



California ISO
Shaping a Renewed Future

**Addressing Affected System Impacts of
Generator Interconnection:
Processes and Principles
Paper #2**

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Addressing Affected System Impacts of Generator Interconnection: Processes and Principles – Paper #2

1 Executive Summary

The interconnection of generation facilities can cause reliability concerns not only on the electric system to which the generator will directly interconnect, but potentially to adjacent electric systems (“affected systems”). The ISO tariff addresses these situations at a high level. Through this second paper on the subject the ISO is continuing its stakeholder initiative to add further detail to the ISO’s Business Practice Manual for Generation Interconnection and Deliverability Allocation Procedure (“GIDAP BPM”) regarding the processes and principles for addressing affected system impacts of generator interconnections, add further clarity to the principles that will be added to the GIDAP BPM, and discuss stakeholder suggestions for longer-term initiatives. This second paper builds on the materials discussed in the first paper that was posted on August 5, 2013. It describes the ISO’s thinking on processes and principles and includes proposed language for the GIDAP BPM. The ISO will hold a stakeholder conference call on this paper on November 12 and stakeholders will have an opportunity to provide written comments by December 3. After this second round of stakeholder comments, the ISO will then include the proposed processes and principles in the ISO’s BPM change management process. Stakeholders will have additional opportunities to comment on the proposed provisions during the BPM change management process. The ISO envisions that these enhancements will be in place in early 2014.

Section 2 of this paper describes the stakeholder process and schedule in more detail. Section 3 provides an overview of the topic. Section 4 describes the stakeholder comments that have been received on the August 5, 2013 paper. Section 5 describes the changes made to the August 5, 2013 paper. Section 6 provides the proposed GIDAP BPM language. Appendix A provides a summary of the written stakeholder comments that have been received and the ISO’s responses to those comments.

2 Stakeholder Process and Schedule

Following the publication of this paper, the ISO will hold a stakeholder conference call to discuss the processes and principles proposed to be incorporated in the GIDAP BPM language. Stakeholders can submit written comments to the ISO on this paper and on the conference call discussion.

After the ISO has received the written stakeholder comments on this paper, the ISO will develop draft GIDAP BPM language which will then be included in the ISO’s BPM change management process, which provides additional opportunities for stakeholders to comment.

The schedule is provided below.

Aug 5	ISO posts first paper
Aug 23	Stakeholder conference call
Sept 12	Stakeholder written comments due
Oct 31	ISO posts second paper that includes proposed GIDAP BPM language
Nov 12	Stakeholder conference call
Dec 3	Stakeholder written comments due
Jan 9	Draft GIDAP BPM language is included in ISO's change management process
Jan/Feb	Stakeholders have two additional opportunities to provide input during BPM process

3 Introduction

As part of the generator interconnection process, the ISO must regularly coordinate with adjacent electric systems in order to facilitate studies of potential reliability concerns caused by the interconnection of generation in the ISO queue to the ISO controlled grid. Similarly, generators interconnecting to the facilities of transmission owners in adjacent electric systems may cause potential reliability concerns on the ISO controlled grid.

The ISO tariff defines an “affected system” as an electric system other than the ISO controlled grid that may be affected by the proposed interconnection,¹ and an “affected system operator” as the entity operating an affected system. For the purposes of this paper, which addresses both affected system (as defined in the ISO tariff) impacts, and situations where the ISO controlled grid is, or could be, impacted by interconnections on adjacent electric systems, the ISO will also be referred to as an affected system. In the last few years, the ISO has worked with affected systems under a variety of interconnection circumstances and developed processes and principles to address the impacts of generator interconnections. The purpose of this stakeholder initiative is to present these principles and processes to stakeholders for consideration and eventual incorporation into the ISO's GIDAP BPM.

The ISO tariff provides a general framework for addressing the impact on affected systems of generation projects in the ISO interconnection queue. The tariff states that, in the initial project study stages, the ISO will:

¹ Note that the definition includes an electric system that *may be* affected, without necessarily having made a determination that it *is* in fact affected by the interconnection in question. In the discussion below the ISO frequently uses the phrase “potentially affected system” to make it explicit that the ISO is including systems for which actual impacts may not yet have been determined.

- Notify potential affected system operators that could be impacted by a generator interconnection;
- Coordinate the conduct of studies to determine possible impacts; and
- Include potential affected system operators in all customer meetings.²

However, the ISO does not comprehensively study the impacts of generator interconnections on affected systems, for several reasons. First, the ISO does not have detailed information about affected systems on a transmission-element level, nor does the ISO know the details of the various reliability and operating criteria applicable to the affected systems. Second, because the operation of transmission systems changes over time along with NERC reliability standards, the ISO cannot presume to know all of the impacts of these changes on affected systems. Consequently, the interconnection customer is responsible for:

- Cooperating with the ISO in all matters related to the affected system studies;
- Signing a separate study agreement with the affected system operator so that potential impacts on the affected system can be evaluated; and
- Paying for necessary studies and any upgrades necessary to mitigate the impacts of their interconnection on the affected system.³

Further, the affected system operator is required to cooperate with the ISO on all matters related to the conduct of studies and modifications to the affected system.⁴

The interconnection customer is obligated by the terms of the ISO's relevant generator interconnection agreement (large or small) to enter into an agreement with the affected system operator, which must specify the terms governing payments for studies and mitigation, if required, to be made by the customer to the affected system owner, and repayment by the affected system operator.⁵

The ISO tariff does not specifically address the process or policies involved when a generator interconnecting to an adjacent electric system impacts the ISO controlled grid. However, the Federal Energy Regulatory Commission ("FERC"), in its series of orders on standardized generator interconnection agreements and procedures, commencing with Order No. 2003, articulated the principle that interconnection customers on adjacent electric systems are obligated to upfront fund upgrades on the affected system for which they would be eligible for reimbursement by the affected system operator.⁶

² See, e.g., ISO Tariff Appendix Y, Section 3.7; ISO Tariff Appendix DD, Section 3.7.

