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# **BLYTHE ENERGY PROJECT PHASE II**

**AMENDMENT**

**(02-AFC-1C)**

**DATA RESPONSE SET 1 SUPPLEMENT #1**

<b>DOCKET</b>
<b>02-AFC-1C</b>
DATE _____
RECD. <u>OCT 01 2010</u>

**Submitted to**

**California Energy Commission**

**Submitted by**

**Caithness Blythe II, LLC**

**September 2010**

October 1, 2010

California Energy Commission  
Dockets Unit  
1516 Ninth Street  
Sacramento, CA 95814-5512

Subject: **CAITHNESS BLYTHE II, LLC'S DATA RESPONSES SET 1  
SUPPLEMENT 1  
BLYTHE ENERGY PROJECT PHASE II AMENDMENT  
DOCKET NO. (02-AFC-1C)**

Enclosed for filing with the California Energy Commission are 2 (two) hardcopies (one original and one copy), and 2 (two) compact discs of **CAITHNESS BLYTHE II, LLC'S DATA RESPONSES SET 1 SUPPLEMENT 1**, for the Blythe Energy Project Phase II Amendment (02-AFC-1C). This Supplement includes;

- Attachment 1 - Revised Figure 6-1
- Attachment 2 - Revised Figure 6-3
- Attachment 3 - Desert Southwest Transmission Project Plan of Development
- Attachment 4 - BEP II Expansion Feasibility Study
- Attachment 5 - Dead End Structures

