Units") with inlet air chillers. The Project will be designed to produce aproximately 575 MW of net electrical output under optimal ambient temperature and humidity conditions. The Units are capable of rapid start-up, allowing the Project to meet standby capacity reserve requirements and to respond within ten minutes to meet fluctuations in peak electric demand. Each Unit will be capable of operating independent of the other Units, allowing the Project to efficiently produce an aggregate generating output ranging from approximately 25 MW to approximately 575 MW as needed to accommodate peak load following.

The Project will be operated pursuant to an air quality permit issued by Pinal County. Emissions from the Units will be controlled by a combination of water injection and selective catalytic reduction to reduce nitrogen oxides emissions, and an oxidation catalyst to reduce carbon monoxide and volatile organic compound emissions.

The CGS will interconnect at the 230kV voltage level with the new Pinal West to Southeast Valley/Browing "Southeast Valley" 500/230 kV transmission line to be constructed by Salt River Project ("SRP") between the Pinal Central (formerly Pinal South) substation and the Dinosaur substation (the "PC-DIN Circuit"), through a new switchyard to be constructed at the CGS site. The Project will include six GSU

transformers each mated to two Units, from which will emanate six short 230kV transmission ties connecting to the new switchyard; and those GSU-to-switchyard transmission ties are covered by this Plan. The interconnection of the switchyard to the PC-DIN Circuit is not anticipated to require more than two new transmission structures. Accordingly, no CEC will be required for these interconnection facilities. Instead, the switchyard and interconnection facilities will be described in the CEC application for the CGS for informational purposes only. SRP will build, own and maintain the switchyard and interconnection structures.

SRP will purchase 100% of the electricity generated by the Project pursuant to a power purchase agreement between SRP and Applicant. SRP will be responsible for purchase and delivery of the natural gas fuel supply to the Project, and for transmission of the electricity generated by the Project to SRP's service territory loads primarily in Pinal and Maricopa Counties. TransCanada will maintain and operate the CGS; however, SRP will have exclusive control of the dispatch of the output of the CGS.

Specific Plan Information

In compliance with A.R.S. 40-360.02(C), the specific information required to be provided in the Plan for the CGS, to the extent that it is known, is set forth below:

1. **The location of any plant proposed to be constructed.**

   The Project site is located in Pinal County Arizona, on the east side of Highway 87, approximately three miles south of the center of the City of Coolidge, immediately south of the existing inactive oil refinery site.

   The Project will be located on an approximately one hundred acre parcel located within that portion of Section 10, Township 6 South, Range 8 East, lying East of and adjacent to the Southern Pacific Railroad right-of-way. The GSU-to-switchyard transmission ties also will be located wholly within such parcel, their exact location to be determined by the final placement of the GSUs and the switchyard within the parcel.

2. **The purpose to be served by each proposed plant.**

   The Project will supply peaking power to Salt River Project.

3. **The estimated date by which the plant will be in operation.**

   It is estimated that the Project will be energized and commissioned by October 1, 2010, and will begin commercial operation on May 1, 2011.

4. **The average and maximum power output measured in megawatts of each plant to be installed.**

The Project will be designed to produce between 25 and 575 MW of net nominal electrical output depending upon the ambient temperature and humidity conditions and the amount of peaking power that SRP requires from the dispatch of the individual generating units, which can be operated in any combination between one and twelve units.

5. **The expected capacity factor for each proposed plant.**

The number of operating hours and startups for any individual simple cycle unit will vary with the needs of SRP. It is anticipated that a typical operating profile for the CGS will be approximately 400-600 operating hours per Unit per year, even though the Project will be designed and maintained so as to be available for reliable, full capacity production approximately 98% of the summer hours (June – September) and 96% of the non-summer hours, up to the limits of the facility's environmental permits. The actual capacity factor of the Units will be determined by the economic dispatch of each unit as determined by the needs of SRP, the exclusive recipient of all generation by any and all Units.

6. **The type of fuel to be used for each proposed plant.**

The CGS will be fueled solely by natural gas.

7. **The plans for any new facilities shall include a power flow and stability analysis report showing the effect on the current Arizona electric transmission system. Transmission owners shall provide the technical reports, analysis or basis for projects that are included for serving customer load growth in their service territories.**

Attached as Exhibit A to this Plan is the System Impact Study conducted by SRP showing the effect of the CGS on the current Arizona electric transmission system.

Interconnection System Impact Study

for the

TransCanada Coolidge Generating Station

- FINAL REPORT -

Prepared by:

Salt River Project

For

TransCanada Pipeline USA Ltd.

Prepared by Jose Silva & Jeff Loehr, SRP Transmission System Planning

December 13, 2007

Table of Contents

I. Executive Summary

This Interconnection System Impact Study ("ISIS") was done in response to the TransCanada Pipeline USA, Ltd ("TransCanada") request to provide interconnection service for a proposed new generation facility to be called TransCanada Coolidge Generating Station. The requested in-service date for the interconnection is September 2010, requested initial synchronization date is October 2010, and the estimated commercial operation date for the generation facility is May 2011. This new generation facility will interconnect with a new proposed Pinal South to Dinosaur 230kV transmission line. The study goals were to determine the impact on surrounding transmission and generation and identify the 230kV substation configuration that would preserve the reliability of the SRP transmission system. A 2011 Southwest Area Transmission (SWAT) case was used as the starting point for power flow and transient stability studies. The 2011 SWAT case is a detail case built from the Western Electricity Coordinating Council (WECC) 2011 heavy summer bulk case. As a starting point, the latest 2011 SRP planning model was used for short circuit studies.

The conclusions of this study are that the TransCanada Coolidge Generating Station interconnection:

1. Requires an upgrade on the SRP 69kV transmission system.
2. Does not produce transient stability violations.
3. Does not increase fault current levels above acceptable limits.
4. Has a negligible impact on the short circuit duty at 500kV busses in the area.

The construction cost to build facilities needed to provide interconnection service is estimated to be either $6,750,000 or $8,850,000 (depending on substation configuration) and is estimated to take a minimum of 12 months to build. Additionally, if requested, it will cost an estimated $75,000 to implement a RAS for maximum station output during the time period of October 2010 through May 2011.

