SUMMARY OF
IRP CONTEMPORARY ISSUES TECHNICAL CONFERENCE
Held on October 18, 2012, at the Indiana Government Center South Building

Welcome by Kari Bennett, Commissioner, Indiana Utility Regulatory Commission ("IURC")

IURC staff in attendance included:

- Brad Borum – Director of Electricity Division
- Jim Ray – Director of IRP Division
- Beth Roads – Assistant General Counsel with responsibility for IRP rulemaking

1. Integrated Resource Plan ("IRP") Rulemaking – IURC RM #11-07

- A revised draft Proposed Rule had been circulated by the IURC on October 4, 2012.
- Based on the written comments received on September 14, 2012, the major change to the draft from previous versions was the elimination of the acknowledgment and appeal provisions and the establishment of an IURC Staff Report, which would review the submitted IRPs based on the informational, procedural, and methodological requirements of the IRP rule.
- No substantial issues with the Oct 4th draft Proposed Rule were raised. General agreement of those present was that the draft Rule reflects changes demonstrating the IURC seriously considered the previous comments from the utilities and other stakeholders to the general satisfaction of all concerned.
- The possibility of an emergency rule was discussed. An emergency rule would put into place the requirements of the revised IRP Proposed Rule in time for the 2013 IRP cycle. Some did not feel an emergency rule was necessary in that the utilities could commit to a good faith effort to comply with the revised IRP Proposed Rule. Others desired the additional certainty that an emergency rule could provide, particularly considering the change of an alternating submittal year schedule, with half of the IRPs being due November 2013 and the other half November 2014.
- Friday, November 9, 2012, was set as the date for written comments on the Oct 4th draft Proposed Rule. Written comments should include:
  - Annual financial impact of Oct 4th draft Proposed Rule;
  - Any remaining red flag issues in the rule;
  - Additional edits; and
  - The necessity of an emergency IRP rule and the timing of such a rule.

2. Introduction of Contemporary Issues Technical Conference ("CITC")

- The annual CITC is intended to provide a forum to share and learn, with the overall intent of the IRP Rule changes to be continuous improvement, in an open and transparent collaborative process. The IURC is interested in developing expectations, not dictating prescriptively. These technical conferences are to improve the IRP process and the IRP product over time.

- The IURC staff invited the following phone-in participants to share their experiences and lessons learned concerning the various scheduled subjects:
    - Bob Hinton – North Carolina Utilities Commission
    - Steve Kihm – Energy Center of Wisconsin
    - Tom Eckman – Northwest Power and Conservation Council
    - Lisa Schwartz – Regulatory Assistance Project
    - Dwight Lamberson – New Mexico Public Regulation Commission
- An email with contact information for the phone-in participants was sent to the IRP distribution list on October 19, 2012.

3. Risk and Uncertainty Methods

- The revisions in the IRP rule are intended to stress that risk as well as cost should be considered when identifying future resources. The goal is to move from simply identifying the "least cost" plan to a more robust plan that holds up to future risks and represents the best combination of cost and risk.
- The traditional method is a forecast based on history with sensitivity analysis applied to base case and other cases; it is the least cost with sensitivities in mind. However, this traditional methodology provides little understanding of what happens if things are different than history; it doesn't assign probabilities, and it views conditions in a narrow band. The process doesn't necessarily manage risk. This traditional methodology is only as good as the assumptions, and can create tunnel vision.
- Uncertainty analysis adds probabilities to cases, develops an uncertainty distribution curve, and gives insight into best and worst cases and chances that they will occur.
- Uncertainty may go beyond trends and forecasts. One question is whether the uncertainty is so great that a future can't be forecast. The alternative is to look at multiple futures, to look at not just what is probable but also what is plausible. This can be difficult to do.
- There are lots of ways to deal with risk and uncertainty. One is the perspective of energy consultant David Magnus Boonin. The link to Boonin's paper, "Utility Scenario Planning: 'Always Acceptable' vs. the 'Optimal' Solution" was transmitted to the IRP Rule distribution list, as requested, by e-mail on October 19, 2012. The link is: http://www.electricitypolicy.com/Boonin-3-17-11-cc-rom4.pdf.
- Hawaii modified its IRP rule to include scenario planning approach. Colorado is looking at what future conditions should be included in IRPs, so there is a higher probability that resource plans hold up under those possibilities.
- Should we be looking at things that are plausible or possible?
- The revised IRP Rule requires utilities to assess risk.
- All utilities do sensitivity analysis already – such as high growth, low growth, carbon, no carbon.
- It would help the Commission to have a better understanding of utilities' internal process in developing the scenarios and reviewing to make sure they are internally consistent.
- NIPSCO is not just looking at historical data, but uses outside resources to look at future developments – not a regression on old data. NIPSCO contacts customers regarding expansion plans; it has 20 departments that look at risks; it does risk

analysis for shareholders as well as customers; but it can understand that a better description of that in the IRP would be helpful.

