Transmission Competitive Solicitation Questions Log
Question / Answer Matrix
Harry Allen to Eldorado 2015

No.	Comment Submitted	ISO Response	Date Q&A Posted
1	Will the ISO consider proposals that are not within the impedance range specified?	Yes. However, the benefits estimated and studies performed by the ISO are based on the impedance range specified. The ISO would need to consider if there are any adverse impacts for impedances outside of this range.	2/13/2015
2	Why is the ampacity of the series capacitor banks less than that required for the line conductor?	The transmission line is expected to have a life that exceeds fifty years. Over the life of the line it is expected that the full capability of the line will be needed, and the transmission towers and conductor are not easily upgraded. In the earlier part of this time horizon, the capability of the series capacitors will be sufficient, and they are expected to be easier to expand. Also, it is expected that they will need to be replaced during the fifty year time frame due to having an anticipated shorter life span.	2/13/2015
3	In order to properly plan for interconnection of the Harry Allen-Eldorado transmission line, can CAISO provide more guidance on how to locate the terminal structure for Harry-Allen-Eldorado transmission line outside the existing substations: a. Please provide the latitude, longitude and orientation for the terminal structure outside the Harry Allen Substation; b. Please provide the latitude, longitude and orientation for the terminal structure outside the Eldorado Substation; c. Which 500 kV bay position will the Harry Allen-Eldorado transmission line terminate at the Harry Allen Substation; and d. Which 500 kV bay position will the Harry Allen-Eldorado transmission line terminate at the Eldorado Substation.	The ISO has asked SCE for this information associated with Eldorado Substation and will update this response when we receive additional information. The ISO has asked NVE for this information associated with Harry Allen Substation and NVE's response was that it was technically feasible to terminate the line, but premature to say where to locate a dead end structure at this time. Eldorado Substation: The last transmission line structure should be approximately 300 feet south of Eldorado Valley Drive near the Eldorado Substation property line.	2/13/2015 3/20/2015

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4	Can you please provide the detailed Transmission System Planning study reports and specific load flow base cases that include the Harry Allen–Eldorado transmission line, including series compensation. In addition, if any WECC path project technical studies were conducted that include Harry Allen–Eldorado 500 kV line segments, can you please provide a link or more information on these studies as well.	The transmission planning studies are in Chapter 5 of the transmission planning report, and in stakeholder presentations which are posted on the ISO's website. The load flow base case used for the studies is on the ISO secure web site under Policy Driven Base Cases.	2/13/2015
5	Is protection of the line included in the scope of work?	No. Line protection equipment will be part of the equipment installed in the line terminal substations, and will be owned, operated and maintained by the substation owners.	2/13/2015
6	What are maximum fault clearing times required for multi-phase or single phase to ground faults on near-end, far-end, substation bus or breaker failure fault locations?	System protection is not included in the scope of this competitive solicitation. System protection requirements and associated fault clearing times shall be coordinated with the interconnection substation owners.	2/13/2015
7	Provide maximum three-phase and phase-to-ground fault current levels at the Harry Allen and Eldorado 500 kV buses without the proposed Harry Allen – Eldorado transmission line.	The ISO has requested this information from SCE and NVE and will update this response when more information is available.	2/13/2015
8	Does CAISO have a set of line rating assumptions for ambient temperature, maximum conductor temperature, wind speed, emissivity and absorptivity that should be used for conductor selection?	The ISO does not provide engineering details. Rather, the ISO provides functional specifications, in this case, continuous and short term summer and winter ampacities. It is up to the applicant project sponsor to select the line rating methodology it thinks best for this circumstance. Please note that one of the questions in the application does ask the applicant to provide assumptions (e.g. wind speed, ambient temperature, etc.) and rating methodology used to determine proposed facility ratings.	2/13/2015
9	In order to validate the reliable operation of the new proposed Harry Allen–Eldorado transmission line and to validate interaction with any existing Special Protection System (SPS), please provide additional	The Ivanpah Area SPS is an existing SPS in the area. However no interaction was identified with this SPS in the ISO transfer	2/26/2015