II. Introduction

An interconnection request application was submitted by TransCanada on May 17, 2007. An Interconnection System Impact Study Agreement was entered into by SRP and TransCanada on July 26, 2007 and provides the requirements for the Interconnection System Impact Study. The interconnection request was for a proposed new generation facility to be called the TransCanada Peaking Facility with a Point of Interconnection on the high-side of the generator step-up transformers in the new substation (Randolph) on the generator plant site. (The name has since been changed by TransCanada to the Coolidge Generating Station.) The generation facility consists of the installation of twelve GE LM6000 plants, rated at 60.5MVA each. The plants will be paired (6 pairs) and each pair connected to a single 230/13.8kV GSU transformer. For the purpose of the study, generic transformers based upon a similar generation facility were modeled. The new generation facility is to be located south of the former Valero

Refinery site (Gila & Salt River Meridian, Township 6 south, Range 8 East, Section 10 in Pinal County, Arizona). This location is east of the proposed new Pinal South to Dinosaur 230kV transmission circuit (ATTACHMENT 1). A proposed new 230kV substation will provide loop service for interconnection of the TransCanada Coolidge Generating Station. The new substation will be approximately 6.6 miles from the 230kV Pinal South substation. For the purpose of this study it was assumed that the name of this new 230kV substation is "Randolph" due to the proximity of the community of that name. It was assumed that the new station will be located within one span of the existing transmission line.

As outlined in the interconnection study plan, SRP and TransCanada agreed that the ISIS analyses would include power flow, transient stability, and short circuit studies (ATTACHMENT 2). As stated in the study plan, the power flow and transient stability studies would model forecasted 2011 summer peak loads. Future generation expansion of the TransCanada Coolidge Generating Station would not be included in this study. Sensitivity studies with known planned transmission facilities in the area would be done. The studies would monitor the impact on SRP and neighboring utility transmission facilities. All generator model parameters were provided by TransCanada Pipeline USA, Ltd. The maximum output of each generator unit, based on the generator model parameters provided by TransCanada, was assumed to be approximately 46.8MW for a total net plant output of 562MW winter and 495MW summer.

III. Study Methodology

The 2011 SWAT base case used in the study is the "11hs1b_area14detail_8c.sav" base case that was finalized August 23, 2007. The SWAT base case is an area 14 detail base case of the 2011 WECC heavy summer base case "2011hs1b.sav". The detail base case used in the ISIS also includes the SRP 69kV transmission system. The detail base case allowed for monitoring of lower voltage systems in the area. The study included using pre-and post- new generation facility base cases to measure the impact on the surrounding transmission system. Both the pre-and post- base cases included the proposed new 230kV Pinal South to Dinosaur transmission circuit. The pre-base case served as a benchmark for noting pre-existing problems. Sensitivity studies were done to monitor the effects of the TransCanada interconnection on other planned transmission additions which included the proposed APS Pinal South to Sundance 230kV line and the proposed TEP Pinal South to Tortolita 500kV line.

For the purpose of this ISIS and to simplify the 2011 WECC Heavy Summer base case dynamic file conversion to a detail base case, the Transient Stability studies used a modified WECC "2011hs1b.sav" heavy summer base case and dynamic file. Zones 892, 811, and portions of 813 were extracted from the 2011 SWAT detail base case and inserted into the 2011 WECC heavy summer base case. Sensitivity studies were also done to determine the sensitivity of planned transmission circuits by other utilities.

IV. Study Assumptions

See ATTACHMENT 2 for the complete Interconnection System Impact Study Plan. The following additional assumptions were made:

a. The 230kV Pinal South to Dinosaur circuit will be in-service prior to the commercial operation of the TransCanada generators. The planned in-service date of this circuit is May 1, 2011.
b. Loop service will be provided to the high side of the generator step-up transformers of the TransCanada Coolidge Generating Station at Randolph from the proposed 230kV Pinal South to Dinosaur line at the proposed site (Gila & Salt River Meridian, Township 6 south, Range 8 East, Section 10 in Pinal County, Arizona), which is approximately 6.6 miles from the proposed 230kV Pinal South substation.
c. TransCanada requested interconnection in-service date is September 1, 2010.
d. TransCanada request for synchronizing date is October 1, 2010.
e. TransCanada requested commercial operation date (full output) of May 1, 2011.
f. SRP voltage criteria is 5% deviation from pre-outage voltage for n-1 contingencies.
g. Short circuit studies were performed using the available models.
h. Mitigation of pre-existing conditions will not be addressed by this study.

V. Power Flow Results

The 2011 SWAT base case that was used for the thermal and voltage studies contained a large number of pre-existing N-1 violations. These pre-existing violations are assumed to be the responsibility of the owning utility and are not due to the TransCanada generation facility interconnection. The 2011 SWAT base case included a 230kV line from Pinal South to Sundance and a 500kV line from Pinal South to Tortolita. Due to the timing and interconnection order of these lines it was assumed that neither line is in-service for the base study. A sensitivity was run with both lines in-service to determine the impact of the TransCanada generation interconnection.

To determine the impact of the new TransCanada generation a comparison was made between the loading and voltages in the pre-generation case and the post-generation case for all outages. Any increase of 1% or more from the pre-case to the post-case, when the highest loading is above 100% of stated emergency rating, will be noted for the results. Elements that show a significant increase in loading but do not exceed their emergency limit will not be noted.

V.I. Impact on SRP Transmission System

The study results showed the following elements on the SRP transmission system being impacted by the addition of TransCanada generation.

	Pre-TransCanada loading (% of emergency rating)	Post-TransCanada loading (% of emergency rating)
Santan – Thunderstone 230kV line for Silver King 500/230kV transformer outage	107%	114%
Micromill One – Germann 69kV line for Browning 230/69kV transformer outage	94.6%	102%

As shown in the table the Santan – Thunderstone 230kV line was overloaded for the critical outage in the pre-case. After the 2011 SWAT base case was developed, it was determined that the Santan – Thunderstone 230kV line will be upgraded prior to 2010 and will not be overloaded for this outage.

The only negative impact on the SRP transmission system for the addition of the TransCanada generation is the resulting overload on the Micromill One – Germann 69kV line for the outage of the Browning 230/69kV transformer. Due to the overload, this 69kV line will need to be upgraded to accommodate the interconnection of this new generation. The length of this line requiring upgrade is approximately one mile long and would cost an estimated $350,000 to upgrade.

