Northwest Power and Conservation Council
Demand Response Advisory Committee
March 8, 2017

Tina Jayaweera, NPCC, began at 9:30 by welcoming the group and reviewing the day's agenda and December's minutes. Jayaweera noted that the DRAC will focus more on DR and less on enabling technologies like storage which will be covered at the Generating Resources Advisory Committee meeting.

Adam Schultz, DOE, asked why storage is considered Generation. John Ollis, NPCC, explained that there are more utility-scale storage experts at the GRAC.

Jayaweera called for introductions.

DR Data Template

Mary Ann Piette, LBNL, disagreed with the statement that direct load control is Auto DR. She explained that Auto DR could be automated price response or event triggered while direct load control, like AC cycling, often doesn't use an open standard. She suggested columns that address automated vs manual and their triggers.

Jason Salmi Klotz, Oregon PUC, stated that there might be dispatchable programs that are not price responsive. He called these contracted loads. Piette suggested calling that "aggregator contract." Jayaweera added the category. Ollis reminded the room that there might not be much difference between direct load control and auto DR when bundling for a overall system modeling.

Alex Reedin, PGE, suggested "direct load control/Automated DR" as an option. Jayaweera stated that was the original option.

Ollis asked Piette for feedback. She said it's important to think about the future in terms of open systems versus proprietary. Ollis suggested another category called "Auto vs Manual." Piette agreed. There were head nods of approval in the room.

Carl Linvill, Regulatory Assistance Project, pointed to the Program Objective category saying the "multiple" option could be problematic and suggested a comment field. Ollis acknowledged that items will eventually be classified, but the model will be hard to bin if there are too many multiples. He suggested collecting main objectives first with the option of expanding columns in the future.

Piette noted that there is no program trigger column and wondered if price or system conditions triggered a program call. Ollis stated that some entities don't want to share that information and moved to [Slide 5] for further discussion.

Lee Hall, BPA, stated that the actual trigger price is commercial information and would not be shared, but stating that there is a “price trigger” would be fine. He called attention to other possible triggers: anticipated hot weather, hydro operations, etc.

Mark Osborn, Cadmus, recommended “reserves” be added.

Salmi Klotz suggested Day Ahead, Day Of and Hour Ahead. Jayaweera said they are housed in the Notification Protocol column.

Ollis noted the eventual need for estimated trigger price for the “Planned” sheet. He asked the room to think about how that could be accomplished without revealing commercial information.

Jayaweera added Price, Temperature, Operational and Reserves to the Trigger drop down menu. Hall suggested taking out temperature as it drives the other choices. John Steigers, Energy Northwest, suggested adding Transmission or Generation Contingency, calling it different from Reserves.

Osborn referenced Operational asked if there is value in knowing if it’s a Transmission Operational or Distribution Operation need. Ollis agreed that that would be helpful in planning and a delineation between transmission and generation is good.

Reedin suggested that Contingency is for a planned outage while Operational is for loads that are high relative to capacity. Rob Pratt, PNNL, stated that a spinning reserve call would be a Contingency event.

Ollis stated that there are two reasons to call: economics and reliability and suggested a generation and transmission tag on both. Steigers called those buckets big but admitted that refining them will get complicated quickly.

Osborn suggested separating Distribution as Transmission is different.

Tony Usibelli, WA State Dept of Commerce, stated there is interest in knowing the value of DR when it comes to resiliency in emergencies. Ollis agreed with Steigers that Economics and Reliability are big buckets and asked if resiliency is part of reliability or something else.

Tom Eckhart, UCONS LLC, stated that the Seventh Plan asked us to define DR and wondered if the group is getting too far astray. Ollis noted that other aspects of DR i.e. resiliency, could always be added later but the key is to classify historic DR now.

David Lowrey, Comverge, noted the difference between hard and soft triggers.

Schultz stated that resiliency is very different than reliability. Frank Brown, BPA, liked reliability over contingency.