³ See, e.g., ISO Tariff Appendix Y, Section 3.7; ISO Tariff Appendix DD, Section 3.7.

⁴ See, e.g., ISO Tariff Appendix Y, Section 3.7; ISO Tariff Appendix DD, Section 3.7.

⁵ See, e.g., ISO Tariff Appendix BB, Article 11.4.2; ISO Tariff Appendix FF, Article 5.3.2.

⁶ *Standardization of Generator Interconnection Agreements and Procedures*, Order No. 2003, FERC Stats. & Regs. ¶ 31,146, at P 738-39 (2003) ("Order No. 2003"), *order on reh'g*, Order No. 2003-A, FERC Stats. & Regs. ¶ 31,160, at

The existing ISO tariff language and guiding principles in Order Nos. 2003, *et seq.* provide a legal framework for the ISO to develop processes and principles addressing affected system issues.

In the first paper, the ISO expressed its belief that no additional tariff language is needed to implement the general principles of: 1) coordination between parties on system studies and study results; 2) cooperation between affected system operators and interconnection customers; and 3) making arrangements for needed network upgrades, upfront funding for such upgrades, and reimbursement. Developing GIDAP BPM language to capture these implementation steps will provide greater clarity for interconnection customers as they move through the ISO's process, as well as clarifying the ISO's expectations if the interconnecting customer is interconnecting to an adjoining system. As discussed below, some stakeholders commented that the tariff should be amended to address the topics proposed for BPM language. While this might be an option to consider in future stakeholder initiatives, the ISO continues to believe that providing detail about affected system coordination in the BPM will be sufficient as a first step to address the process and policy issues that have been developed as the ISO, participating transmission owners, interconnection customers and affected systems have worked together to resolve system impacts. In addition, even if the ISO amends its tariff to incorporate affected system issues, any obligations set out in the tariff would only apply to affected systems that have voluntarily agreed to those obligations; this would typically take the form of a pro forma agreement.

4 Stakeholder Comments on August 5, 2013 Paper

Written stakeholder comments on the August 5, 2013 paper were due to the ISO on September 12, 2013. The written stakeholder comments that were received are summarized in the table in Appendix A. The table includes the ISO's responses to the written comments submitted by stakeholders.

In the comments, stakeholders made many suggestions, raise concerns and sought clarification on a wide variety of topics. For the purposes of consideration and response, the ISO has grouped the comments into several general themes. These themes are described below, along with the ISO's view regarding the suggestions.

1. Tariff language is needed as BPM language is not enough.

Several stakeholders expressed general concerns that the ISO's proposed GIDAP BPM revisions should be captured in the tariff, but did not provide specific concerns or topics that would require tariff modification. For example, the Six Cities argued that the ISO should remain open to making appropriate tariff modifications to the extent that policies or principles "impact

PP 636-39, *order on reh'g*, Order No. 2003-B, FERC Stats. & Regs. ¶ 31,171, at PP 35, 41-42 (2004), *order on reh'g*, Order No. 2003-C, FERC Stats. & Regs. ¶ 31,190, at P 9 (2005).

rates, terms and conditions,” but did not provide further explanation as to how the policies and principles have such an impact. The ISO, of course, would recommend tariff modifications if its proposals did have an impact on the rates, terms and conditions of the services provided by the ISO under its tariff, but the affected system coordination activities address in this initiative do not rise to this level. Similarly, the CPUC suggested that the ISO identify and prioritize issues that require more than BPM solutions, but did not provide further information as to what the high priority issues are that require more than BPM solutions. Large Scale Solar (LSA) also opined without further detail that affected system policies should be captured in the tariff.

On the other hand, some stakeholders who advocated tariff revisions suggested possible modifications that appear to be overbroad, or would limit the ISO (and other participants’) flexibility in dealing with affected system issues under a variety of situations. For example, SDG&E, PG&E and SCE (“the IOUs”) recommended that the ISO capture in the tariff criteria used to determine the reasonableness of impacts on affected systems. According to the IOUs, this tariff language should include the study methodology to be used by the ISO in addressing affected system impacts.

In response to these suggestions, the ISO would note that the details of its generation interconnection study methodologies are not captured in the tariff now, and the same is true of studies conducted in the transmission planning process. Rather, these details are provided to participants in the various processes, and also are described in BPMs and other publicly-available documents. Furthermore, that ISO believes that there needs to be flexibility in addressing affected system issues, particularly with respect to study results. Finally, while the ISO and the IOUs work collaboratively on the interconnection studies for generation seeking to interconnect to the ISO, and also when generation in neighboring systems may cause impacts on the ISO controlled grid, the ISO does not- and cannot- conduct studies on adjacent systems. Thus, it does not seem likely that adding specific tariff criteria about the reasonableness of study results addressing impacts on affected systems would, in any way, assist in coordinating study efforts with parties not subject to the ISO tariff. The ISO welcomes further clarification on this point in the second round of stakeholder comments.