Sincerely,



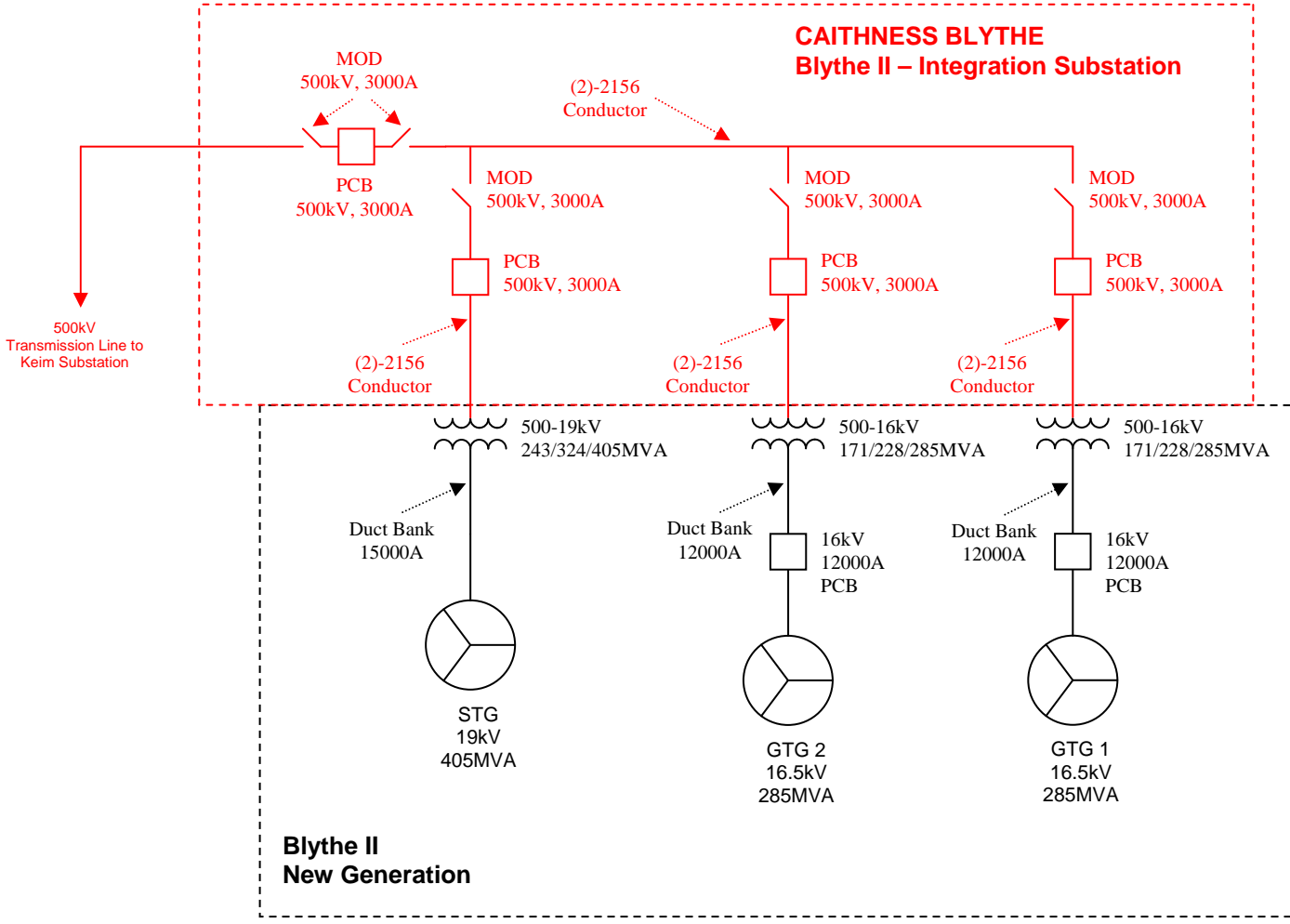
Marie Mills

**BLYTHE ENERGY PROJECT PHASE II  
AMENDMENT**

**DATA RESPONSE SET 1 SUPPLEMENT 1**

**ATTACHMENT 1**  
**REVISED FIGURE 6-1**

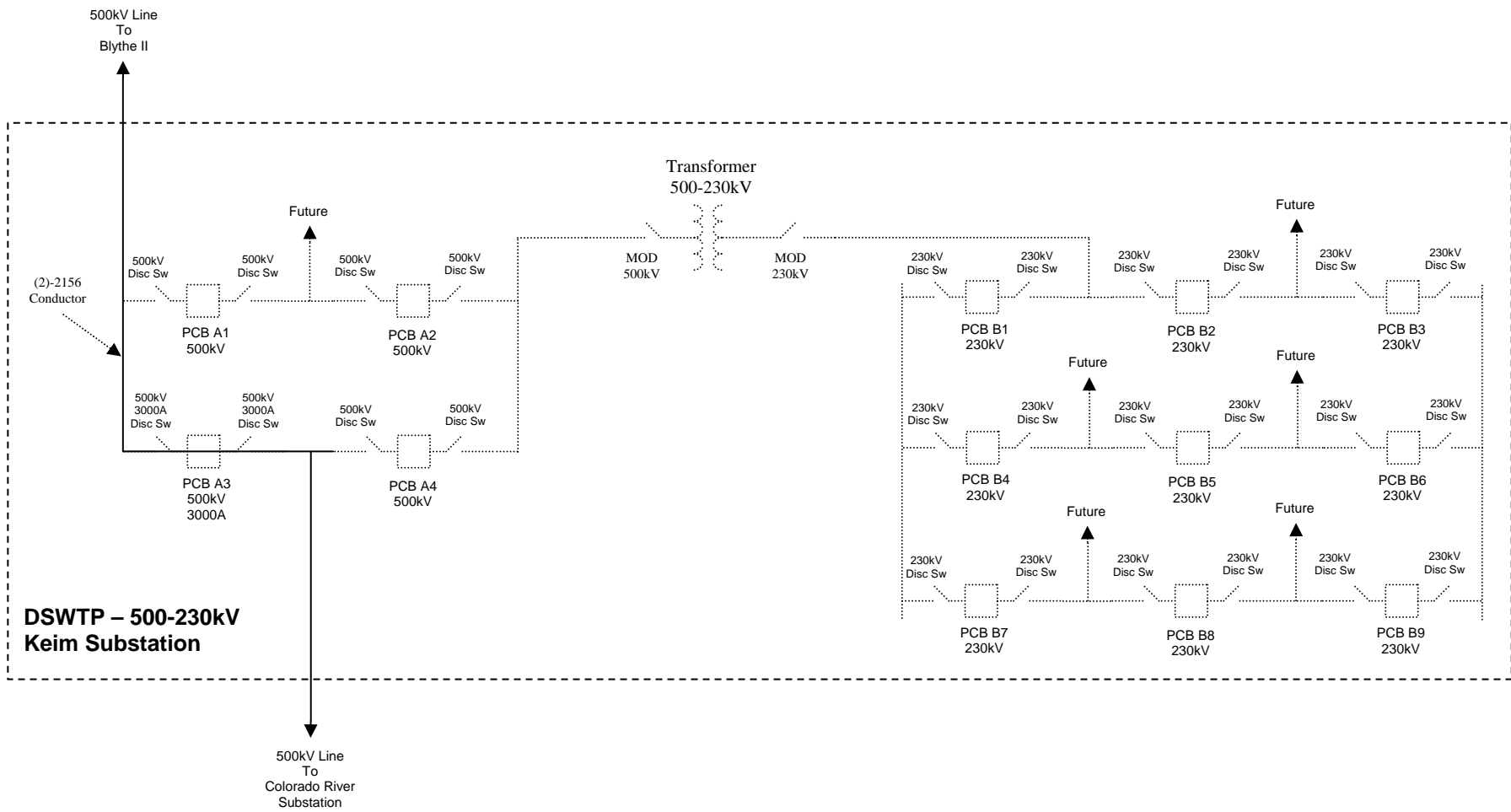
**CAITHNESS BLYTHE  
Blythe II – Integration Substation**



**Blythe II  
New Generation**

	<p>DATE: <u>09/27/10</u> REV: <u>B</u></p>	<p><b><u>BLYTHE II</u></b> <b><u>Integration Substation</u></b> <b>ONE-LINE</b></p>	<p>DWG NO <b>001</b></p>
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**ATTACHMENT 2**  
**REVISED FIGURE 6-3**



DATE: 09/30/10  
 REV: C

**DSWTP – KEIM SUBSTATION**  
 ONE-LINE

DWG NO  
**002**

**ATTACHMENT 3**

**DESERT SOUTHWEST TRANSMISSION PROJECT PLAN OF  
DEVELOPMENT (KEIM – MIDPOINT)**



**DUE TO THE FILE SIZE THIS ATTACHMENT HAS BEEN  
SUPPLIED ON COMPACT DIC**

**ATTACHMENT 4**  
**BEP II EXPANSION FEASIBILITY STUDY**

February 27, 2008

Mr. Robert Looper  
Caithness Energy, LLC  
1015 West Hays  
Boise, ID 83702

**Subject: Blythe II Expansion Feasibility Report**

Dear Mr. Looper:

Attached is the Interconnection Feasibility Study (IFeS) Report for the interconnection of the proposed 50 MW Blythe II Expansion Project (Project) to the Southern California Edison Company's (SCE) proposed Midpoint 500kV Substation. The California Independent System Operator Corporation (CAISO) and SCE performed the IFeS in accordance with the CAISO's LGIP tariff. The Project's proposed Commercial Operation Date (COD) is June 01, 2012.

Results of the IFeS will be used as the basis to develop a description and non-binding, good faith estimated cost and time to construct the required facilities to interconnect the Project. ***The study accuracy and results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by Caithness Energy.*** Any changes from the data provided could void the study results. The IFeS report provides detailed study assumptions and conditions of the system in which the IFeS was conducted.

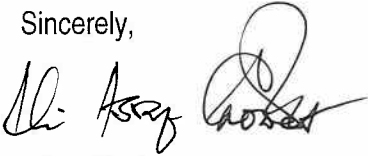
The IFeS concluded that the Project could interconnect to the system without triggering any additional interconnection and reliability upgrades beyond those identified in the initial 520 MW Blythe II project.