- Duke is planning on more than one future to evaluate and needs more information regarding benefit analysis.
- One possible example is Portland General Electric because it looks at risk.
- It would be helpful for Commission Staff to email examples of what others are doing. Refer to the Northwest Power and Conservation Council (NWPCC) link to their IRP provided later in these notes.
- Steve Kihm: In risk assessment, uncertainty is usually understated. It can be an issue of scope vs. method.
- Bob Hinton: Look at plans and a broader list of uncertainties. One example is how recent developments in natural gas has changed things dramatically.
- Brad Borum to Steve Kihm: What kind of process do you need to not understate uncertainty? Steve Kihm: There are many examples. Utility needs to understand that there is more uncertainty imbedded in the data than may first appear. One possibility is to look at case studies outside of the utility industry – such as oil industry and the Harvard Business Review.
- Colorado is trying to imagine what would be different 10-20 years than today.
- Are we looking broadly enough? Considering billion dollar investments that will be in place for decades. Is that enough when we don't know what's happening?
- The question is how to incorporate uncertainty analysis in IRP process?
- We need to think more broadly.
- I&M uses scenario planning and a risk model for short-term decisions. This has been used to narrow the band of assumptions. The value of the model comes into question if the assumptions are too wild. Utilities are looking at immediate action plans, not wide ranging assumptions.
- Brad Borum: These technical conferences are intended to be a discussion process over time. How can we be sure we are capturing a range of uncertainties and seeing how resource plans perform under those ranges?
- Steve Kihm: The action plan needs to be assessed under uncertainty. Robust plans are optimal over a range of outcomes and probably not optimal under a base case.
- The Tennessee Valley Authority ("TVA") is looking at scenario planning.
- We need to keep an open mind and have the dialogue.
- One of the purposes of the IRP rulemaking is to require the documentation of the analysis being done. The IRP needs more information regarding how the utility got from point A to point B or to point D; utilities need to provide additional information.
- There are multiple levels of analysis – decision tree to modeling and quantitative analysis. There is major uncertainty such as climate change, but it has been put in a smaller box of regulatory risk rather than a larger business risk. Judgment must be made regarding how much credence a particular scenario deserves; the IRP should describe business decisions. There is also fundamental uncertainty with a resource such as natural gas, compared to coal or nuclear or solar. The development of technology can't be predicted, but one option is to look at wider scope (ex. Gas at $2 vs. at $12). IRP can discuss multiple levels of uncertainty and then explain why the

focus has been narrowed to get to a modeling exercise that's manageable and affordable.

- The IRP should discuss what uncertainties there are, the range of uncertainties, and how they are being taken into account or not in the IRP processes.
- Diversity – are we diverse enough?
- State Utility Forecasting Group ("SUFG") – how do the utilities use the various scenarios and sensitivities in developing their IRPs?
- NIPSCO starts with the top 100 plans, then tests them against various scenarios and sensitivities and looks to see what plans fall out under those circumstances.
- The Boonin article talks about objective uncertainty and changing objective function to see if the proposed solution survives under different uncertainties.
- One possibility is to use the tools from the finance world for modern portfolio theory.
- Is there any problem with premise that reducing risk may cost a bit more?
- This may depend on the articulation of the risks and costs.
- Financial hedges may be of limited term or very expensive. Physical hedges are also possible. This discussion is what to start thinking about.
- Another possibility is lower risk and lower costs through energy efficiency.
- Methodology will be looked at in the staff report. Five utilities could do it five different ways. Commission staff will comment and suggest, but not prescribe. This process will be iterative over time.
- The IRP should explain what the utility's thinking is and how it reached that decision. It is expected to be different for different utilities. Commission staff hopes for discussion in the IRP regarding what went into decision-making process and how the utility weighed the uncertainties.
- Involvement in IRP as it is developed will lead to the IRP not being a surprise. Involvement leads to development of understanding.
- Additional examples: One can counter Boonin's criticisms without abandoning optimization and well-defined performance metrics (cost and uncertainty measures). For example, there is a difference between testing for a few sensitivities and not having a measure of robustness as compared to what Northwest Power and Conservation Council (NWPCC), Portland General Electric (PGE), and others do where a potential portfolio is evaluated across hundreds of futures using distribution analysis and risk metrics.
- The NWPCC IRP is at this link: http://www.nwcouncil.org/energy/powerplan/6/default.htm and please note that Tom Eckman (one of the phone-in participants) is available to be contacted at teckman@nwcouncil.org.