2. ISO should lead and not just coordinate studies.

LSA and IEP state that the ISO’s current affected system procedures are “fundamentally flawed” because the ISO’s coordination procedures task the interconnection customer to make arrangements with the affected systems for impact studies to be conducted. LSA suggests that the ISO must take a lead role in coordinating study processes because interconnection customers are in the weakest position to do so.

The ISO is open to specific suggestions as to how the affected system study process can be better coordinated. Indeed, as discussed in the next section, voluntary coordination between neighboring systems could be addressed through agreements. However, the responsibility of

the interconnection customer to ensure that affected system impacts have been addressed before synchronization to the ISO controlled grid is embodied in the Order 2003 generation interconnection procedures.

The ISO has developed the policies and procedures under discussion in this initiative to assist interconnection customers in carrying out this responsibility, and to further consider the circumstances under which a generator could proceed with interconnection when affected system coordination has been unsuccessful. The ISO is open to providing further clarity in the proposed GIDAP BPM language as to the affected system notification process and milestones with which affected systems could voluntarily use to provide better study coordination with the ISO's interconnection process. However, the ISO is not in a position to coordinate individual interconnection issues arising out of affected system studies for all interconnection customers, but will assist interconnection customers to the extent possible

3. ISO should expand scope and undertake broad initiative.

The IOUs recommend that this initiative be expanded to include transmission interconnection and large customer load interconnection procedures. They also suggest that these topics could be addressed in a new stakeholder initiative. The ISO agrees that these issues are periodically addressed on a case-by-case basis during the transmission planning process and would benefit from a separate stakeholder initiative in which to develop policies and procedures for these interconnections. However, although there might be affected system implications with such interconnections, the ISO does not believe that this initiative should be broadened to include such topics.

The IOUs suggest that the ISO broaden the scope of this initiative to include tariff language regarding the roles and responsibilities of PTOs, the ISO and generator interconnection customers. It should be noted that roles and responsibilities are described in the ISO's generator interconnection tariff appendices, and that putting language about the roles and responsibilities of affected systems in the ISO's tariff is not practical because neighboring systems are not subject to the ISO tariff. However, such concepts could be addressed in bilateral agreement negotiation discussed in the next section. Similarly, the IOU's suggestion that cost estimates be made consistent between the PTOs and neighboring systems can be addressed through contract negotiations.

4. ISO should negotiate reciprocity agreements with affected systems.

The IOUs, SMUD and IEP, among others, suggest that the ISO and affected systems should enter into agreements- or memoranda of understanding- that would describe a specific coordination process, data sharing, protection of confidential information and possible joint evaluation of generator interconnection requests. The IOUs argue that such "reciprocity" agreements would provide benefits to both the ISO and neighboring systems, and could apply in both situations: where the neighboring system is impacted by generation in the ISO queue, and where the ISO is an affected system.

The ISO agrees with this suggestion. Indeed, bilateral, voluntary arrangements between the ISO and neighboring systems may be the only approach by which rights and obligations are placed on all participants in affected system procedures. Of course, such agreements are outside the scope of this initiative, and the ISO does not believe that the suggested GIDAP BPM language should be supplanted by the possibility that these arrangements could ultimately be developed. In addition, developing and negotiating bilateral agreements will be very time-consuming and will require the wholehearted support and cooperation of the neighboring affected system. The ISO seeks further input on the possibility of structuring bilateral agreements, and would particularly appreciate comments from the neighboring systems who are participating in this initiative as to whether this might be a workable approach for affected system coordination.

5. How studies should be done- methodology and coordination process concerns.

Many stakeholders raised specific questions and concerns about affected system studies and the coordination process that the ISO described in the first paper. The ISO has attempted to answer questions in the stakeholder comment matrix attached to this paper, and has also incorporated suggested clarifications in the proposed GIDAP BPM language set forth in the next section. For example, several parties suggested that the ISO should describe how the ISO's affected system coordination policies interface with the WECC path rating process. The ISO has also clarified that WDAT project information is part of the generator interconnection process and is within the scope of the affected system coordination arrangements.

5 Changes made since August 5, 2013 Paper

In response to stakeholder comments, the ISO has made several changes to the processes and principles that were discussed in the August 5, 2013 paper. These changes are summarized below.

- Clarified the formal steps in the coordination process and how the ISO will deal with recalcitrant neighboring systems.
- Clarified how the ISO's affected system coordination policies interface with the WECC path rating process.
- Clarified that WDAT project information is part of the generator interconnection process, is within the scope of the affected system coordination arrangements, and PTO WDAT projects are included within the ISO studies and included within the ISO reports and base cases.
- Will post on its public web site a listing of affected systems by study area that includes potentially affected systems associated with each study area.
- Will ensure that short-circuit models are made available to affected systems.

- Will work with affected systems on congestion management and other mitigations that may be part of the ISO's cluster studies so there is no misunderstanding about how impacts can be addressed.
- Will provide potentially affected system operators with the ISO's interconnection study scope and schedule around which coordination will be driven to the extent possible.
- Will update and advise interconnection customers in the study report as to which systems their interconnection is potentially affecting at each study phase.
- Will provide potentially affected system operators with the timeline information from the ISO's interconnection process with possible study coordination dates during the ISO's Phase II study process to facilitate timely resolution of affected system issues.
- Will review affected system agreements, the reasonableness of studies conducted and study results, and other issues on a case-by-case basis if requested by an affected system operator (the previous paper stated that the ISO would do this for only the interconnection customer).
- Will notify the neighboring system operator that a facilities construction agreement will be executed and share the agreement with the neighboring system operator, upon request.