Upon completion of the remaining Interconnection Studies, this Project may interconnect to the CAISO Controlled Grid after making the required system upgrades and be eligible to deliver the Project's output using available transmission. However, the interconnection studies do not establish the Project's level of deliverability for purposes of determining its Net Qualifying Capacity under the CAISO Tariff and in accordance with CPUC-adopted Resource Adequacy Rules. Therefore, this letter makes no representation, and Caithness Energy, LLC cannot rely on any statements herein, regarding the ability, or amount, of the output of the Project to be eligible to sell Resource Adequacy Capacity. Separate studies entitled "Deliverability Assessments" will be done by the CAISO, which will determine whether or not the Project is 100% deliverable to the Grid. If the Project is found less than 100% deliverable, the study will recommend mitigation measures to make it 100% deliverable.

The IFeS results meeting will be coordinated and scheduled by the CAISO Project Specialist J.D. Pratt (916) 608-5732 ([jpratt@caiso.com](mailto:jpratt@caiso.com)) within 10 business days following receipt of this Interconnection Feasibility Study Report.

Should you have questions regarding the Study, please contact Songzhe Zhu at (916) 608-5854 ([szhu@caiso.com](mailto:szhu@caiso.com)) or myself at (916) 608-1113 ([ACHowdhury@caiso.com](mailto:ACHowdhury@caiso.com)).

Sincerely,



Ali Asraf Chowdhury, Ph.D.  
Director of Regional Transmission - South

Attachment

via e-mail:

Robert Looper ([rlooper@spellc.com](mailto:rlooper@spellc.com))  
John Tucker ([John.Tucker@sce.com](mailto:John.Tucker@sce.com))  
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CAISO via email:

J.D. Pratt ([jpratt@caiso.com](mailto:jpratt@caiso.com))  
Ali Asraf Chowdhury ([ACHowdhury@caiso.com](mailto:ACHowdhury@caiso.com))  
Songzhe Zhu ([szhu@caiso.com](mailto:szhu@caiso.com))

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# Interconnection Feasibility Study Report

**Generation Interconnection**

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Caithness Energy, LLC

Blythe II Expansion



**California ISO**  
Your Link to Power

February 27, 2008

**This study has been completed in coordination with Southern California Edison per  
the Large Generator Interconnection Procedures.**

## EXECUTIVE SUMMARY

On May 7, 2007, as amended on May 22, 2007, Caithness Energy, LLC (“Caithness”) applied to the California Independent System Operator (“CAISO”) for the interconnection of the Blythe II Expansion Project (“Project”) pursuant to Section 3.5 of the Large Generator Interconnection Procedures (“LGIP”) issued under the CAISO Tariff. Caithness requested to interconnect an additional 50 MW of generation by expanding its proposed Blythe II Project, a 520 MW combined cycle generating facility to be located in Blythe, California. The Blythe II Expansion Project will increase the size of the Blythe II Project to a total of 570 MW. The proposed primary point of interconnection is to Southern California Edison Company’s (“SCE”) proposed Midpoint 500 kV Substation via a radial 500 kV generation tie line. (Midpoint Substation is proposed to be constructed in the later part of 2011 to interconnect the Blythe II Project to SCE’s existing Devers-Palo Verde No. 1 and future No.2 500 kV transmission lines).

As a result of an Interconnection Request received from Caithness, CAISO and SCE performed a Feasibility Study (“Study”) of the proposed Project. The purpose of the Feasibility Study is to provide the power flow and short-circuit duty impact of the Blythe II Expansion Project on SCE’s electrical system, including that portion of SCE’s electrical system that is part of the CAISO Controlled Grid.<sup>1</sup> The Study was performed for two system conditions: a 2013 heavy summer with a one-in-ten load forecast and a 2013 light spring load forecast (65% of the heavy summer load). These conditions reflect the most critical expected loading condition for the transmission system in SCE’s area. The study included all queued generation projects in the study area ahead of the Blythe II Expansion Project regardless of the in-service dates of such prior projects. The system load condition assumptions were based on the latest in-service date of all queued ahead projects. This methodology serves to identify all needed network upgrades and to facilitate assignment of project cost responsibility.

Results of the Study are to be used to develop a description and non-binding, good faith estimated cost and time to construct the required facilities to interconnect the Blythe II Expansion Project as specified in LGIP Section 6.2. In addition, the results are to be used to identify any Affected Systems which may be potentially impacted by the proposed Blythe II Expansion Project. If applicable, the Study draft report will be circulated to each identified Affected System for their review. Caithness may need to enter into separate Interconnection Study Agreements with any Affected Systems. **The study accuracy and results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by Caithness.** Any changes from the data provided could void the study results, specifically short-circuit duty results. The Study report provides detailed Study assumptions and conditions of the system in which the Study was conducted.

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<sup>1</sup> In accordance with Attachment A to the *Allocation of Responsibilities with Regard to Large Generation Interconnection Procedures and Interconnection Study Agreements* dated August 10, 2006, CAISO will perform the Load Flow Analysis portion of the Project’s FS. SCE will conduct a Short Circuit Duty Analysis on SCE’s electrical system.

**Please be aware that a restudy may be required to reflect the system configuration if a higher queued generation or transmission project that was modeled in the Feasibility Study withdraws or is modified in accordance with applicable tariff allowances.**

This Study included power flow (steady-state) and transient stability for the most critical outage. Since no changes were made to the dynamic data for the generators that were studied in the BEPII SIS, a Short-Circuit-Duty was not performed. The CAISO completed the power flow study and requested SCE to resolve contingencies that resulted in non-convergence.

### **Conclusion**

Power flow, transient stability, and post-transient voltage analysis did not identify any adverse impacts, beyond those previously identified as part of the initial 520 MW Blythe II System Impact Study (SIS). Consequently no additional interconnection and reliability upgrades, beyond those identified in the initial 520 MW Blythe II SIS, will be required for the 50 MW expansion of Blythe II. A deliverability assessment will be performed by the CAISO to determine whether additional delivery upgrades are needed for the Project to be fully deliverable. If such delivery upgrades are identified and Caithness opts to be fully deliverable, a Facilities Study would be required to provide the cost and schedule estimate for such delivery upgrades. Otherwise, there is no need to perform any additional studies, both System Impact and Facilities Study, for this 50 MW Expansion Project.