There are no significant (>1%) changes to voltage results for the SRP transmission system with TransCanada generation online.

The addition of the APS Pinal South – Sundance 230kV line and the TEP Pinal South – Tortolita 500kV line do not change impacts of TransCanada generation on the SRP system significantly.

V.II. Impact on Affected Systems

The study results showed the following elements of the Affected Systems (non-SRP) transmission system being impacted by the addition of TransCanada generation.

	Pre-TransCanada loading (% of emergency rating)	Post-TransCanada loading (% of emergency rating)
APS Casa Grande 230/69kV transformer for Milligan 230/69kV transformer outage	109.3%	112.5%

As shown in the table the APS Casa Grande transformer was overloaded for the same outage in the base case. APS will be responsible for fixing this pre-existing condition with or without TransCanada generation being constructed. APS was consulted on this

issue to coordinate a solution and APS indicated that this is an acceptable loading for this case.

There are not significant (>1%) changes to voltage results for the non-SRP transmission system with TransCanada generation online.

The addition of the APS Pinal South – Sundance 230kV line and the TEP Pinal South – Tortolita 500kV line do not change impacts of TransCanada generation on the non-SRP systems significantly. The addition of the APS Pinal South – Sundance 230kV line (with and without TransCanada generation) does increase the loading on the WAPA Sundance – Coolidge 230kV circuits significantly but does not overload them.

In addition, the 230kV interconnection to the Pinal South facility will need to be coordinated with the owners of that facility and their Affected Systems. SRP will be coordinating that interconnection as part of the Southeast Valley Project.

V.III. Impact on SRP Transmission System October 2010 through April 2011

The Pinal South to Dinosaur 230kV line is scheduled to be completed May 1, 2011. To accommodate construction and start-up activities, TransCanada has requested the maximum output limit of the TransCanada Coolidge Generating Station for the time from October 1, 2010 to May 1, 2011. During this time it is planned that the TransCanada site will be temporarily fed off only the 230kV line from Dinosaur to the generation facility (Randolph). Since the complete 230kV line from Dinosaur to Pinal South (Randolph to Pinal South segment) is not scheduled for completion until May 1, 2011, the radial feed from Dinosaur was studied. During the study timeframe it is anticipated that the SRP system load will not exceed 80% of the forecasted 2010 summer peak load. For this configuration and load level, the maximum net generation output of the TransCanada Coolidge Generating Station is limited to 360MW. This limit is the emergency rating of the Dinosaur 230/69kV transformer for the outage of the Browning to Dinosaur 230kV line. In this configuration any outage of the 230kV line from Dinosaur to Randolph will interrupt interconnection service and prohibit generation at the TransCanada Coolidge Generating Station. This time period is generally the time when SRP conducts most construction and maintenance activities and these activities may further limit plant output for short periods of time.

ATTACHMENT 3 contains system load flow drawings (pre- and post- contingency) showing the overload of local areas. The first drawing ("Normal") shows the 2010 radial configuration with no outages and loadings as a percent of continuous rating (all system out of service is not yet in service for that case). The second drawing ("Emergency") shows the case with the Dinosaur - Browning 230kV line out of service and the loading on the Dinosaur 230/69kV transformer as a percent of the emergency rating. The low side of the transformer, where actual rating is determined, is at 100.4% of the emergency rating.

V.IV. Remedial Action Scheme Option for October 2010 through April 2011

In order to accommodate the testing of the TransCanada Coolidge Generating Station at full generation capability, a remedial action scheme (RAS) could be installed. A RAS should allow full output of TransCanada generation during normal transmission system conditions during the October 2010 through April 2011 timeframe.

In the event of an outage of the Dinosaur to Browning 230kV line, the RAS would immediately reduce TransCanada generation to below 360 MW. In addition, TransCanada generation would need to be reduced to below 280 MW within a time period specified by SRP operations (typically 30 minutes) in order to lower the loading of the Dinosaur 230/69kV transformer to below the continuous rating of 280 MVA.

The cost to implement a RAS for the time period when the TransCanada Coolidge Generating Station is connected via radial to Dinosaur (October 2010 through May 2011) is estimated to be $75,000. This cost estimate assumes existing redundant communication paths are available.

Any outage of the 230kV line from Dinosaur to Randolph will interrupt interconnection service and prohibit any generation at the TransCanada Coolidge Generating Station. This time period is generally the time when SRP conducts most construction and maintenance activities and these activities may further limit plant output for short periods of time.

VI. Short Circuit Analysis

The short circuit analysis was conducted using the ASPEN OneLiner program using an SRP 2011 planning model. Single phase and 3-phase faults where studied at nearby transmission busses and any significant difference between the pre-generation and post-generation model was noted. Significant fault current level increases (a delta greater than 500A) occur at 230kV busses close to the new proposed TransCanada generation facility. All of these sites are newer (or yet to be built) locations and fault levels are below breaker interrupting limits.

The addition of the APS Pinal South – Sundance 230kV line will increase fault levels near Sundance and Coolidge both with and without TransCanada generation. Due to modeling limitations this sensitivity was not run for fault current levels.

VII. Transient Stability

Transient stability analysis is a time-based simulation that assesses the ability of a power system to maintain synchronism during a disturbance. Transient stability studies were performed to verify the system's stability following a critical fault on the system.

For the purpose of this ISIS, the 2011 WECC Heavy summer power flow base case and dynamic file were modified to include detail of the lower voltage facilities (69kV) of SRP's system in the surrounding area. Power flow simulations were performed to verify convergence of the modified base case. A flat run test transient stability simulation was also performed on the modified base case and dynamic file to assure no anomalies were present before the transient stability studies were performed with contingencies. The power flow simulation showed that an SVD model located at Bus 33210 POT SVC was causing a divergence in the power flow analysis. This bus provided 31 MVAR in the Pacific Gas & Electric area. The SVD was turned off in the simulation to resolve the problem. This device was considered too remote to have a significant impact on the transient stability results.