As discussed above, several stakeholders requested that the ISO significantly expand the scope of this initiative to include fundamental changes to the current processes and principles, which would require amendments to the ISO tariff in addition to changes to the GIDAP BPM.⁷ The ISO believes that it is important to document the current processes and principles in the GIDAP BPM and the initiative does not contemplate the need for tariff language at this time. Some of the scope changes suggested by some stakeholders would require significant resources and a lengthy stakeholder process to address. Before the ISO will consider expanding the scope of this initiative, the ISO believes that it should obtain stakeholders' views on the priority of this possible expanded scope relative to other topics in the 2014 Stakeholder Initiatives Catalog stakeholder initiative, which is currently underway with the draft catalog posted on October 4, 2013 and a conference call held on October 10, 2013. In the meantime, the ISO will continue to work on documenting the existing processes and principles and putting them in the GIDAP BPM, as reflected in the proposed language set forth below. Stakeholders are encouraged to rank how important this potentially expanded topic is relative to other topics under consideration in the 2014 Stakeholder Initiatives Catalog, with the understanding that there may be trade-offs depending on which topics are eventually pursued (the Catalog initiative can be found at the following link:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/StakeholderInitiativesCatalogProcess.aspx>). Stakeholder suggestions regarding the scope of policy work on affected systems

⁷ Examples of these suggested changes are putting the ISO in a lead position for development of all studies rather than a coordination role, possibly conducting joint studies rather than having each affected system do its own studies, and developing and executing reciprocity agreements between affected system operators.

issues represent a major undertaking that, if chosen, would dominate transmission policy resources for a significant period of time. The ISO is scheduled to post a revised Catalog on November 5. Rankings from stakeholders are due on November 22. The ISO will post a final Catalog on December 17.

6 Proposed GIDAP BPM Language

This section provides the proposed GIDAP BPM language. It is separated into two categories: neighboring systems as affected systems, and the ISO controlled grid as an affected system.

Neighboring Systems as Affected Systems

1.1 Affected System Description

The ISO Tariff defines Affected Systems as an electric system other than the ISO controlled grid that may be affected by the proposed interconnection. For the purposes of the ISO's GIDAP process, this means any adjoining or electrically interconnected balancing authority area or transmission system that may be electrically close enough to a proposed generation project or cluster of projects such that the Interconnection, Network Upgrades, or the operation of the proposed generator could cause reliability or safety impacts on the neighboring system.

1.2 Affected System Listing and Notification

The ISO will maintain a listing of affected systems by study area that lists the potentially affected systems associated with each study area and will make this information publicly available on its website. The listing will contain contact information for the potentially affected system operators and will be used by the ISO to systematically identify potentially affected system operators to be notified for all projects in the defined study area.⁸ The ISO identifies potentially affected systems by general electrical and geographic proximity relative to each study area. This listing will also be used as part of the ISO's queue management process to check that the interconnection customer has contacted and worked with all potentially impacted affected system operators prior to achieving commercial operation for their projects.

The ISO will notify potentially affected system operators at the beginning of the cluster or independent study process for each interconnection request so that the potentially affected system operator has the opportunity to participate in scoping meetings and conduct system impact studies in parallel with the ISO's GIDAP process. The ISO will only provide

⁸ The ISO requests feedback from stakeholders on providing contact information in a public posting as some stakeholders may have confidentiality concerns. For example, an affected system may have a concern regarding providing a name of a person, but perhaps general contact information such as a telephone number could be provided.

interconnection customer contact information to affected system operators that are identified as potentially affected systems due to the interconnection request. The ISO will also provide potentially affected system operators, at the time that the first notification is given, with the ISO's interconnection study scope and schedule around which coordination will be driven to the extent possible.

Affected system operators also will be notified when study plans and base cases are posted on the ISO secure website using the market participant portal.

At the scoping meeting, the ISO will advise the interconnection customer as to which systems their interconnection is potentially affecting and will inform the applicable interconnection customers that their contact information has been or will be provided to affected system operators. The ISO will also update and advise interconnection customers as to which systems their interconnection is potentially affecting at each study phase in the study report.

The ISO will provide affected system operators notice when individual and group study results are available, and invite them to attend each study phase results meetings for each project that may impact their electric systems. At the same time as the Phase I results meetings, the ISO will again provide the potentially affected system operators with the timeline information from the ISO's interconnection process with possible study coordination dates during the ISO's Phase II study process that would facilitate timely resolution of any affected system issues.

1.3 Study Process and Methodologies

Affected system operators may enter into non-disclosure agreements with the ISO to access base case and study plan data (see the template for the reciprocal non-disclosure agreement on the ISO website). The ISO will work with the PTOs and affected system operators to facilitate the exchange of network models and other information needed for the potentially affected system operators to assess impacts on their systems.

Six months prior to its generating unit in-service date, an interconnection customer must provide documentation to the ISO confirming that the affected system operators have been contacted, that any system reliability impacts have been addressed (or that there are no system impacts), or that the interconnection customer has taken all reasonable steps to address potential reliability system impacts with the affected system operator but has been unsuccessful. The interconnection customer should be coordinating with the ISO through the following web address: QueueManagement@caiso.com. If the interconnection customer has been unsuccessful in resolving affected system issues, the documentation must provide sufficient details about all contacts and other attempts to work with the affected system and address system impacts. The ISO will not allow generation projects to be energized on the ISO controlled grid until affected system issues are resolved. However, if the interconnection customer's reasonable coordination efforts with the affected system operator do not result in the affected system operator moving forward on a timely and reasonable basis, and the ISO determines that possible impacts on the affected system can be mitigated within the ISO

controlled grid, the ISO will advise the affected system operator and the interconnection customer that the interconnection can proceed without affirmative agreement by the neighboring system.