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# CAITHNESS ENERGY, LCC. BLYTHE II 50 MW EXPANSION PROJECT

## FEASIBILITY STUDY

### I. INTRODUCTION

On May 7, 2007, as amended on May 22, 2007, Caithness Energy, LLC (“Caithness”) applied to the California Independent System Operator (“CAISO”) for the interconnection of the Blythe II Expansion Project (“Project”) pursuant to Section 3.5 of the Large Generator Interconnection Procedures (“LGIP”) issued under the CAISO Tariff. Caithness requested to interconnect an additional 50 MW of generation by expanding its proposed Blythe II Project, a 520 MW combined cycle generating facility to be located in Blythe, California. The Blythe II Expansion Project will increase the size of the Blythe II Project to a total of 570 MW. The proposed primary point of interconnection is to Southern California Edison Company’s (“SCE”) proposed Midpoint 500 kV Substation via a radial 500 kV generation tie line. (Midpoint Substation is proposed to be constructed in the later part of 2011 to interconnect the Blythe II Project to SCE’s existing Devers-Palo Verde No. 1 and future No.2 500 kV transmission lines).

As a result of an Interconnection Request received from Caithness, CAISO and SCE performed a Feasibility Study (“Study”) of the proposed Project. The purpose of the Feasibility Study is to provide the power flow and short-circuit duty impact of the Blythe II Expansion Project on SCE’s electrical system, including that portion of SCE’s electrical system that is part of the CAISO Controlled Grid.<sup>2</sup> The Study was performed for two system conditions: a 2013 heavy summer with a one-in-ten load forecast and a 2013 light spring load forecast (65% of the heavy summer load). These conditions reflect the most critical expected loading condition for the transmission system in SCE’s area. The study included all queued generation projects in the study area ahead of the Blythe II Expansion Project regardless of the in-service dates of such prior projects. The system load condition assumptions were based on the latest in-service date of all queued ahead projects. This methodology serves to identify all needed network upgrades and to facilitate assignment of project cost responsibility.

Results of the Study are to be used to develop a description and non-binding, good faith estimated cost and time to construct the required facilities to interconnect the Blythe II Expansion Project as specified in LGIP Section 6.2. In addition, the results are to be used to identify any Affected Systems which may be potentially impacted by the proposed Blythe II Expansion Project. If applicable, the Study draft report will be circulated to each identified Affected System for their review. Caithness may need to enter into

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<sup>2</sup> In accordance with Attachment A to the *Allocation of Responsibilities with Regard to Large Generation Interconnection Procedures and Interconnection Study Agreements* dated August 10, 2006, CAISO will perform the Load Flow Analysis portion of the Project’s FS. SCE will conduct a Short Circuit Duty Analysis on SCE’s electrical system.

separate Interconnection Study Agreements with any Affected Systems. **The study accuracy and results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by Caithness.** Any changes from the data provided could void the study results, specifically short-circuit duty results. The Study report provides detailed Study assumptions and conditions of the system in which the Study was conducted.

## II. STUDY CONDITIONS AND ASSUMPTIONS

### A. Planning Criteria

The study was conducted by applying the CAISO Reliability Criteria. More specifically, the main criteria applicable to this study are as follows:

#### Power Flow Analysis

The following contingencies are considered for transmission and sub-transmission lines and 500/230 kV transformer banks (“AA-Banks”):

- Single Contingencies – Loss of one line or one AA-Bank and selected overlapping outages of one generating unit and one line
- Double Contingencies – Loss of two lines or one line and one AA-Bank identified as common mode failure elements (Outages of two AA-Banks are beyond the Planning Criteria)

The following reliability criteria are used:

Transmission Lines	Base Case	Limiting Component Normal Rating
	N-1	Limiting Component A-Rating
	N-2	Limiting Component B-Rating
AA-Banks (500/230 kV) Transformer Banks	Base Case	Normal Loading Rating
	Long Term & Short Term	As defined by SCE Operating Bulletin

System upgrades for transmission lines are generally recommended for all reliability criteria violations. Special Protection Systems (SPS) may be allowed to mitigate violations to the reliability criteria for single contingency and credible double contingencies in place of system upgrades, provided that the SPS complies with the CAISO Planning Standards’ New Generator SPS Guidelines.

The following principles were used in determining whether congestion management, SPS, or facility upgrades are required to mitigate base case, single contingency, and/or double contingency overloads:

- Congestion management, as a means to mitigate base case overloads, can be used if it is determined to be manageable and CAISO Operations concurs with

the implementation. Congestion management to mitigate criteria violations may include curtailment of the proposed generation project in real time as needed.

- Facility upgrades will be required if it is determined that the use of congestion management for base case overloads is unmanageable.
- SPS will be recommended to mitigate criteria violations under outage conditions if it effectively mitigates contingency overloads, does not jeopardize system integrity, does not exceed the current CAISO single and double contingency tripping limitations, does not adversely impact existing or proposed SPS in the area, and conforms to existing CAISO SPS Guidelines.
- Facility upgrades will be required if the use of an SPS is determined to be ineffective, system integrity is jeopardized, the amount of generation tripping exceeds the current CAISO single and double contingency tripping limitations, adverse impacts are identified to existing or proposed SPS in the area, or the SPS does not conform with the existing SPS Guidelines.

The following study method was implemented to assess the extent of possible congestion:

- a) Under Base Case with all transmission facilities in service, the system was evaluated with all existing interconnected generation and all generation requests in the area that have a queue position ahead of this request (pre-project). Included in the study are 1) CAISO-approved transmission projects queued ahead of the generation interconnection request, 2) transmission projects identified via a stakeholder process that are currently under the project development stage (similar to generation projects), and 3) transmission upgrades identified as required to interconnect queued ahead generation projects.
- b) Under Base Case with all transmission facilities in service, the system was reevaluated with the inclusion of the Blythe II Expansion Project (post-project).