Transient stability analysis was performed based on WECC Disturbance-Performance Criteria for selected system contingencies. Initial transient stability contingencies were simulated out to 20 seconds. The fault simulations were all assumed to be zero impedance three phase faults placed at substation busses. Fault clearing at the substation busses initiated the dropping of selected circuit elements. Fault durations were assumed to be 4 cycles for 500kV faults and 4.5 cycles for 230kV faults. All transient simulations use WECC Standard "epcl" programs "alldyns.p", "ocsgov.p" and "pv10_run.p". The dynamic models for GE LM6000 used were developed from generator parameters provide by TransCanada. The models developed were the solid state rotor model (genrou), excitation system model (esac7b), and Power System Stabilize model (PSS2a). The governor model (ggov1) was provided by TransCanada.

The transient stability contingencies were selected by the fault locations that would have the largest impact on the surrounding transmission system with the new generation facility in-service. The contingencies were studied for modified 2011 Heavy Summer WECC base case and a transmission sensitivity base case that included the 230kV Pinal South to Sundance and 500kV Pinal South to Tortolita lines. The following are the four contingencies selected for these transient stability studies:

230kV Pinal South to Randolph,
230kV Randolph to Southeast Valley (SEV),
230kV Pinal South to Randolph & 500kV Pinal South to Southeast Valley (SEV), and
230kV Randolph to Southeast Valley (SEV) & 500kV Pinal South to Southeast Valley (SEV)

An additional scenario base case was developed for the time period that the new generation facility may be connected via radial to the 230kV Dinosaur substation. Although the 230/69kV transformer at Southeast Valley substation is not scheduled to be in-service prior to May 1, 2011, an in-service 230/69kV transformer at Southeast Valley with the contingencies of 230kV Browning to Dinosaur and Dinosaur to Southeast Valley would have the most severe impact on the system. For this worst-case scenario, no transient stability violations were observed.

Study results were evaluated using WECC Reliability Criteria, and the North American Electric Reliability Council (NERC) Planning Standards shown in ATTACHMENT 4 (Table W-1 and Figure W-1). The transient voltage, frequency and rotor angle were monitored at the following busses:

Randolph 230kV	Desert Basin 230kV	Sundance 230kV	Kyrene 230kV
Santan 230kv	Westwing 230kV	Silver King 230kV	Pinnacle Peak APS 230KV
Coronado 500kV	Cholla 500kV	Silver King 500kV	Springervillle 345kV

The bus voltage plots are used to measure the transient voltage, the duration of the maximum voltage dip, and the duration of the voltage oscillations before the voltage reaches a steady state condition. Bus frequency plots are used to measure frequency fluctuations post-fault that are caused by system imbalance between generation and load. Rotor angle plots are used to measure the potential to go out-of-step from the rest of the system following a disturbance.

Using the WECC criteria for a single element contingency (NERC/WECC Category 'B'), the new generation facility did not violate transient voltage dip percentages at any load or non-load bus. There were no violations for frequency dipping below 59.6HZ over 6 cycles. For the WECC criteria for a two element contingency (NERC/WECC Category 'C'), there were no voltage or frequency violations.

VIII. Interconnection Facilities

The following is an estimate of the Interconnection Facilities needed to facilitate the interconnection of the TransCanada Coolidge Generating Station to the Pinal South to Dinosaur 230kV line. One-line diagrams of the proposed interconnection configurations can be found in ATTACHMENT 5. The following Interconnection Facilities shall be installed on the 230kV line or in the Randolph substation and shall include, but not be limited to, the items described below:

- Transmission Structures, including tower foundations and structures, conductor, and associated hardware.
- Bus Facilities:
    - Structures and equipment foundations, conduit, lighting, and grounding.
    - Bus supports, line dead-ends, equipment and conductor support structures.
    - 230kV circuit breakers and 230kV disconnect switches and associated equipment
    - Conductor and associated hardware.
    - Breaker protective equipment, control and monitoring, communications and control, and power cable.
- SCADA and associated communications equipment including cabinets and cable
- Communication equipment
- Metering Equipment

- Control House building including batteries, line relaying equipment, and cabling.
- Site Security equipment

The estimated costs for the Interconnection Facilities are as follows:

- TransCanada Proposal ("Randolph")
  Construction Costs = $ 8.5 million
  Annual O&M Costs = $ 95,000

- SRP Proposal ("Randolph")
  Construction Costs = $ 6.4 million
  Annual O&M Costs = $ 70,000

The estimated time to complete construction of the interconnection facilities is 12 months. A more detailed schedule will be provided in the Interconnection Facilities Study report.

The estimated costs for the 69kV transmission system upgrades are $350,000.

The estimated construction cost to provide interconnection service is $6,750,000 or $8,850,000; depending upon which proposed substation configuration is accepted. Additionally, if requested, it will cost an estimated $75,000 to implement a RAS for the October 2010 through May 2011 time period.

