



Community Advisory Committee

Meeting #2

Idaho Dept. of Fish and Game Regional Office
318 South 417 East in Jerome (U.S. 93 Business Park)

Thursday, January 17, 2008

Results

Meeting Purpose:

- To continue education regarding electrical systems serving the Magic Valley's

Attendance

Committee

- Daniel Stapleman
- Tara Hagen (for Lori Armstrong)
- Bob Narabout (by substitute)
- Brad Wills
- Bill Chisholm
- Charlie Howell
- Chuck Carnohan
- Jay Loesche
- Dave Burgess
- Mike McDonald (Dave Parrish)
- Debbie Dane
- Debra Rose
- Bill Block
- George Urie
- Jane Kollmeyer
- John Bokor
- Jon Anderson
- Clay Handy
- Ken Miller
- Rich Yankey
- David Mead
- Marlin Eldred
- Mitch Humble
- Brian Olmstead
- Richard Dunn
- Jackie Zapf
- Tom Faulkner
- Richard VanZante

Planning Team

- Kent McCarthy, Idaho Power, Project Leader
- Dan Olmstead, Idaho Power
- Kevin Whittier, Idaho Power
- Bryan Hobson, Idaho Power
- Mike Pepper, KMP Planning – Facilitator
- Amber Buckley, Civil Science – Clerical

Other Idaho Power Employees

- Chris Punt
- Jared Hansen
- Mark Lupo
- Candace Gentry
- Lynette Berriochoa
- Marc Patterson
- Mel Trammel

I. Welcome and Introductions

- Dan Olmstead, *Community Relations Representative*
- Kent McCarthy, *Project Leader*
 - Review of project purpose, Idaho power's perspective on the project, and previous meeting review (video).
- Mike Pepper, *Facilitator*
 - *Meeting purpose, agenda and format*
 - *Review planning steps / where we are in the process*

Review CAC Tour/Meeting #1 – December 13, 2007

- Comments / questions received during the tour / Additional comments
 - No additional comments received from the Committee

II. Generation – Kent McCarthy – (see PPT handout for presentation details)

Q: How many megawatts of power are produced on IPCO's system in the Magic Valley?

A: Idaho Power has 460 MW of capacity in the Magic Valley. This is all hydro generation so the amount of power coming out of each project at any one time depends on river flows. (Remember there is also a lot of Idaho Power generation located outside of Idaho).

C: Kent stated that pulverized coal may not be a viable resource in the future due to the environmental issues associated with that. At this time, IPCO is not relying on pulverized coal power for future use because of this.

Q: Can we get average household electrical usage?

A: 1 MW will supply about 650 homes on an average day. Approximately 2-4 MW are needed for the same 650 homes on a hot summer day (peak). Household use will fluctuate due to different appliances going on and off.

Q: Can the committee get information regarding the resources that will be used in this plan and for future planning in the Magic Valley.

A: Planned generation information can be found in the Idaho Power Integrated Resource Plan (IRP) which can be viewed on the Idaho Power website. However, the generation identified in the IRP is for the entire system and is not just for the Magic Valley. Kent reminded the committee that the basic purpose of the committee is to review local needs and to address placement of needed transmission and substation infrastructure to meet future needs.

Q: There are two nuclear plants being proposed in Owyhee and Payette; How does IPCO look at integrating that into the Integrated Resource Plan?

A: IPCO watches upcoming power developments and buys the power available if it makes economical sense. All power that comes in is studied and assessed prior to being integrated into the IRP.

Committee Member Statement: (regarding nuclear power) a recent BSU survey showed 70% of people were opposed to nuclear power if power was going out of state, 45% approved if the nuclear power is staying in state.

Q: Will is the amount of available hydro power that may be lost in the future?

A: Hydro power generation is decreasing. Fish flow requirements and decreasing river flows are steadily decreasing the amount of energy we can get from our hydro resources. Shoshone Falls is on its last upgrade and will soon have a larger generator. Shoshone Falls will be required to maintain flows during the day-time for aesthetic purposes but at night time, winter, and spring they can be used to produce power at a higher rate than when falls are flowing. New hydro-power resources are likely not feasible.

Q: Are there additional wind power facilities being planned for development in the future?

A: Yes, there are numerous wind power facilities proposed for integration into the IPCO system. Studies have been and are being performed to see just how much wind power can be integrated into the system. The biggest problem with wind is that on days when there is no wind (hot summer afternoons), Idaho Power must still have generation to supply energy to satisfy its load demand. Hydro-power backs up the wind power but there is only so much of the hydro power we can use. And in low water years, the amount of available hydro power is less, so the problem is even worse.