If the normal loading limits of facilities are exceeded in (a), the overload is identified as an existing overload that was triggered by a project in queue ahead of the Blythe II Expansion Project. If the normal loading limits of facilities are exceeded in (b) and were not exceeded in (a), the overload is identified as triggered by the addition of the Blythe II Expansion Project. The Blythe II Expansion Project and other market participants in the area may be subjected to congestion management, potential upgrade cost and/or participation in any proposed SPS if the project addition aggravates or triggers the overload. Additionally, the Blythe II Expansion Project may have to participate in mitigation of overloads triggered by subsequent projects in queue, subject to FERC protocols and policies.

Results of these studies should identify:

- a) If capacity is available to accommodate the proposed Blythe II Expansion Project and all projects ahead in queue without the need for congestion management, SPS, or facility upgrades.
- b) If base case overloads exist in the area after the addition of all projects in queue ahead of the Blythe II Expansion Project.
- c) If base case overloads are triggered in the area after the addition of the Blythe II Expansion Project

The range of base case congestion for the Blythe II Expansion Project will be determined by reducing market generation projects in the basin and northern area. For single and double element outage conditions, the same methodology will be used to identify how much generation tripping would be required to determine if the use of an SPS would be appropriate. The use of an SPS will be deemed inappropriate if the total amount of generation reduction is found to exceed 1,150 MW under loss of one transmission element and 1,400 MW under loss of two transmission elements. These limits are established by the CAISO utilizing the current Spinning Reserve Criteria.

## **B. Generation and Load Assumptions**

The power flow models included the load and resource assumptions for year 2013 based on SCE's 2007 annual transmission planning assessment. The Study is based on the 2013 Heavy Summer and Light Load models used in SCE's annual transmission planning assessment, as follows:

- Uses a one-in-ten year system forecast of 28,114 MW
- Scenario of light load (18,322 MW) in the spring, which represents approximately 65% of the forecasted peak load.

The base case also included all applicable generation currently in the SCE and CAISO interconnection queue ahead of the Project, and will be used to document pre-existing transmission system problems, if any, that exist prior to the interconnection of the Project. These generation assumptions are provided below in Table 1.

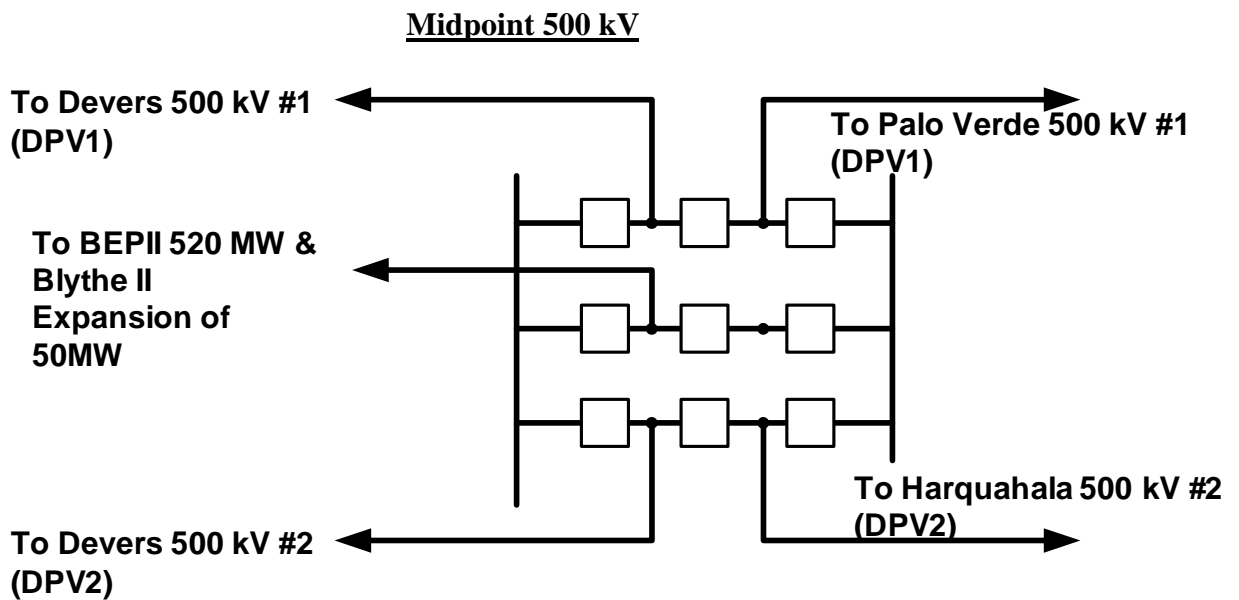
**Table 1**  
**ACTIVE QUEUED GENERATION PROJECTS MODELED IN THE STUDY**

<b>Project ID</b>	<b>Interconnection Point</b>	<b>(MW)</b>
CAISO1	Devers – Garnet 115 kV Line	16.5
CAISO3	Devers 230 kV Bus	850
CAISO17	Palo Verde – Devers 500 kV	520
CAISO23	San Bernardino 230 kV	72
CAISO49	Devers 115 kV	100.5
CAISO50	Valley 500 kV	810
CAISO72	Valley – Serrano 500 kV T/L	500
CAISO106	Mohave 500 kV	635
CAISO118	Mohave 500 kV	550
CAISO120	Mohave 500 kV	1200
CAISO126	Eldorado 230 kV	1500
CAISO130	Mohave 500	565
CAISO136	Etiwanda 230 kV	330
CAISO138	Devers-Vista 230 kV	150
CAISO139	Rancho Vista 500 kV	698
CAISO145	Eldorado 500 kV	591
CAISO146	Eagle Mountain 230 kV	150
CAISO147	Eagle Mountain 230 kV	400
CAISO174	Devers-Venwind 115 kV	30
CAISO179	Eagle Mountain 230 kV	300
CAISO180	Mira Loma-Vista #2 230 kV	564
CAISO181	Chino-Serrano 230 kV	404
CAISO193	Julian Hinds 230 kV	500
CAISO205	Eldorado 230 kV	500
CAISO210	Eagle Mountain 230kV	600
CAISO219	Palo Verde – Devers 500 kV	50
WDT165	Vista 115 kV	325
WDT213	Garnet-Banning-Maraschino-Windfarm 115 kV	49
WDT230	Etiwanda 66 kV	44.55
WDT231	Mira Loma 66 kV	45.03
WDT243	Valley 115kV	190
WDT254	Valley 500 kV	309
WDT257	Devers 115kV	280
WDT258	Devers 115kV	200