IX. Conclusions

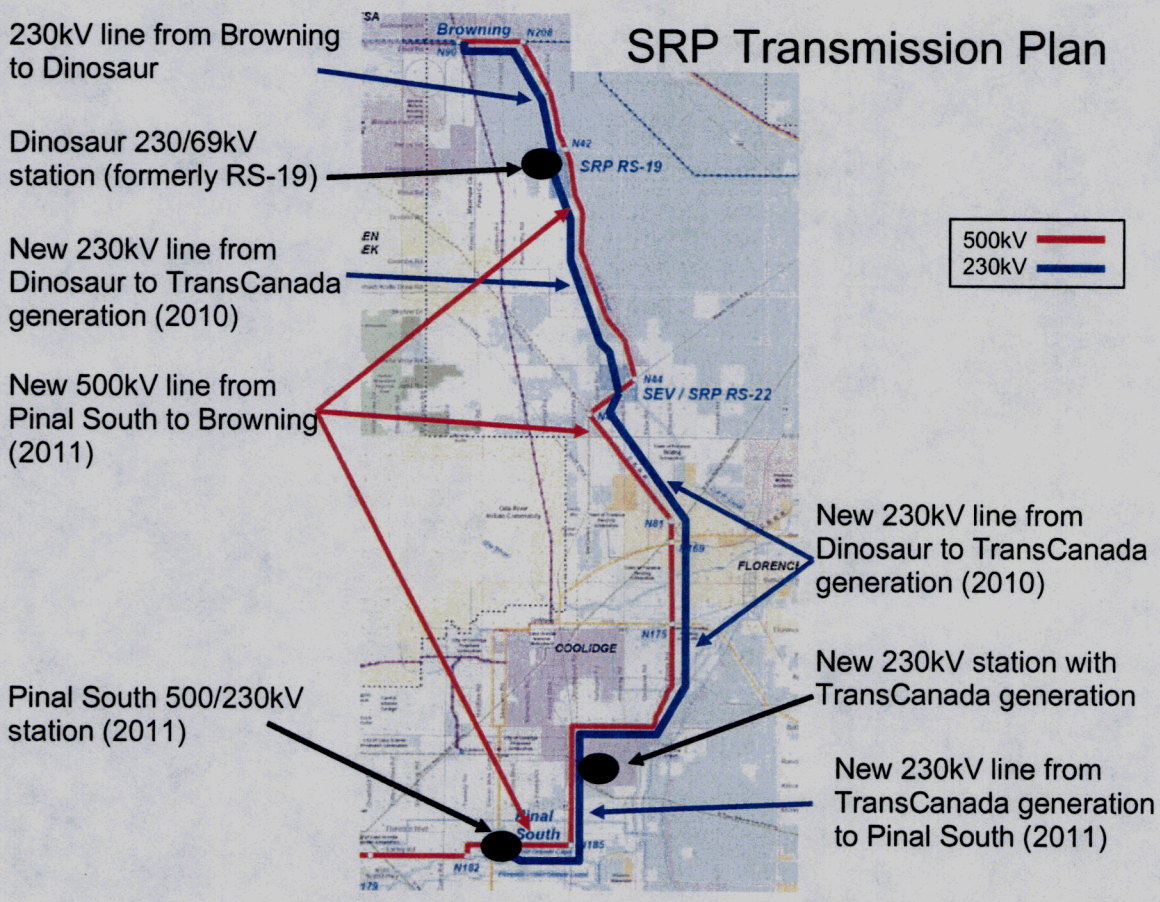
The conclusions of this study are that the TransCanada Coolidge Generating Station interconnection:

1. Requires an upgrade on the SRP 69kV transmission system.
2. Does not produce transient stability violations.
3. Does not increase fault current levels above acceptable limits.
4. Has a negligible impact on the short circuit duty at 500kV busses in the area.

The construction cost to build facilities needed to provide interconnection service is estimated to be either $6,750,000 or $8,850,000 (depending on substation configuration) and is estimated to take a minimum of 12 months to build. Additionally, if requested, it will cost an estimated $75,000 to implement a RAS for maximum station output during the time period of October 2010 through May 2011.

ATTACHMENT 1

SRP Planned Transmission Facilities Map



ATTACHMENT 2

INTERCONNECTION SYSTEM IMPACT STUDY PLAN

TRANSCANADA PEAKING FACILITY

July 19, 2007

OBJECTIVE:

Determine the requirements for providing Generating Facility Interconnection Service for a proposed new TransCanada Peaking Facility that will interconnect to the future SRP Pinal South/Dinosaur Transmission Line.

GOALS:

- Identify power flow, short circuit, and stability impacts of this Interconnection on SRP's Transmission System and Affected Systems.
- Identify potential substation configuration to be used at the generator substation to preserve the reliability of the SRP Transmission System. For example, looped configuration with single breaker versus looped configuration with breaker and a half versus double breaker configuration, etc....
- Preliminary identification of facilities required to complete the Interconnection.
- Estimate costs, cost responsibility and time to construct facilities required to complete the Interconnection.

ASSUMPTIONS:

- TransCanada requested interconnection in-service date is September 1, 2010 to accommodate station service power.
- TransCanada requested initial synchronization date is October 1, 2010.
- TransCanada requested commercial operation date (full output) of May 1, 2011.
    - Sensitivity study to determine maximum allowed generation from October 1, 2010 to May 1, 2011.
- Point of Interconnection to be studied is on the high-side of the generator step-up (GSU) transformers in the new substation on the generator plant site. The generator plant site is located in Township 6 South, Range 8 East, Section 10; approximately 5 miles south of the town of Coolidge in Pinal County, Arizona.
    - Proposed GSU Transformers high-side is 230kV
    - The Point(s) of Interconnection will connect to the future Pinal South/Dinosaur 230kV line near Coolidge in Pinal County, AZ.
- Interconnection consists of a 230kV switchyard connected to six 230/13.8kV generator step-up transformers and 12 LM 6000 generators.
    - The new substation will be located on the east side of the 230kV corridor.
- No future generation expansion will be studied.
- SRP voltage criteria is 5% deviation from nominal system voltage for n-1 contingencies on 230kV or higher.

- Potential impacts of the proposed generating facility and interconnection on the 69kV system and distribution system will be studied.
- Potential impacts of the proposed generating facility and interconnection on Affected Systems will be studied.
- Potential Affected Systems: Pinal County transmission system, PVTS, SEVP, Valley Transmission System, other Affected Systems
- TransCanada will site, purchase and acquire any permits required for the substation site.
- The facilities and costs identified in this study shall include only the 230kV switchyard facilities, which may include the bus work, breakers, switches, relaying, metering, ground grid, control house, site preparation, and drops. SRP will not be responsible for the generator step-up transformers or any portion of the generating facility.
- NERC, WECC and other regional planning criteria will be followed.
- No transmission service will be studied as part of this Interconnection Request.
- Base Cases used will be the 2008 SRP plan and the 2011 SWAT case.

POWER FLOW, SHORT CIRCUIT, & STABILITY IMPACT:

- TransCanada will provide generator data for use in this study.
    - In addition to the Interconnection Request form, generator PSS data is needed (if available).
- Power Flow consideration
    - Determine all N-0 and N-1 conditions
    - Study N-2 conditions as sensitivities
    - Determine post-transient sensitivity on valley transmission system.
- Short Circuit consideration
    - Determine the short circuit impact on the Pinal County area transmission system, PVTS, SEVP transmission system, Valley Transmission System, and other Affected Systems.
- Stability consideration
    - Determine if the transmission system is stable under all N-1 conditions with the addition of TransCanada generation.

SUBSTATION CONFIGURATION:

- Protection consideration
    - Determine acceptable breaker/relaying schemes conforming to SRP's protection standards.

COST:

- Develop a preliminary cost estimate for the interconnection facilities.
    - Cost estimate will include capital cost to construct and annual cost to maintain the 230kV facilities. The estimate will include itemized costs to the extent possible. TransCanada will be responsible for these costs.
    - Cost estimate will not include any siting, land purchasing, permitting, or right-of-way acquisition costs.