Pratt commented that when filling out the form he was confused by MW, wondering if it's nameplate, evaluated or average peak day. He suggested a comment field or asking specifically for nameplate. Jayaweera agreed saying the column has been split and Maximum could be the same as nameplate. Pratt suggested using the word Nameplate to avoid confusion.

Steigers disagreed saying that Maximum is what is obligated for, noting that a 10 MW machine may only be obligated for 2MW. He they stated the other column should include the result, i.e. if you contracted for 30MW but only got 20MW.

Salmi Klotz suggested the word "Contracted." Zeecha Van Hoose, Clark PUD, offered "Nominated." Reedin agreed with "Nominated."

Lowrey addressed "Average Deployed" saying that sometimes there is partial dispatch and the difference between nominated and average can get tricky. Jayaweera added clarifications in the note field. Salmi Klotz felt this would be more important when discussing rating/derating DR in planning. Ollis asked if the form is getting too expansive or is still useful.

Hall stated that it will be filled out but predicted a lot of variability. He pointed to a need to protect an aggregator's professional reputation. He noted the need to oversubscribe to get to an amount but was concerned about how that could be characterized. Jayaweera related that the adequacy study is the main use for this work. She thought there should be a Realization Rate column but remained sensitive to Hall's concerns.

Ollis restated the question most important for modeling purposes: How do we come up with a number we can count on. He noted that realization rate, with sensitivity to commercial issues, should be explored.

Reedin suggested cross-referencing with the NERC reporting standards.

Bill Henry, EQL, asked how this will tie into the definition of DR. He suggested nailing down a base definition and then exploring specificity that could feed back into the templet.

Ken Nichols, EQL, asked if people want to share costs in terms of dollars per kW year and the M&V method. Jayaweera stated that the M&V method would not be included in the template but acknowledged it's an important question that will be addressed in the future. Nichols said the sources of the data is important to quality.

Pratt stated that a qualifier is important and would not be hard to put into a drop-down or comment field.

Pratt noted that end uses and seasonality matter in planning and suggested a drop-down with the basics: residential AC, commercial irrigation etc. Jayaweera stated those were left off to be mindful of the burden on participants. Pratt stated that he was typing them into the note field to tell the whole story on seasonal availability.

Jayaweera added “10 min ahead” to the Notification Protocol column.

Hall asked if there is an issue with time zones. Ollis agreed that time zone should be specified.

Quentin Nesbitt, Idaho Power, asked if “Cost” was cost of program or cost of event? Ollis specified that it would be good to know the cost of a program and a reasonable planning assumption for a dispatch price. He acknowledged the commercial sensitivity but said both pieces are valuable as we get closer to the Eighth Plan. Nesbitt stated that he files reports every year that are open and hoped the spreadsheet will be built to correctly track that.

Hall pointed to the difference between a one-year demo price versus a 10-year program price. He suggested costs could be a range rather than deterministic.

Jayaweera suggested adding “Testing” to Objective. Ollis suggested not adding it but explaining it in the note field.

Jayaweera asked if “Technology Used” should be added or if End Use covers it. Nesbitt pointed to the differences between Technology and End Use. Jayaweera noted the overlap between the two and the possibility of identifying the Controller Technology. Ollis called this information nice to have but too granular for modeling. Nesbitt stated that this information was really important for when they researched programs.

Piette stated an upside of collecting this information is the ability to understand the market over time. Ollis suggested adding the column. Pratt suggested re-clustering the columns. Jayaweera agreed.

Jayaweera said she will incorporate the suggestions and redistribute the results ahead of the June meeting where a final product can be approved.

BREAK

DR Definition

Hall asked that the notes reflect that transmission providers are power system operators, noting distinct products for transmission and power services.

Doug Sansom, NRG, asked if there is room in the definition for aggregators. Ollis thought so. Jayaweera pointed to a phrase “two or more participating parties” which should cover them.

Piette asked if critical peak price or DR tariff will be considered. Ollis answered that that was the intention of the language and asked her to point it out again if it doesn't. Ahlmahz Negash, Tacoma Power, asked if "agreement" includes a rate. Ollis noted that the language became more general as more ideas were added, but "agreement" could be direct load control, tariff or pricing agreement.