**C. Blythe II Expansion Project**

The Blythe II Expansion Project will increase the size of the Blythe II Project to a total of 570 MW. The proposed primary point of interconnection is to Southern California Edison Company’s (“SCE”) proposed Midpoint 500 kV Substation via a radial 500 kV generation tie line. (Midpoint Substation is proposed to be constructed in the later part of 2011 to interconnect the Blythe II Project to SCE’s Devers-Palo Verde No. 1 and No.2 lines).

CONCEPTUAL ONE LINE DIAGRAM



**D. Power Flow Study**

The power flow cases were developed by SCE based on consistent system conditions and representations used for the evaluation of similar higher queued projects in the area of study. The study year 2013 is derived from the CAISO technical study guidelines which prescribe a future year analysis. The future year of 2013 results from the declared COD<sup>3</sup> year of generation projects higher in the CAISO interconnection queue and within the SCE system. Of all the higher SCE queued projects modeled in this Feasibility Study, the latest COD date is 2013. All generation projects in the CAISO queue with higher positions relative to this study were modeled in the various power flow cases. This methodology serves to identify all needed network upgrades and to facilitate assignment of project cost responsibility.

<sup>3</sup> COD is Commercial Operation Date

A WECC full-loop representation was used in the base cases. This includes the western United States, western Canada and the system of Commission Federal de Electricidad (CFE) of Baja, California, Mexico.

The system conditions under study for the year 2013 are:

- Case 1: Heavy summer load scenario without the Project (HS-pre)
- Case 2: Heavy summer load scenario with the Project (HS-post)
- Case 3: Light spring load scenario without the Project (LSP-pre)
- Case 4: Light spring load scenario with the Project (LSP-post)

#### **E. Post-Transient Voltage Study**

The power flow study voltage results were used as a screen to identify those contingencies that may require additional post-transient voltage studies. Single and double contingencies identified in the power flow to have a voltage drop in excess of 5% were selected for post-transient voltage analysis. The Post-transient voltage studies compare voltage deviations to the NERC/WECC/CAISO reliability requirements including the SCE guidelines of 7% for single contingency outages and 10% for double contingency outages and identify those outages which result in a criteria violation. Mitigation measures will be recommended for any criteria violation identified.

#### **F. Transient Stability Study**

For this Feasibility Study, a transient stability evaluation was performed to determine if further studies would be required for the addition of this project. Since a transient stability analysis was performed as part of the initial 520 MW Blythe II System Impact Study (SIS), which resulted in no adverse system conditions, the most critical outages was performed for this study. The evaluation was conducted for the following most critical contingencies affecting the area of interest:

- A 3 phase to ground fault at Devers 500kV Substation with normal 4-cycle fault clearance and removal of Devers – Palo Verde 500kV transmission lines No. 1 & No. 2
- A 3 phase to ground fault at Valley 500kV Substation with normal 4-cycle fault clearance and removal of Devers – Valley 500kV transmission lines No. 1 & No. 2

All outage cases were evaluated with the assumption that existing special protection systems (SPS) or remedial action schemes (RAS) would operate as designed, where required. If the additional 50 MW expansion resulted in any criteria violations, then a SIS would be required to evaluate the BEP II 50 MW expansion.

#### **G. Short-Circuit Duty Study**

It was determined that a short circuit duty study was not required for this generation project because the machine data for the BEPII 520 MW project has not changed with the addition of the BEPII 50 MW expansion project. There is no indication of change to the machine data for the generator and transformer. This would result in no changes to the short circuit duty in the area.



### III. STUDY RESULTS

#### A. Steady State Power Flow Study Results

Power flow studies did not identify any additional overloads to the CAISO Controlled Grid beyond those previously identified in the 520 MW System Impact Study under base case or any outage condition. In addition, the studies did not identify an additional base case or outage related voltage violations to the CAISO Controlled Grid. Consequently, no additional upgrades will be required to accommodate incremental loading associated with the incremental Blythe II 50 MW Expansion Project, based on the results of this study. A Deliverability Assessment will be performed by the CAISO to determine whether additional delivery upgrades are needed for the Project to be fully deliverable. If such delivery upgrades are identified and Caithness opts to be fully deliverable, a Facilities Study would be required to provide the cost and schedule estimate for such delivery upgrades.

#### B. Short-Circuit Duty Study Results

A short circuit duty study was not required for this generation project because the machine data for the BEPII 520 MW project has not changed with the addition of the BEPII 50 MW expansion project. There is no indication of change to the machine data for the generator and transformer. This would result in no changes to the short circuit duty in the area.

#### C. Transient Stability Analysis

The study did not identify any adverse transient stability conditions with the addition of BEPII 50 MW expansion. The stability plots are attached in Appendix A.

### IV. COST ESTIMATES AND SCHEDULE

Because no additional impacts requiring additional upgrades were identified, the cost and schedule estimates identified for the original BEPII project are applicable to the BEPII 50MW expansion as well. No additional incremental cost is incurred for the BEPII 50 MW expansion. The results of the Deliverability Assessment will identify whether any additional delivery upgrades are needed for the Project to be fully deliverable. If such delivery upgrades are identified and Caithness opts to be fully deliverable, a Facilities Study would be required to include the delivery upgrades in the cost and schedule estimate.