- All costs will be in 2007 dollars with no escalation to the projected in-service date of 2010.

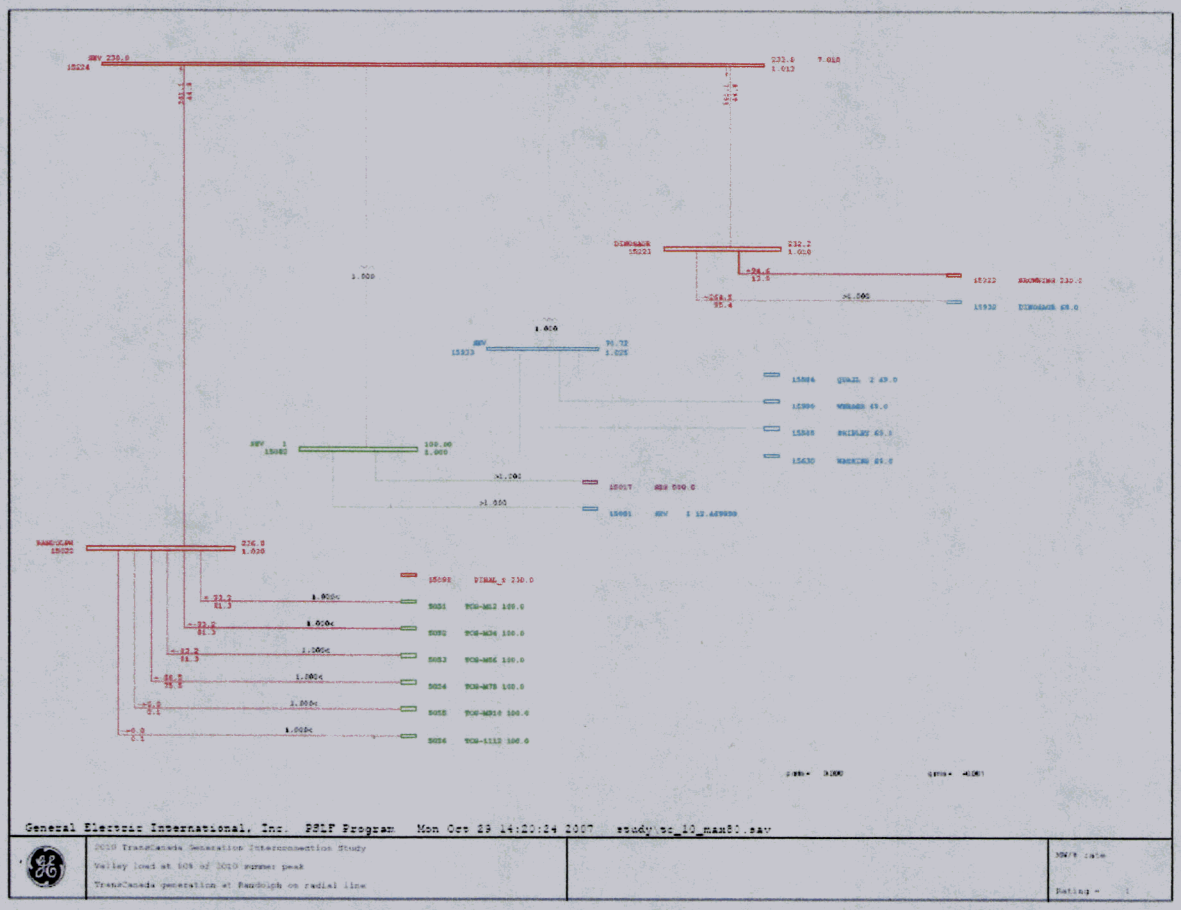
SCHEDULE:

- Develop a preliminary estimate for the time to construct the interconnection facilities.