Q: What happens when there is excess Base-load energy?

A: Some Generators are backed off according to electricity requirements. At any time, we have some generators that constantly change their output to react to changes in load.

Q: Is there any energy storage available for excess energy?

A: Some of the hydro power system is used as energy storage and batteries are being developed for energy storage purposes but currently there isn't a good battery-based energy storage system.

Q: How does the 23% figure shown on slide 23, referring to the amount of energy purchased in 2006, compare with this year?

A: results are not available yet, but it is thought that 2007 will show that more power was bought because of 2007's poor water conditions.

Q: How much power does the state of Idaho use?

A: Total figures are not available to Idaho Power, as they are not the sole provider of power in Idaho. However, it is known that Idaho Power customers use about 85% of the power produced in the state and set a record peak of nearly 3,200 MW last summer. Some municipalities produce their own power, such as Idaho Falls.

Q: Is there any opportunity to use irrigation/soil monitoring that would allow energy conservation, efficiency with pumps?

A: INL has studied those types of things and could have positive results on determining those future opportunities.

Demand Response was discussed; including ideas for installing devices that provide a means to reduce peak load through the management of power usage on homes, businesses or by irrigation customers. An example is a relatively new Idaho Power program that allows residents to voluntarily have a device installed on their AC system that will turn off the AC for 15-20 minute intervals during hours of peak use. This program has been successful so far and IPCO hopes that the program can be expanded to more users in the future. Idaho Power expects to expand the AC program to the Magic Valley in late 2008 or early 2009. The committee commented that these types of energy devices would also be useful tools in reducing peak loads in businesses.

Q: Is Idaho Power regulated for emissions from its coal fired power plant?

A: Sulfur Dioxide is the primary regulated emission though we are monitored for nitrogen oxides and carbon monoxide/dioxide and there are limits to these emissions too. Emissions monitoring is becoming much more limiting as time goes by.

Q: How does natural gas/steam efficiency compare to the efficiency of a coal plant?

A: Natural gas/steam efficiency is close to the same as a coal plant.

Q: How much water is required to produce steam in a combined cycle combustion turbine plant?

A: Some advanced technologies use very little water for steam production because it is reused in the process. More standard technology uses quite a bit of water, but I don't know the numbers.

Q: Concerning geothermal flash steam technology, how does temperature affect the flash steam system?

A: Temperature determines steam pressure.

Q: What is the efficiency of a combine cycle combustion turbine plant?

A: Some plants exceed 55% efficiency.

Q: What is the fuel efficiency of a fuel cell system?

A: approximately 30%

Q: INL says the planned new reactor will be able to produce hydrogen. How will they do that?

A: The reactor will likely use electrolysis where electricity is fed into water and hydrogen is extracted. This could be a very efficient way to produce hydrogen.

Q: Is IPCO planning to use Solar-thermal generation?

A: Solar-thermal generation costs a lot at this time. Idaho Power continuously evaluates all power sources and when the cost comes down, we will use it if it is shown to be viable in Idaho.

Q: Will new technologies allow houses and businesses to become more self-sufficient, i.e. produce their own power?

A: That is a possibility and personally I (Kent) think that will happen eventually. Idaho Power's plans will change according to what happens in the future. Currently this possibility sometime in the future.

III. Transmission – Bryan Hobson - (see PPT handout for presentation details)

Additional note as part of the presentation:

- Albion & Raft River are not served as part of the IPCO system.

Q: Does the PacifiCorp line run into Midpoint Substation or out?

A: Both. It was initially built to ship power produced at Jim Bridger power plant into Oregon but it is used in both directions now.

Q: What is the limitation on how high of a voltage can be placed underground?

A: There are existing 500,000 volt underground transmission lines but Idaho Power doesn't have any underground transmission at this time. Underground transmission lines are typically around ten times more expensive than overhead lines.

Q: How can transmission lines be made more efficient?

A: By moving the source of generation closer to the load, the power losses on a transmission line decrease.

Q: What are WECC violations?

A: Most violation fines come when one company interferes with another company's operations. There are measures that are in place to protect against poor reliability performance.

Q: Does the NESC have recommendations as to how many lines or how many different voltages can be in a ROW?

A: No, the regulations are mainly for safety, rather than for operations.

Q: Can an electrical ROW have other things within the ROW?

A: Other elements such as road signs are allowable, but safety determinations are made before they are allowed and installed.

Q: Does Idaho Power charge to allow fiber optic and cable TV wires to be placed on IPCO poles?

A: Yes

Q: How does Idaho Power obtain ROW?