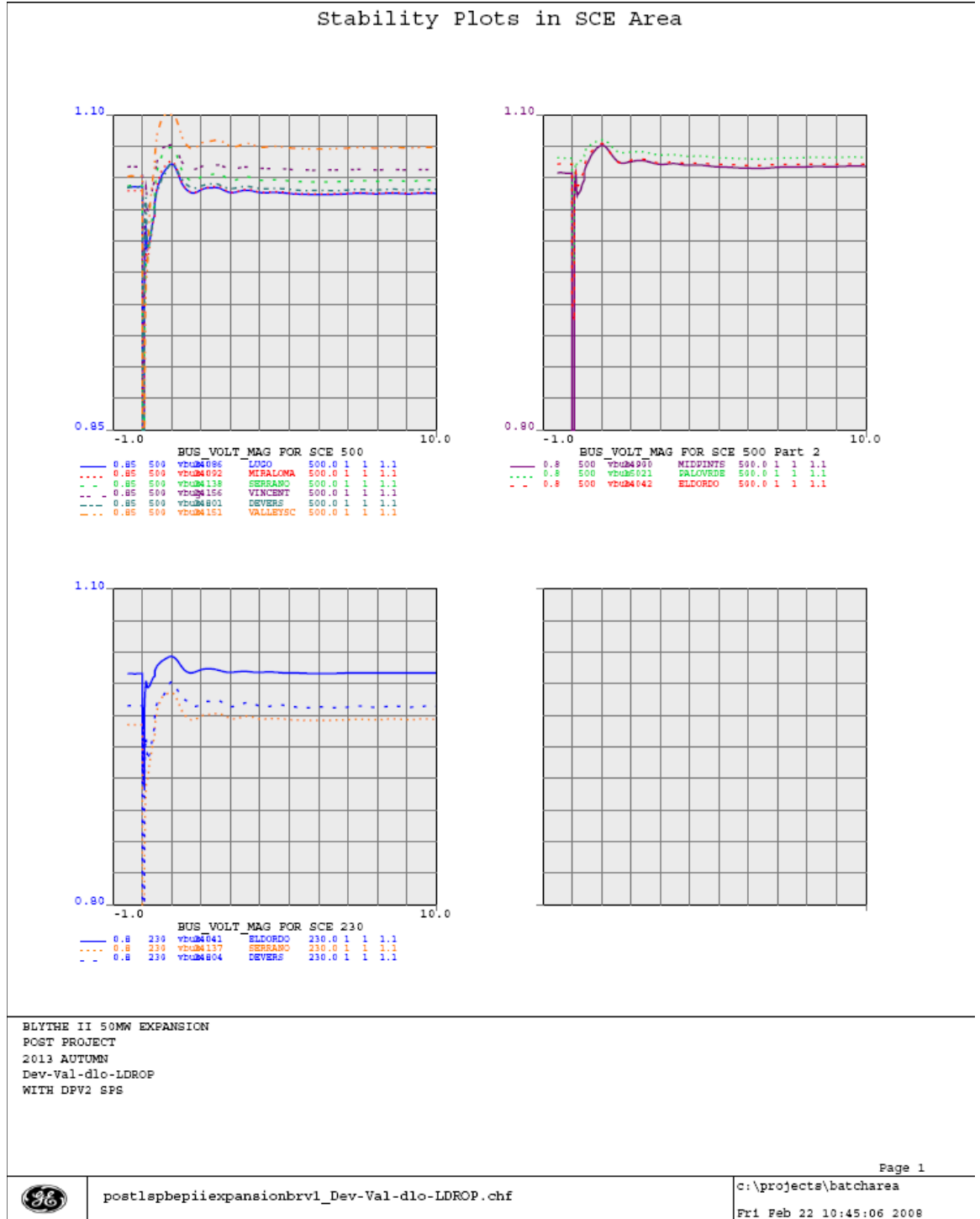
### V. CONCLUSION

Power flow, transient stability, and post-transient voltage analysis did not identify any adverse impacts, beyond those previously identified as part of the initial 520 MW Blythe

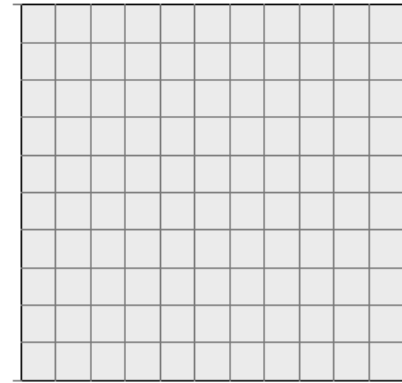
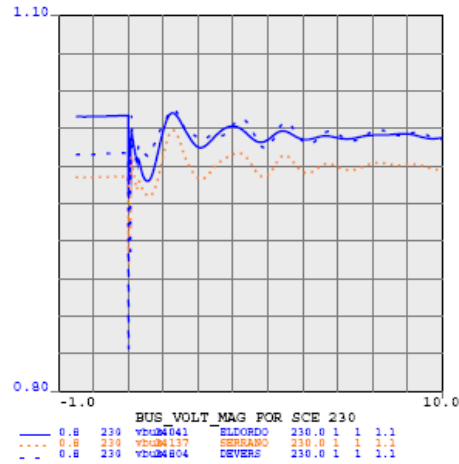
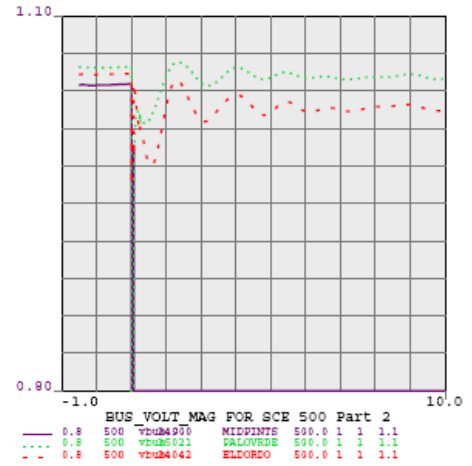
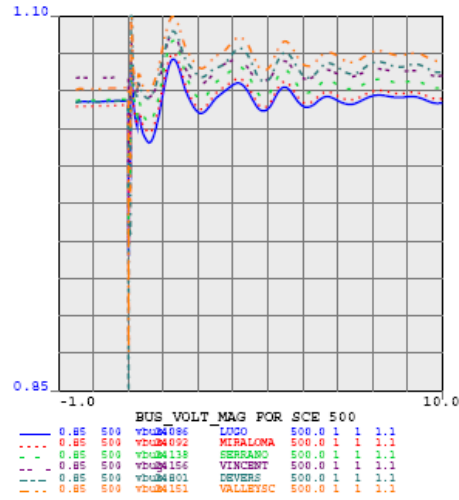