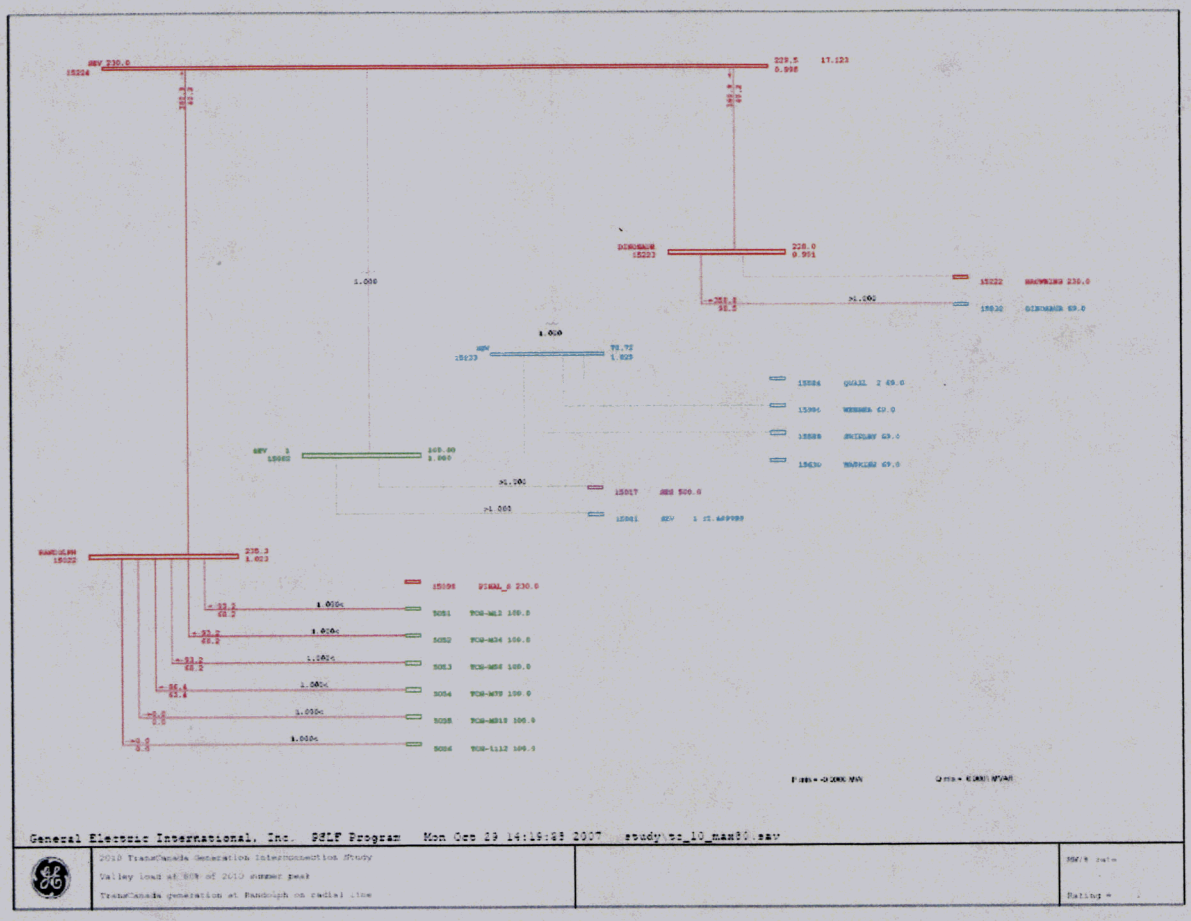
ATTACHMENT 3

Power Flow Study Overload Result

"Normal"



"Emergency"


General Electric International, Inc. PSLF Program Mon Oct 29 14:19:48 2007 study:tc_10_man80.sav
2010 TransCanada Generation Interconnection Study
Valley load at 80% of 2010 summer peak
TransCanada generation at Randolph on radial line

ATTACHMENT 4

WECC Performance Parameters

WECC DISTURBANCE-PERFORMANCE TABLE OF ALLOWABLE EFFECTS ON OTHER SYSTEMS

NERC and WECC Categories	Outage Frequency Associated with the Performance Category (outage/year)	Transient Voltage Dip Standard	Minimum Transient Frequency Standard	Post Transient Voltage Deviation Standard (See Note 2)
A	Not Applicable	Nothing in addition to NERC		
B	≥ 0.33	Not to exceed **25%** at load buses or **30%** at non-load buses. Not to exceed **20% for more than 20 cycles** at load buses.	Not below **59.6** Hz for 6 cycles or more at a load bus.	Not to exceed **5%** at any bus
C	0.033 – 0.33	Not to exceed **30%** at any bus. Not to exceed **20% for more than 40 cycles** at load buses.	Not below **59.0** Hz for 6 cycles or more at a load bus.	Not to exceed **10%** at any bus.
D	< 0.033	Nothing in addition to NERC		

Notes:

1. *The WECC Disturbance-Performance Table applies equally to either a system with all elements in service, or a system with one element removed and the system adjusted.*

2. *As an example in applying the WECC Disturbance-Performance Table, a Category B disturbance in one system shall not cause a transient voltage dip in another system that is greater than 20% for more than 20 cycles at load buses, or exceed 25% at load buses or 30% at non-load buses at any time other than during the fault.*

3. *Additional voltage requirements associated with voltage stability are specified in Standard I-D. If it can be demonstrated that post transient voltage deviations that are less than the values in the table will result in voltage instability, the system in which the disturbance originated and the affected system(s) should cooperate in mutually resolving the problem.*

Table W-1

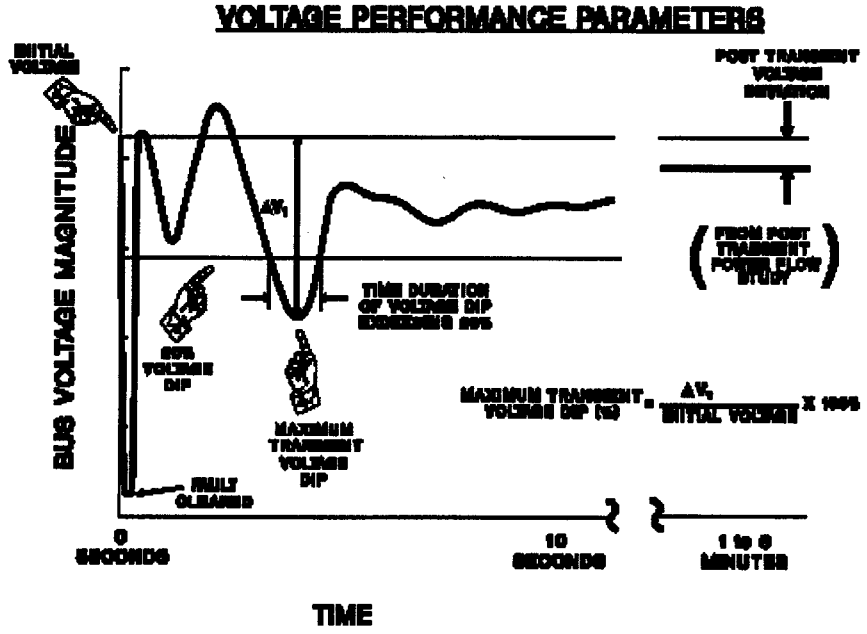

VOLTAGE PERFORMANCE PARAMETERS
INITIAL VOLTAGE
POST TRANSIENT VOLTAGE DEVIATION
BUS VOLTAGE MAGNITUDE
FROM POST TRANSIENT POWER FLOW STUDY
TIME DURATION OF VOLTAGE DIP
STEADY STATE VOLTAGE DIP
MAXIMUM TRANSIENT VOLTAGE DIP
FAULT CLEARED
0 SECONDS
10 SECONDS
1 to ∞ MINUTES
TIME