If an interconnection customer makes a unilateral decision that an affected system agreement is not necessary and does not reasonably attempt to address the issue with the potentially affected system operator, the ISO will advise the customer that the interconnection will not be allowed to move forward with synchronization and commercial operation unless the issue is resolved, including a demonstration by the interconnection customer that the customer has made reasonable efforts to obtain concurrence by the affected system operator that there is no reliability impact. If requested by the interconnection customer or the affected system operator, the ISO will review affected system agreements, tendered to interconnection customers and made available to the ISO, to determine whether they contain terms and conditions that could be problematic for the ISO.

If requested by the interconnection customer or the affected system operator, the ISO may review the reasonableness of the studies conducted and study results issued by the affected system operator. The ISO will review other issues on a case-by-case basis, either upon the request of the interconnection customer or the affected system operator, or where the ISO deems it appropriate.

ISO Controlled Grid as an Affected System

1.1 Notifying the ISO and Affected PTO(s); Study Process

Once an interconnection customer has entered the neighboring system operator's interconnection process and if it appears that there could be reliability impacts on the ISO controlled grid, the ISO and affected PTO(s) should be notified by the neighboring system operator so that study data can be exchanged and studies coordinated. In addition, interconnection customers in the neighboring system should take reasonable steps to contact the ISO and affected PTO(s) and enter into a study agreement with the PTO to identify reliability system impacts. During the study process, the ISO and PTO will seek to work with the neighboring system, if practicable, to which the generation project seeks to interconnect to evaluate cost effective and efficient mitigation solutions for reliability impacts on the ISO controlled grid. The ISO will review and concur with impact studies prepared by the PTO. If requested by the generation project owner or the neighboring system operator, the ISO will review impact studies prepared by the neighboring system operator.

1.2 Reimbursement for Reliability Mitigation Solutions on ISO Controlled Grid

Funding and reimbursement for reliability network upgrades on the ISO controlled grid will be in accordance with the applicable provisions of the ISO tariff regarding generator

interconnection.⁹ The ISO will use the applicable tariff reimbursement scheme for reliability upgrades to PTO systems, depending on the date on which the interconnection customer on the neighboring system contacted the ISO and the PTO whose system potentially could be impacted or entered into a study agreement with the contacted PTO, whichever was later.

1.3 Facilities Construction Agreement

If reliability system impacts and mitigation solutions are identified, the interconnection customer must enter into the ISO's facilities construction agreement, which is a three-party agreement involving the interconnection customer, the ISO and the affected PTO. The ISO will notify the neighboring system operator that a facilities construction agreement will be executed to address system impacts on the ISO controlled grid and will share the agreement with the neighboring system operator, upon request, once it has been developed and executed.

Prior to synchronization, the neighboring system operator should verify that the ISO and potentially impacted PTO(s) have been contacted and that steps have been taken to address any reliability system impacts.

⁹ Under the current ISO tariff, generator interconnection is addressed in Appendices S through W, Y, Z, and BB through HH.

Affected Systems Initiative – Written Stakeholder Comments¹⁰

1. Neighboring Systems as Affected Systems

Company/Person Submitted By	Stakeholder Comment	ISO Response
Western Area Power Administration – Sierra Nevada Region	ISO should start a formal study process of cumulative impacts to COI vs. NCH Nomogram due to addition of cluster generation in CAISO footprint and that all affected parties be part of the study process.	COI is a WECC Path and impacts can be studied through the path rating process.
Calpine Corporation	ISO should incorporate in BPM special provisions that are triggered by WECC for large interconnections that could affect flows over Rated Paths; which require broad notice and involvement of any and all participants in the WECC.	The ISO agrees with this comment and has proposed GIDAP BPM language addressing the WECC path rating process.
California Department of Water Resources, State Water Project	Affected Systems should not be able to use that an entity that once provided service under a contract for compensation to force that entity to provide the service indefinitely at its own cost.	Existing contract rights are outside the purview of this initiative.
California Public Utilities Commission staff	ISO should provide information on extent that affected system impacts problems are occurring. ISO should identify and prioritize issues that require more than BPM solutions. ISO should address how early, formal coordination can be addressed. ISO should address process for dealing with “recalcitrance” entities. ISO should pursue identifying cost-effective solutions across all systems. ISO should provide clarity regarding how solutions interact (or do not interact) with congestion and WECC path rating issues.	As noted in the second paper, the ISO does not believe that the issues involving more than BPM solutions are within the scope of this initiative. However, consistent with these suggestions, the ISO has attempted to add further clarity to proposed GIDAP BPM language that address the formal steps in the coordination process and how the ISO will deal with recalcitrant neighboring systems. We have also added language about the WECC path rating process. The ISO’s transmission planning process does exactly what is suggested in this comment regarding cost effective solutions across all systems. Neighboring systems are expected to participate, and the ISO will participate in their processes. In

¹⁰ Written stakeholder comments were due September 12, 2013 on the “Addressing Affected System Impacts of Generator Interconnection: Processes and Principles” that was posted on August 5, 2013, and supplemented by the presentation and discussion during the August 23, 2013 stakeholder web conference.