II System Impact Study (SIS). Consequently no additional upgrades, beyond those identified in the initial 520 MW Blythe II SIS, will be required for the 50 MW expansion of Blythe II. A deliverability assessment will be performed by CAISO to determine whether additional delivery upgrades are needed for the Project to be fully deliverable. If such delivery upgrades are identified and Caithness opts to be fully deliverable, a Facilities Study would be required to provide the cost and schedule estimate for such delivery upgrades. Otherwise, there is no need to perform any additional studies, both System Impact and Facilities Study, for this 50 MW Expansion Project.

Appendix A: Stability Plots



Stability Plots in SCE Area



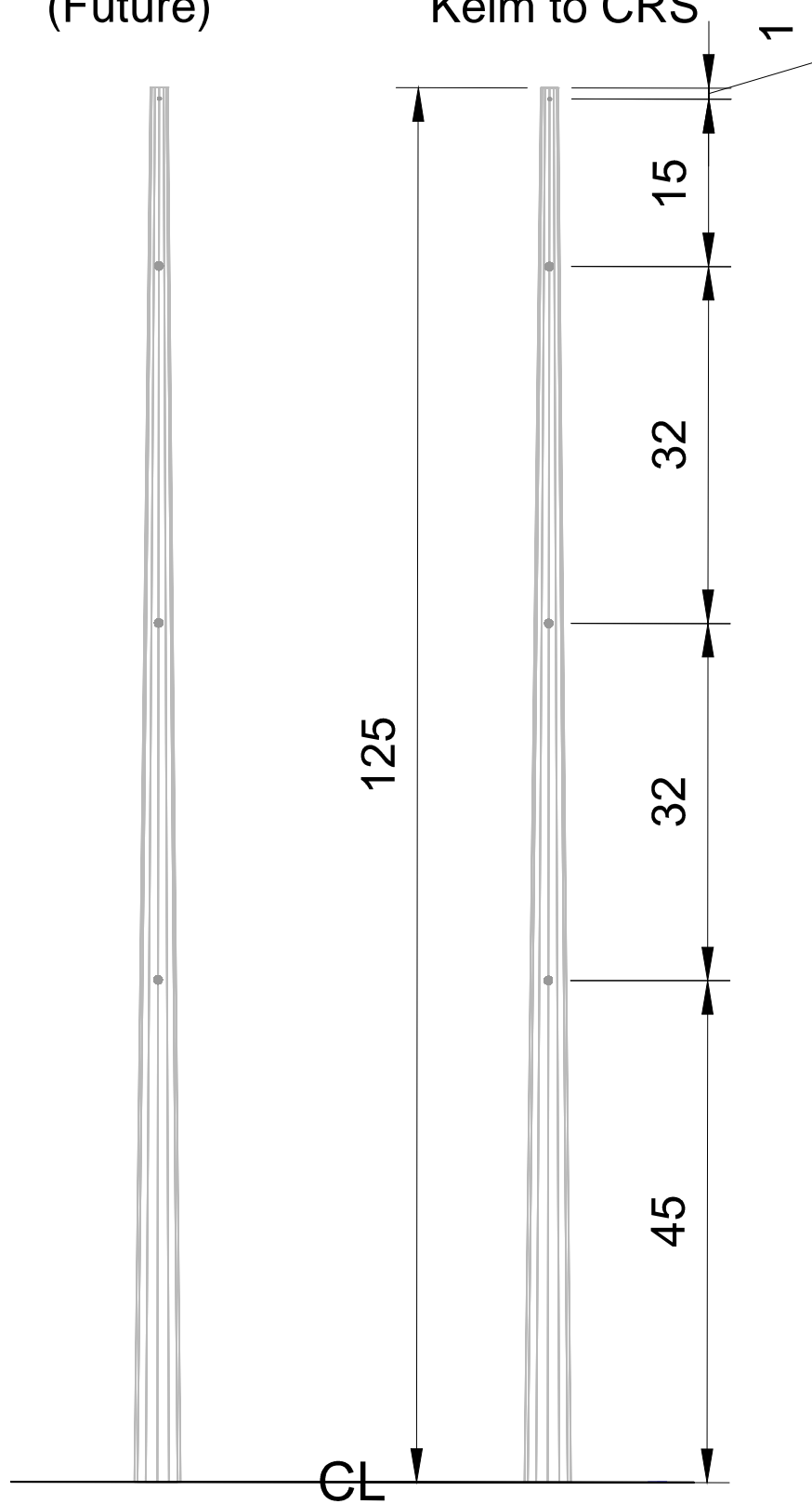
BLYTHE II 50MW EXPANSION  
 POST PROJECT  
 2013 AUTUMN  
 dpv12\_tr-5041-HS-9000-MWD\_S1  
 WITH DPV2 SPS



**ATTACHMENT 5**  
**DEAD END STRUCTURE DESIGN**

(Future)

Keim to CRS



Desert Southwest Transmission Line  
500-kV Tubular Steel Pole  
Deadend Structure - Double Circuit