A: Idaho Power typically purchases easements in private ROW, including along road ways. If Idaho Power's poles are in private easements, any entity wishing to widen the road that requires the use of the adjacent private property and impacts Idaho Power's poles, the moving entity will have to pay to have these poles moved. If the poles are in the roadway ROW, then Idaho Power would have to pay to move them if the road is widened.

Additional presenter comments:

- Older power poles often cannot support larger lines if an upgrade is desired. In this case, the whole pole must be replaced with one that meets the new requirements.
- There are no existing 500,000 volt lines owned by IPCO but IPCO is working on building a number of 500,000 volt transmission lines.

**** FUTURE MEETING TOPIC – Committee request for additional information on stray voltage to be presented at the next meeting.**

Gateway West Transmission Project (and discussion regarding other 500,000 volt lines)

Q: Would the (Gateway West) 500,000 volt Project allow development of more wind stations?

A: Yes, once the transmission lines that make up the Gateway West project go through Midpoint Substation, they will provide additional capacity for new wind and other sources of power located in the Magic Valley.

A: In Wyoming, the development of the Gateway West Project will help to encourage development of wind facilities and other energy generation facilities.

Q: How about the planned nuclear facility in Glenns Ferry?

A: The nuclear plant would likely need a 500,000 volt line but probably couldn't use the Gateway West project line since it will already be in-use.

Q: Why isn't IPCO considering the use of DC for the Gateway West Project?

A: DC lines are normally only used for long distances (Experience less loss in power and are more efficient). For the Gateway West Project power line, the 650 miles would be too short a distance to put in a DC line plus there will be intermediate substations as part of the system that would make using DC difficult.

The Gateway West Project 500,000 volt line is not the immediate concern of this group but IPCO would encourage the committee's input on this line as part of the public process for that project.

Additionally, there may be out of state lines coming into Idaho Power substations in order to sell their power. There are some proposed lines coming from Montana and Ely, Nevada area that would join up at Midpoint or Borah stations. Idaho is becoming the center of 500,000 volt transmission for other states.

Q: Can Distributed Generation (i.e. solar panels on houses) be used as part of this plan?

A: Certainly, but distributed generation has fallen out of favor lately because of the interest in wind and geothermal power generation. These types of plants are usually located a long way from the load due to the location of the wind or geothermal resource so they require long distance transmission to deliver the power. Distributed generation will come back as technology improves.

Q: How much power loss is there on the lines?

A: On average, Idaho Power sees about 4% power loss on transmission lines. The higher the voltage the less the loss on the line. Distribution lines lose about 8% system wide.

IV. Substations – Marc Patterson - (see PPT handout for presentation details)

Q: Is there a reason the 500,000 volt yard is separated from the rest of the substation at Midpoint?

A: The 500,000 volt yard was originally developed and built by PacifiCorp and was constructed that way because PacifiCorp intended to operate the yard. IPCO now operates both yards so there is not a real reason for this continued separation.

Q: How many more substations are being proposed in MV area?

A: This is something that will be discussed in the future but there will be a need for roughly 20 more substations. IPCO will probably be doing a lot of expansion of the existing substations and will require input from the committee on these issues as part of this plan.

V. Committee Role / Related Issues

Q: With the expertise that IPCO has regarding these issues, how will the Committee assist?

A: the Committee members will represent their respective organizations in helping to identify the preferred alternatives to meet the long term energy needs for the Magic Valley. IPCO has a good idea of the long-term energy needs of the Magic Valley, and the technical expertise regarding how the system

needs to work, but realizes that there are many different alternatives for how the system could be developed; all meeting the long-term energy needs.

A: IPCO is seeking the Committee's input to develop a plan that outlines their preference for how the system should be developed so that it best reflects the Magic Valley's most important considerations and desired configuration. It is anticipated that the final plan recommendations will include a preferred alternative and other supported alternatives from the committee to meet future energy needs, any one of which could be pursued by IPCO in future development/permitting requests. The plan could recommend a variety of actions, such as modification of existing substations and or recommended size and placement of new substations, additional transmission lines, etc.

As needed during the process, to identify issues, establish goals, develop alternatives and complete mapping exercises, the Committee may be broken up into smaller groups that represent all parts of the valley. Results of all small group work will be discussed by the overall committee for consideration in developing the final plan recommendations. All plans will be documented.

VI. Next Steps and Wrap up / Adjourn by 2 p.m. – Mike Pepper

- Final discussion
- Next CAC meeting – Thursday, February 14th / 10 a.m. to 2 p.m. / IDFG Regional Office
 - Continued education
 - Magic Valley electrical system – Existing conditions
 - Identify committee issues regarding electrical needs