Company/Person Submitted By	Stakeholder Comment	ISO Response
		the interconnection process, the ISO coordinates with adjacent systems so that they are aware of any potential impacts from generation interconnection projects within the ISO controlled grid.
Pacific Valley, LLC	What is process to determine whether mitigation can be done on ISO grid? Would ISO be relying on study results run by affected systems or would ISO be generating its own studies? What is timetable to allow this well before deadline and as early as possible so as to enable interconnection customer to determine economic viability of project in event mitigation costs are high? Would process include ISO formally commenting on affected system study results and assumptions? If ISO believes that mitigation is not required or can be performed in ISO grid, do affected systems need to agree?	For constraints identified on affected systems in the ISO deliverability study, the ISO and PTO will identify mitigation on the ISO system. If more cost effective and feasible mitigation alternative can be identified on the affected system then the ISO, PTO, and generation project sponsors can attempt to work with the affected system to study that mitigation. If impacts in addition to those identified in the deliverability study are identified on the affected system, the ISO will determine if congestion management can be utilized to mitigate that impact. If congestion management is not a feasible mitigation then, upgrades on the ISO system will be considered until it is determined that upgrades on the affected system are expected to be more cost effective. In any case, ISO studies do not comprehensively study affected systems so they cannot be relied upon to identify all possible impacts or mitigations. The ISO will coordinate with affected systems on their studies including providing input data regarding the ISO system and commenting on the affected system studies as requested.
Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, the “Six Cities”)	ISO should remain open to development of appropriate revisions to ISO Tariff to extent that principles and/or procedures documented materially impact rates, terms, and conditions. ISO should not undertake responsibility for implementing mitigating measures to compensate for the failure of an affected system to resolve potential impacts on its system. Policies governing affected system impacts would benefit from enhanced regional	As discussed in the second paper, the ISO does not believe that the affected system policies proposed to be added to the GIDAP BPM impact the rates terms and conditions of the services that the ISO provides. However, we remain open to specific stakeholder input on that subject. The ISO does not take responsibility for the failure of an affected system to

Company/Person Submitted By	Stakeholder Comment	ISO Response
	<p>coordination and, perhaps, the development of common tariff provisions or procedures. ISO should consider whether closer integration with WECC study procedures is appropriate. ISO should require interconnection customers to provide drafts of affected system agreements to ISO before agreements are executed so ISO can ensure ISO grid will not be adversely impacted.</p>	<p>act unless there is reasonable assurance that congestion management and NQC reductions will address reliability and deliverability to ISO load issues and the affected system has not acted reasonably in cooperating with the generator potentially causing problems. The ISO will address the WECC path rating process in the GIDAP BPM language. Since the ISO is not a party to the affected system agreements, it cannot require that it review these agreements. Moreover, reviewing all affected system agreements would require a substantial commitment of resources.</p>
<p>Sacramento Municipal Utility District</p>	<p>ISO should adopt a type of agreement where ISO and affected system agree to specific coordination process, such as early notification of potential impacts, sharing of data, protection of confidential information, and joint evaluation of studies. ISO should consider mechanism to retroactively require generator to implement mitigation measures to resolve reliability impacts to neighboring systems. ISO should develop an objective definition or criteria as to what “reasonable coordination efforts” are. ISO should describe process to address adverse impacts caused by generators interconnecting on an existing WECC path.</p>	<p>As discussed in the second paper, the ISO is open to working on agreements with affected systems but will move forward with only the proposed GIDAP BPM changes at this time. The proposed GIDAP BPM language has provided further clarification about coordination efforts and the ISO welcomes additional stakeholder comment. The ISO also suggests that there will be additional collaboration between adjoining transmission systems when the FERC Order No. 1000 interregional common tariff language becomes effective.</p>
<p>Independent Energy Producers</p>	<p>ISO should conduct stakeholder Initiative to design proposal that includes broad coordination and consistency among affected systems such that matters of reciprocity and comparability are addressed. Interconnecting customers alone should not be tasked with coordination with affected systems; ISO must take a lead role. A reasonable limit on study time of affected system should be determined so that busy interconnection process is not at risk for delay. Affected systems and interconnecting system should form an agreement to state a minimum “impact” below which projects will not be subject to additional study. ISO should consider a memorandum of understanding between ISO and</p>	<p>The ISO is open to the prospect of coordination agreements with affected systems and, if fully supported by neighboring systems, would be willing to consider this approach in a separate initiative if there is broad support among stakeholders for undertaking the effort.</p>