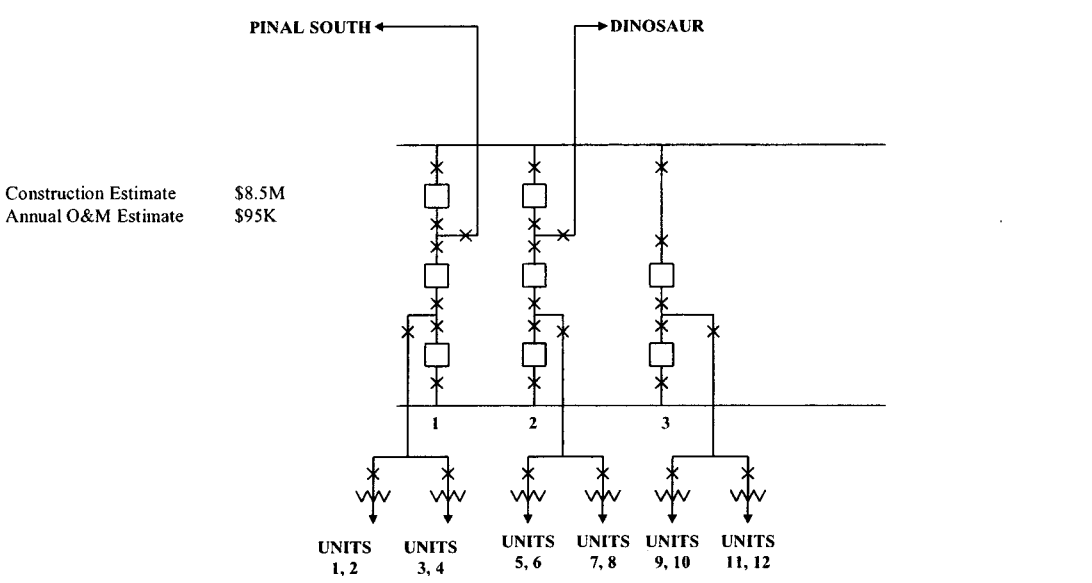
Figure W-1

ATTACHMENT 5

Interconnection Facilities and Costs

TransCanada Proposed Switchyard Diagram ("Randolph"):

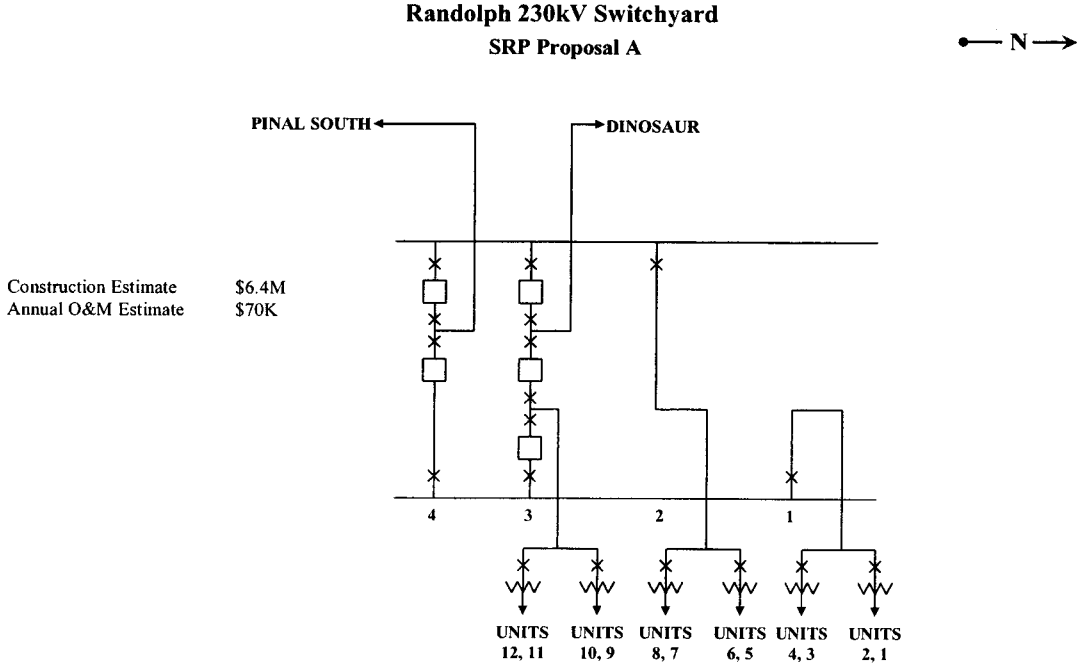
Randolph 230kV Switchyard Initial
TransCanada Proposal



Construction Estimate $8.5M
Annual O&M Estimate $95K

SRP Proposed Switchyard Diagram A (Randolph):

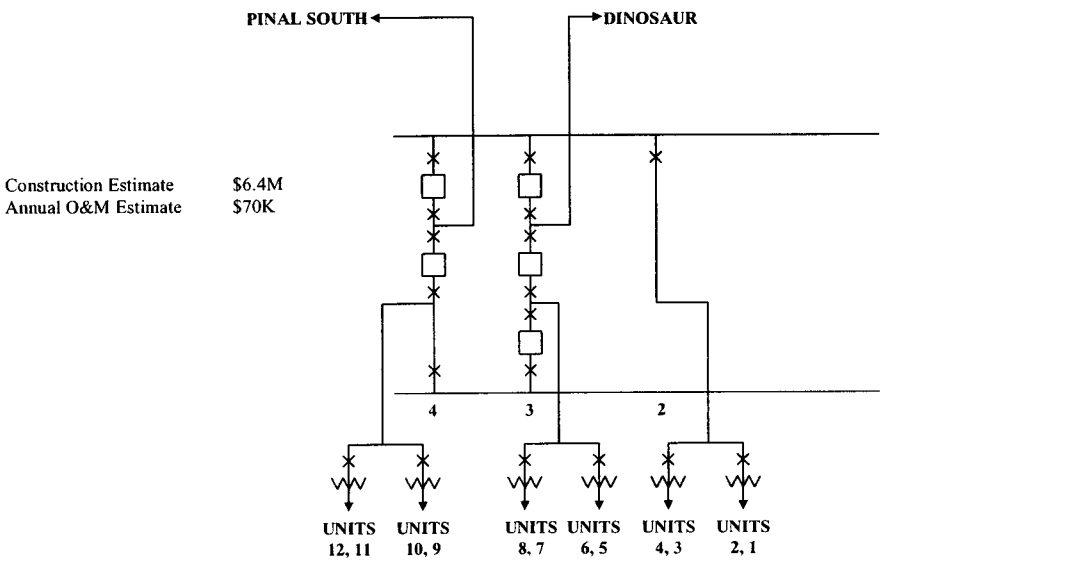
Randolph 230kV Switchyard
SRP Proposal A



Construction Estimate	$6.4M
Annual O&M Estimate	$70K

SRP Proposed Switchyard Diagram B (Randolph):

Randolph 230kV Switchyard
SRP Proposal B



SRP Proposed Switchyard Diagram (Randolph), possible expansion:

Randolph 230kV Switchyard

Possible Expansion: Breaker and a half Configuration