4. Treating Supply-side and Demand-side Resources on Comparable Basis

- The intent of the revised IRP Rule is to have demand-side resources compete with supply-side resources in the IRP, not simply subtracting a value from the forecast. Proper consideration of demand side management ('DSM") is important because it can postpone or eliminate the need for additional generation resources and lower customer bills overall.

- What are the benefits of DSM? How to incorporate it in IRP? How to do it better in the future?
- The difficulty in making DSM assumptions long-term is due to uncertainties in future DSM programs, penetration, technology advancements, etc.
- DSM has acquired connotation of utility-sponsored energy efficiency. Future plans should be looking at utility-sponsored and non-utility sponsored energy efficiency, such as revised energy usage standards for appliances, as well as the wholesale level in which energy efficiency is bid into the market. The IRP needs to be estimating all three of those categories.
- Distributed generation ("DG") – difference between customer premises energy efficiency and customer premises distributed generation. Question is whether to call it a demand-side resource or a supply-side resource. End-use efficiency has been there for a while. DG has not been and has a potential for explosive growth. It is analytically separate from end-use efficiency.
- There is a difficulty in modeling DSM (energy efficiency) – it is unknown what the adoption rate will be at a particular price. The first part of a program may come in at expected price, but price rises in order to get greater adoption. There is a risk of what cost of the program will be. Non-utility energy efficiency is included in the load forecast. In a high energy efficiency scenario, there is no confidence as to what it will cost or what the adoption rate will be. There is a risk associated with planning it 5 years out.
- How do you take into account that risk?
- DSM is not currently reaching its economic potential – the risk is further out – there is a limited level of confidence.
- Sometimes energy efficiency is thought of as silos of energy efficiency, but the various programs may not actually be so separate. For example, regarding substantially improving building codes, the utility can be involved in order to achieve what is possible. The question is how to measure it and how much attributed to utility's involvement. Others working on this – mostly on west coast – regarding how to incorporate.
- IRP process fits within a public policy that you only build if you need it. Do you do demand side if it's not competing with anything? In circumstance, with no or negative growth, additional DSM just increases reserve margin. If a utility already has enough resources, should additional DSM be sought after?
- There is a technical potential for DSM and an economic potential. State requirements are also a factor. The utility will put in enough DSM to meet state requirements, but no more if there is no economic potential. The utility is already looking at DSM as a supply-side resource, but there is a limit.
- If the economics are no or negative growth, is DSM still worthwhile?
- Steve Kihm – it depends on the objective, such as meeting state or regulatory requirements, maintaining reliability. DSM provides the lowest customer bills if works economically. Natural gas utilities have had declining loads, but still promote energy efficiency.
- How are you defining the economics and how are you measuring the costs to be compared in determining the economics? Example: Proposals with significant capital investments for alternatives to retirement of coal, but from a ratepayer perspective it

is not riskless, particularly compared with energy efficiency. Need to look at the economics and the analytical framework to evaluate "comparable" economics.

- Regarding modeling DSM for the IRP, the IRP is updated every 2 years, so that's okay. However, it is more difficult when making resource decisions – then the utility needs to weigh how certain or uncertain regarding DSM.
- What about generic order target by IURC? Should this be hard wired in to the IRP?
- IURC staff responded by stating that, although the specific savings targets should be included, a range of savings, both less than and more than the targeted values, should be allowed to compete in the model. The intent of the IRP is to determine the preferred portfolio of resources; therefore, it follows that the results should inform policy. If a "requirement" or mandated amount is found to be counter-productive, that conclusion should be known so that appropriate alternatives can be considered.
- Look at what the economics are, not just the order. The Commission should also be informed by the studies over the next years. Commission does have those targets, but it may not be economic to reach the target – it could be something less, or it could be something more. What all goes into meeting those economics? The target could be one of the things a utility looks at in the IRP process, but not the only thing. What happens if target doesn't happen? What happens if more happens? What goes into that evaluation process?
- Goal would be to meet regulatory requirement, but also understand that additional analysis should be done.
- This is part of the conversation that informs the decision regarding DSM and target.
- Clarification on DSM target is helpful. Transmission and distribution is still in IRP, does this mean the utility should question the RTO process? How far does this go regarding things outside of the utility's control? Re: modeling what federal requirements are?
- The information needs to be in the discussion to understand the implications of regulatory actions. The utility needs to strive to meet requirement, but the IRP also needs to have discussion on the economics of DSM and EE. This will change over time; that is why we need to have continuing conversations.
- There is a need to sync up DSM programs, studies, and targets with IRP.
- Integrated resource planning must include both supply-side and demand-side; it must be part of the conversation.
- Phone-in participants described their work and experience with DSM integration. Tom Eckman described the modeling used by Northwest Power and Conservation Council (NWPCC) as to how demand-side and supply-side resources compete. He addressed their use of DSM load shapes in determining reduction of both peaking and base load resources. He agreed with the treatment of savings targets discussed above. The link for the NWPCC IRP given above is applicable. Lisa Schwartz described her involvement with DSM integration, especially as it relates to Pacificorp IRPs. Steve Kihm addressed his experience with the Energy Center of Wisconsin. He noted that DSM should not be underestimated even when load growth is minimal or potentially negative.