Company/Person Submitted By	Stakeholder Comment	ISO Response
	affected system.	
<p>Imperial Irrigation District (submitted by BBMS)</p> <p>Modesto Irrigation District</p>	<p>Support six-month documentation requirement. Should not be mandatory requirement for affected systems to run their own studies, as this could be unduly burdensome or unnecessary.</p> <p>Inflexible and mandatory process should not be imposed as to cause unnecessary burden and costs on affected systems, which may have limited resources. PTOs should not have ability to veto inclusion of affected systems for purposes of coordinating on interconnection studies. ISO should include detail in its BPMs regarding potential impacts of WDAT projects. ISO should clarify process of informing potentially affected systems the identities of potentially impacting generators, including matching them with queue numbers. Matters the ISO reviews are contemplated to be upon requests by customer; ISO should entertain requests by affected systems for reviews. Regarding status reports by generators, ISO should not exercise too great of discretion to determine the reasonableness of the process.</p>	<p>PTO WDAT projects are included within the ISO studies and included within the ISO reports and base cases. The ISO is willing to assist affected system operators, to the greatest extent possible, as they conduct system impact studies, including requests for information and coordination, but the ISO cannot take over the study role for the affected system. It is the ISO’s position that the affected system must agree with whether impacts on their systems have been addressed with the generator, unless the affected system has not taken reasonable steps to work with the generator. The ISO does not believe that PTOs have veto power over affected systems studies or mitigation but would seek further input on this subject. The ISO is willing to review affected system agreements upon request by affected systems as well as by interconnection customers. The ISO will evaluate the status reports submitted by generators on a case by case basis and will continue coordination efforts with the affected system.</p>
Modesto Irrigation District	<p>Request that ISO explain how BPM adjustments made in June 2013 as part of the BPM Proposed Revision Request 674 pertaining to the 2013 Generator Interconnection and Deliverability Allocation Procedures BPM process sync with the proposed BPM adjustments in this process.</p>	<p>BPM Proposed Revision Request 674 was for the development of the new BPM that covers the entire GIDAP process that was recently approved by FERC. It was not an adjustment of a prior BPM. This current process is to add clarifications to the GIDAP BPM with regards to affected systems.</p>
Turlock Irrigation District	<p>Can system studies on affected systems be combined with cluster studies for interconnection so work is not duplicated? Can there be joint studies where the interconnected customer is required to make payment to affected systems for their portion of the studies? The paper states that ISO notifies affected systems when study plans and base cases are posted on ISO website. We have</p>	<p>The ISO will look into the availability of the short-circuit models. The ISO is willing to work with affected system on congestion management and other mitigations that may be part of the ISO’s cluster studies so that there is no misunderstanding about how impacts can be addressed. Please</p>

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	<p>been able to find GE PSLF base cases, but short-circuit models associated with the proposed generators appear to be missing. ISO study results reports do provide short-circuit analysis results, but not all these models are being made available so neighboring affected systems can perform their analyses. How will process address disagreement between ISO and affected system in determining if using congestion management, remedial action schemes, or non-infrastructure mitigation is sufficient to mitigate an impact? Affected system will need to have good technical understanding of implementation of proposed congestion management and there will need to be long-term operating assurance that there will not be any negative impacts to affected system facilities.</p>	<p>provide suggestions for clarifying GIDAP BPM in this regard, if the ISO’s proposed language does not address these issues.</p>
<p>Large-Scale Solar Association</p>	<p>ISO should make public “database that lists the potentially affected systems associated with each study area” and contents of that database. Current affected systems procedures are fundamentally flawed as ISO does not “coordinate the conduct of studies to determine possible impacts;” instead ISO’s “hands off” approach is limited to simple notification of the entities in its database for the area and invitations to meetings. ISO process places primary responsibility of coordination on the interconnection customer, who is in weakest position to conduct it. ISO should try to establish joint (or at least coordinated) study procedures and timelines for interconnection studies, on a voluntary basis, between ISO and these other entities. Affected systems interactions in ISO generator-interconnection process should include agreed-upon “screens” or criteria to identify affected systems (as opposed to the current self-identification process with no specified criteria); and timelines within which affected systems identified with those criteria can elect to participate, provide comments and/or develop and agree to the relevant corrective action plans, preferably through joint (or at least coordinated) studies. Would be helpful if ISO and affected systems could agree on related provisions of the interconnection</p>	<p>The ISO has addressed many of these comments in the body of this paper and also in the proposed GIDAP BPM language section of this paper. Without agreement with the affected system, the ISO would not be able to impose “screens” on how affected systems are identified for notification purposes. The ISO provides a list of potentially affected systems at the beginning of each study process; other neighboring systems who believe that they may be impacted must coordinate with the ISO as soon as possible.</p>

Company/Person Submitted By	Stakeholder Comment	ISO Response
	<p>process with provisions included in reciprocity or similar agreements. Does not believe that significant issues described above can be addressed effectively through BPM revisions; instead some will require amendment of ISO tariff.</p>	
<p>Pacific Gas & Electric Southern California Edison San Diego Gas & Electric</p>	<p>ISO should expand scope of this initiative to include tariff modifications detailing ISO, PTO and interconnection customer roles and responsibilities. ISO should consider expanding scope to also include transmission interconnections and large customer load interconnections, or in the alternative, initiate a new stakeholder process to address them. Overall process for studying potential impacts and criteria ISO will use to determine reasonableness of potential impacts needs to be in the tariff so that a FERC-approved standard is established and in place in the event future decisions to connect generators are challenged. A methodology to determine actual adverse impact needs to be developed and incorporated into the tariff. ISO should seek to enter into bilateral reciprocity agreements with key affected systems that would obligate generators interconnecting within the “affected system” to be studied for affected system impacts in the same (or similar) way as generators interconnecting within ISO system, and spell out generators’ obligations.” In absence of reciprocity agreement, ISO should encourage, but not require, generators to enter into a separate study agreement with the potentially “affected system” operator, and, if generator and ‘affected system’ are unable to reach agreement on separate study agreement, ISO will determine whether generator will be permitted to interconnect within ISO Balancing Authority. ISO should be coordinating agency for all generation projects seeking interconnection within ISO. Process for determining if</p>	<p>The ISO appreciates these comments and has responded to these issues and concerns in the body of this paper and in the draft GIDAP BPM language section of this paper.</p>