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	information on CAISO's technical assessment of any interaction of the proposed new series compensation for the Harry Allen–Eldorado transmission line with any existing SPS and coordination with other protection systems in the area.	capability analysis. A more detailed SPS review will be performed in the next ISO planning cycle.	
10	Are there any Special Protection Schemes associated with the proposed new Harry Allen–Eldorado line to be implemented in the scope of work?	There are no SPS associated with the proposed line to be implemented in the scope of work.	2/26/2015
11	Is there any benefit to bringing the Harry Allen-Eldorado transmission line in-service before May 2020?	Given that the successful project sponsor will not be known until close to the end of 2015, which would leave four years to permit and construct the project prior to 2020, this is a reasonably aggressive schedule, so advancing that schedule does not seem realistic. Schedule however is one of the key selection factors and demonstrating that the project could be in-service prior to 2020 provides greater assurance that it will be on-schedule for meeting the 2020 target date.	2/26/2015
12	If a Project Sponsor could propose a schedule that could bring the Harry Allen-Eldorado transmission line in-service date before May 2020, will there be any additional credit and if so how would that be evaluated and what credit would be given to the bid?	Please see the response to Q11 above.	2/26/2015
13	CAISO makes reference to "applicable NERC/WECC standards" in the Route Requirement. What specific standards and which specific requirements within these Standards will CAISO use to make determination whether a project proposal triggers common mode contingency? a. CAISO makes reference to Part 1.1.1 of Section E of Standard FAC 010-2.1, which seems to suggest that "two adjacent transmission circuits on a multiple circuit tower" will trigger a common mode contingency determination. How will CAISO determine if two adjacent	As indicated on page 6 of the ISO SOL Methodology For the Planning Horizon http://www.caiso.com/Documents/SystemOperatingLimitsMethodology-PlanningHorizon.pdf When establishing SOLs, starting with all Facilities in service, evaluation of the following Multiple Contingency identified in Regional Difference E1.1.1 through E1.1.5 of Reliability Standard FAC-010-2.1 is required:	2/26/2015

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	transmission circuits that are on separate towers trigger a common mode contingency? Will CAISO also use the WECC TPL-001-WECC-CRT-2.1 "Criteria", Requirement WR1, 1.1 to determine common mode outage of two Adjacent Transmission Circuits? WECC defines Adjacent Transmission Circuits to be two transmission lines that are within 250' of each other for more than 3 miles.	A non-three phase Fault with Normal Clearing on common mode Contingency of two adjacent circuits on separate towers unless the event frequency is determined to be less than one in thirty years. Adjacent Transmission Circuits are where both circuits are greater than or equal to 300 kV, and the circuits share a common right-of-way for a total of more than three miles, including – but not limited to – substation entrances, pinch points, and river crossings.	
14	If a project proposal triggers common mode contingency, does CAISO expect a project proponent to study the impact of reduction in reliability? If so, what specific studies/scenarios does CAISO expect a proponent study and submit? If mitigation is required, does CAISO expect the project proponent to provide mitigation? Does CAISO expect project proponent to develop mitigation plan unilaterally or in consultation with CAISO? Unilateral proposal from project proponent (such as if a new SPS is needed) may or may not be implementable if not consulted by CAISO? How will the CAISO determine if the proposed mitigation is acceptable?	The project proponent should demonstrate that transfer capability between southern Nevada and California is not significantly limited by a common mode contingency involving the Harry Allen-Eldorado 500 kV line and an Adjacent Transmission Circuit. Project sponsor can develop and submit mitigation options that can be considered by the ISO during the project sponsor selection process.	2/26/2015
15	For the proposed Harry Allen–Eldorado transmission line, what are the proposed line reclosing criteria, circuit breaker clearing times, and reclosing logic including time delays and reactive switching?	Please see the response to Q6 above.	3/05/2015
16	Please confirm that the minimum ampacity values in the functional specification are project requirements but that the approximate line impedance and approximate line length values are only estimates and are not project requirements.	The minimum ampacity values in the functional specification are project requirements. The approximate line impedance and approximate line length values are estimates that the ISO used for purposes of its studies of the benefits of the project. Proposals outside of the impedance range will be considered, and will be evaluated to	3/05/2015

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		confirm that the expected project benefits would not be reduced by the variance in impedance.	
17	Please confirm: Per Harry Allen – Eldorado Project Description and Functional Specifications (January 7, 2015), the following Governing Design and Construction Standards apply: a. GO95, NESC Code, applicable municipal codes. In addition, please comment whether comparable Nevada design and construction standards would apply.	The inclusion of GO95 was a "cut and paste" error. The design and construction Standards that apply are the NESC, and any other applicable local or municipal codes.	3/12/2015
18	The required conductor ratings specified in the Harry Allen – Eldorado Project Description and Functional Specifications (January 7, 2015), section F5.1, Transmission Line Specifications seem to be incompatible with the targeted impedance (found to be notably different to the power flow base case modelling used by CAISO). Please confirm the following transmission line specified attributes are correct: a. Minimum Line Continuous Ampacity - Summer: 3,800 Amps b. Minimum Line Continuous Ampacity – Winter: 3,800 Amps c. Minimum Line 4 Hour Emergency Ampacity – Summer: 5,200 Amps d. Minimum Line 4 Hour Emergency Ampacity – Winter: 5,200 Amps e. Minimum Line 30 Minute Emergency Ampacity – Summer: 5,600 Amps f. Minimum Line 30 Minute Emergency Ampacity – Winter: 5,600 Amps Approximate Line Impedance: (0.0005 to 0.0006) + j(0.011 to 0.015) pu (100 MVA base)	The impedance and line rating data are based on the Red Bluff-Devers #2 500 kV line but adjusted for line length. The line ratings and impedance data in the functional specifications are correct. The rating data in the production simulation model posted by the ISO with this project is incorrect. The ISO plans to repost that model with the correct data.	3/12/2015