5. Expectations for Public Advisory Process

- The intent of the public advisory process is to help the overall IRP quality by allowing more collaboration and two-way communication between utilities and stakeholders – to help educate stakeholders and to allow stakeholders to provide quality input to utility.
- As an outsider participating in the process, it should be valued and recognized and taken advantage of appropriately. Collaborative mindset helps it to work better and be more beneficial. This is different than an adversarial or litigation mindset.
- Early involvement in the IRP process is hoped to reduce the level of litigation and adversarial nature of resource actions.
- Distributed generation and renewable development would like to be involved, but they need education on IRP and process, in order to participate effectively. The avoided cost issue is the next issue that needs to be worked on.
- Low avoided costs means utilities are doing a good job of keeping utility rates low. Reform of net metering was important encouragement of renewables. Utilities also have significant utility-scaled renewable energy projects. Public advisory process has been done in other states, should be an informal process, and has brought good ideas to the table. Process should not be formal and adversarial.
- What are "reasonable steps" to notify customers of public advisory process?
- Phone-in participants described their experiences and lessons learned with their processes, which have been in place for multiple IRP cycles. In addition to Tom Eckman and Lisa Schwartz, Dwight Lamberson of New Mexico PUC joined the conversation. All three have experienced great benefits from the PA process. They have found that contention is reduced, there is better mutual understanding on the part of the various utilities and stakeholders, there is opportunity to be heard and provide input, all of which typically lead to an improved process and product, as well as reducing the cost in the long run. The various PA processes have required multiple meetings that address the various aspects and phases of the IRP development. All three participants agreed that it is very, very important to do a good job of education up-front. This allows the stakeholders to understand what is involved in the IRP, what challenges the utility has to deal with that the stakeholder may not have been privy to, and why things are the way they are. It was generally agreed that most of the stakeholders are participants in previous utility proceedings, composed of environmental, industry, and economic-related interests.
- Dwight Lamberson explained that any perception of a contentious IRP process in New Mexico is a misconception. There was pushback by certain constituencies that always want more energy efficiency and renewables and do not want any coal-fired generation. However, the IRP PA process was a positive and successful one. The New Mexico Commission rejected the pushback attempt out-of-hand, noting that the litigants had ample opportunity to participate in the process.
- How much overlap would there be to be able to do joint meetings (involving more than one utility)?

- Certain aspects of IRP are the same for all the utilities, but there are differences (RTO, approaches, imbedded resources, areas of state) – enough differences to warrant separate meetings (with perhaps an RTO 101).
- How is confidential data handled?
- Oregon – handled under regular commission procedures for a protective order. Aggregate the data is another option. New Mexico – confidentiality agreements. Work through issues with vendors.
- Oregon – utility documents the public advisory process in the IRP.
- Webinars experience vs. face-to-face? Webinar can inhibit participation because don't get to hear or see everyone in the group. In New Mexico, this worked.
- Go-to-webinars. Takes some time and education, but worth it.
- Need adequate technology for effective communication.
- Lessons learned: Smartest thing – take the time to educate the participants as thoroughly as you can as to what's involved in the planning process and range of assumptions and cost; open dialogue and engagement, including commission staff. Stupidest thing – try to inhibit participation from some groups; not allowing opportunity for discussion.
- The utilities are expected to begin developing their public advisory process and plans to support the upcoming IRP cycle, keeping in mind that only a portion of the utilities will be submitting IRPs in 2013. The utilities are asked to define their plans for their public advisory process and transmit a summary to the IURC for information, on a schedule commensurate with their inception. For example, if the utility will begin their PA process in late December or early 2013, they should transmit their plans soon.

6. Wrap-up and Next Steps

- Reminder: Written comments on Oct 4th draft Proposed Rule are due on November 9, 2012.