Company/Person Submitted By	Stakeholder Comment	ISO Response
	<p>neighboring systems are affected by a proposed connection to ISO system should begin sooner in the interconnection process, in parallel with the cluster studies. ISO needs to clearly define what constitutes a ‘potentially affected system’ and use an electrical screen to identify potentially affected systems before triggering notice to such affected systems and generators. Recommend that a process be developed to obtain cost estimates from a neighboring system to ensure a valid cost-effective comparison. ISO should provide additional clarity describing how congestion management would be implemented and defining which entity would bear any financial burden associated with such congestion management. Definition of an “affected system” should not encompass adverse economic impacts, and instead be limited to where it can be determined that the operation of a proposed generator in one system creates adverse safety or reliability impacts in another system.</p>	
<p>City and County of San Francisco</p>	<p>ISO should involve all potentially affected systems right at beginning of the study process. ISO should add word “all” in the following sentence: “The ISO provides all interconnection customers’ contact information to the affected system operators.” Affected systems need to have access to all interconnection customers rather than just a subset. Support “six month documentation” requirement. ISO should define what constitutes “all reasonable steps” Affected systems do not have ability or resources to perform frequent studies and restudies and ISO cannot mandate any particular study process on affected systems. Any expectation that affected systems would conduct their own studies concurrently with ISO’s study schedule should not be part of the process steps proposed to be included in the ISO BPM. Generation projects interconnected to PTO distribution system can adversely impact affected systems; however, their potential adverse impact is not addressed by the ISO studies.</p>	<p>The ISO believes that many of these concerns are addressed in the proposed GIDAP BPM language but invites CCSF to provide additional clarification. As noted above, WDAT projects that request deliverability are included in the ISO’s cluster studies.</p>

2. The ISO Controlled Grid as an Affected System

Company/Person Submitted By	Stakeholder Comment	ISO Response
<p>Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, the “Six Cities”)</p>	<p>ISO should remain open to development of appropriate revisions to ISO tariff to extent that principles and/or procedures documented materially impact rates, terms, and conditions. ISO should not undertake responsibility for implementing mitigating measures to compensate for the failure of an affected system to resolve potential impacts on its system. As with situations that involve a neighboring system as an affected system, believe that policy principles applicable to circumstances in which ISO is an affected system should place a high priority on minimizing the costs ISO load-serving entities and transmission customers. Policies governing affected system impacts would benefit from enhanced regional coordination and, perhaps, the development of common tariff provisions or procedures. ISO should consider whether closer integration with WECC study procedures is appropriate.</p>	<p>See previous response to the Six Cities’ comments.</p>
<p>Sacramento Municipal Utility District</p>	<p>ISO should adopt a type of agreement where ISO and affected system agree to specific coordination process, such as early notification of potential impacts, sharing of data, protection of confidential information, and joint evaluation of studies. Such special agreement would establish a bi-lateral arrangement benefitting the ISO as well.</p>	<p>The ISO has addressed this issue in the body of the second paper.</p>
<p>Imperial Irrigation District (submitted by BBMS) Modesto Irrigation District</p>	<p>One issue is ISO decision to not allow for stakeholder input prior to filing at FERC of a pro forma facilities construction agreement for when the ISO is an affected system. IID and MID have an interest in generators within their system that seek to wheel-out to other systems. IID or MID-owned generation could be impacted by such an agreement. IID and MID seek input into the development of such an agreement. Given the nature of addressing an issue when a matter is filed, IID and MID fear it may be too late to offer meaningful input.</p>	<p>The ISO seeks clarification with regard to the “wheel-out” concerns expressed in these comments. If the generator is in either IID’s or MID’s queue, and therefore the ISO is an affected system, then the issue of impact to IID or MID-owned generators should be resolved in IID’s or MID’s study process. Other comments have been addressed in this paper and in response to IID and MID above.</p>
<p>Turlock Irrigation District</p>	<p>If a neighboring affected system has a generation project request interconnection to an adjacent electrical system from the ISO, interconnection customer will need to enter into a study agreement with both the affected system and ISO. Section 6 appears to capture this and it is not as challenging as with neighboring systems as affected systems.</p>	<p>The ISO agrees with this comment.</p>

Company/Person Submitted By	Stakeholder Comment	ISO Response
Large-scale Solar Association	LSA does not have specific comments regarding ISO’s position as a potential affected system. However, it seems logical that ISO should be willing to similarly participate in studies and related provisions of interconnection-study processes of other systems. ISO also should consider developing “reciprocity agreements” with neighboring systems where the SO is an affected system.	The ISO is willing to coordinate with the study processes of neighboring systems when the ISO is an affected system.
City and County of San Francisco	<p>ISO BPM language needs to be symmetric in its treatment. For instance, ISO has proposed the following three policy principles when the neighboring systems are the affected systems. However, there are no comparable policy principles to the following that were included in the August 5 paper when the ISO controlled grid is an affected system:</p> <ol style="list-style-type: none"> 1. If requested by the interconnection customer, the ISO will review affected system agreements, tendered to interconnection customers and available to the ISO, to determine whether they contain terms and conditions that could be problematic for the ISO. For example, the ISO would have concerns about operating instructions being given by affected system to generation resources connected to the ISO controlled grid. 2. If requested by the interconnection customer, the ISO may review the reasonableness of the studies conducted and study results issued by the affected system operator. 3. The ISO will review other issues on a case-by-case basis, either upon the request of the interconnection customer, or where the ISO deems it appropriate. <p>ISO should include BPM language that recognizes that ISO may need to provide its studies and agreements to the affected systems for their review at the request of the interconnection customers.</p>	The ISO has added this symmetry to the GIDAP BPM language.