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19	The Harry Allen – Eldorado Project Description and Functional Specifications do not include bus or line reactors, but they are modeled in CAISO power system models. Please provide more information on the number, size, and location of 500 kV bus shunt and/or shunt line reactors that according to the CAISO power system models appear to be either located at Harry Allen substation and/or on the project line (including orphaned shunts).	The ISO has requested SCE to perform a preliminary interconnection study on this project. One of the questions to be addressed in that study is the need for shunt reactors. At any rate, the shunt reactors would be installed inside the Eldorado and Harry Allen substations, and would not be part of the scope of the project in the solicitation process.	3/12/2015
20	Since WECC Path Ratings are regarded as System Operating Limits (SOLs), if any common mode outages of Harry Allen-Eldorado and another circuit are applicable for a Project Sponsor's submittal, does the CAISO expect the Project Sponsor to (additionally) demonstrate in their submittal, that any/all local WECC Path ratings in the Harry Allen–Eldorado vicinity will remain intact/unharmed by the Project?	The ISO does not expect that adding the new line will degrade the existing system capability, so the analysis suggested is not necessary at this point in time.	4/07/2015
21	In the CAISO's response to Question 14, the project proponent is asked to demonstrate "that transfer capability between southern Nevada and California is not significantly limited" by a common mode contingency involving the Harry Allen-Eldorado 500 kV line and an Adjacent Transmission Circuit. Does the CAISO have available through the Market Participant Portal, a suitable power flow case which models the Nevada-California transfer limit? Do any of the cases from the 2014-15 Transmission Planning Process model a high Nevada-California transfer condition?	The "Policy_2024_ISO_Peak_Commercial-Interest-portfolio" base case posted on the ISO Market Participant Portal is a suitable starting case for this analysis. Using this case, the project sponsor can perform a maximum transfer capability analysis between southern Nevada and California with and without the common mode contingency involving the Harry Allen-Eldorado 500 kV line and an Adjacent Transmission Circuit.	4/07/2015
22	In developing and testing proposals for the Harry Allen-Eldorado 500 kV line, should the project proponent also assume that the system	The power flow base case identified above includes a representative model for the Delaney-Colorado River 500 kV line with the shunt reactors out of service. For purposes of	4/07/2015

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	topology includes the Delaney-Colorado River 500 kV line (also a CAISO-approved project, expected to be in-service for 2020)? If so, can the CAISO please provide a representative model for the Delaney-Colorado River 500 kV line (including shunt line reactors identified in the Delaney-Colorado River functional specification), or identify a CAISO power flow case featuring such modeling?	developing and testing proposals for the Harry Allen-Eldorado 500 kV line this modeling is sufficient.	
23	The CAISO specifies that if project-associated reliability impacts are identified, the project proponent should submit necessary mitigation options during the project sponsor selection process (Question #14). Can CAISO clarify upon what the mitigation plan should include? Specifically, a. Is the mitigation limited to the system reinforcement(s) within the CAISO grid or should it also include system reinforcement(s) identified for neighboring/affected systems? b. Should a submitted mitigation option simply consist of proposing/identifying a potential transmission solution?	System reinforcement(s) can include within the CAISO grid or for neighboring/affected systems. Submitted mitigation option can consist of proposing/identifying a potential transmission solution.	4/07/2015
24	In the CAISO's 2014-15 Transmission Plan for the Valley Electric Association Area (VEA), the CAISO identifies as a mitigation measure for a number of contingency overload and voltage concerns, an operational action plan to "radialize the (VEA) 138 kV system after the first N-1 contingency". Can the CAISO please provide additional details and/or a change file for modeling this system adjustment?	Radializing the VEA system refers to opening of certain 138 kV lines after the first N-1 contingency in order to prevent overloading of facilities. This opening of lines depends on the facilities that constitute the N-1-1 contingency. The objective is to feed some part of the load from independent sources after the first N-1 contingency, so that the next N-1 contingency will result in a consequential loss of load instead of a facility overload or voltage issues.	4/17/2015

California ISO
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25	For the CAISO's 2014-15 TPP 2024 Heavy Summer (Reliability) Cases, can the CAISO please confirm the following: a. Many of these cases show a second Westwing-Mead 500 kV circuit (Area 14, connecting busses #19038-14005); should one of these circuits be removed from the case, and if so, which one? b. Many of the 2024 summer peak cases show in-service, two Northwest 500/230 kV transformers (Area 18, bus #18451); can the CAISO please confirm with NVEnergy whether this representation is correct?	The circuit connecting bus #19038 and bus #14005 should be removed. The policy-driven base case (peak Commercial Interest portfolio) which was used for the Harry Allen – Eldorado study represents the correct model. NV Energy confirmed that only one 500/230 kV transformer should be modeled in-service at Northwest in the 2024 case. Per NV Energy, the second transformer is a conceptual project.	4/17/2015
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