Eckhart addressed the "short term" in the first line of the definition and asked if there was a definition of that. Ollis moved to [Slide 6], saying short term means non-permanent.

Steigers suggested adding "intentional" to short-term change. He then stated that the aggregator role is implicit in the definition as it is. Finally, he stated "short-term" is less about duration and more about intent which differentiates DR from EE.

Hall addressed "duration of an event" which should not be confused with duration of a contract. Ollis agreed.

Lowery noted that when and what relies on agreement or request but request was taken out of the definition. Ollis pointed to "request by one" to encompass behavioral DR. Lowery called the wording confusing. Ollis agreed and asked for ideas.

Pratt suggested temporary for short-term.

Schultz suggested editing the first two sentences from the definition. Ollis defended the second sentence to exclude curtailment.

Usibelli suggested simplifying the second sentence to a "change based on an agreement between participating parties." Ollis asked how to incorporate behavioral DR.

Reedin suggested "voluntary short-term change."

Piette noted programs with penalties for lack of response. She pointed to a California program called OBMC, Optional Binding Mandatory Curtailment, calling it terrible. Ollis asked if OBMC is a DR program. Piette said yes and remained concerned about the word "voluntary."

Lea Fisher, Industrial Customers of NW Utilities, asked what bucket curtailment would go into if not DR. Ollis noted that the Council plans for adequacy but doesn't consider steps to keep the grid up, like rolling blackouts, DR.

Steigers voiced approval for the word "agreement" calling it both flexible and implying knowledgeable assent on both sides. Ollis agreed, but asked if that incorporates behavioral DR. Steigers felt that it did.

Osborn called for ending the definition after “two or more participating parties,” for a straightforward elevator pitch. Reedin stated that dropping the “needs” sentence muddies permanent load shifting.

Ollis asked for Reedin’s definition of permanent load shifting. Reedin agreed that it is a gray area but pointed to California utilities’ Ice Bear programs. Piette suggested that dispatchable load shifting could be defined as DR.

Lowery stated that permanent load shifting is important for planning but not DR. Ollis stated he would check with other Council staff for more insight.

Nichols agreed that permanent load shifting doesn’t belong in the discussion. Salmi Klotz noted that fuel switching could be permanent load shifting too.

Usibelli noted that needs may vary over time and should be separated from the definition.

Ollis asked if “economic” and “reliability” captures all the power system’s needs. Hall called attention to the needs of fish operations. Ollis stated that the fish constraint could be part of both like emissions.

David Nightingale, WA UTC, noted that environmental policy can come down on either part of the equation depending on other variables. Ollis recalled the struggle to balance granularity and the desire to have a broad definition. Nightingale argued that excluding them from the definition leaves out political reality and should be included.

Piette stated that the definition needs to say clean, reliable and economic.

Ollis noted the desire to create a definition that works for a broad group of stakeholders.

Osborn suggested substituting “reliability” with “operational needs.”

Steigers felt the definition addresses this as the operator has to frame any constraint in terms of economics or reliability. Linvill agreed, noting that needs are all driven by policy.

Nightingale stated that perhaps “needs informed by policy” would add finesse.

Fisher asked what the Why is for the end-use customer. She asked for the inclusion of an incentive for customers to participate. Ollis agreed that that was an issue for others but again pointed to behavioral DR and asked if incentive encompasses it. Fisher agreed that incentive is broad enough to include financial and other reasons. There was agreement in the room.

Henry advocated breaking the definition into two parts: a broad, general definition and a set of discrete DR products.

Pratt pointed to the importance of "getting good press." He thought the words "incentive," "voluntary" and "clean" are good words that could help gather public support. Ollis noted that the Council's definition must be broad, forward-looking and respectful all stakeholders.

LUNCH

RTF Exploration
Jennifer Light, RTF Manager, Council Staff

Light said that the RTF is looking for expert volunteers for follow-up discussion [Slide 5].

Jayaweera asked if the DRAC will/should have a similar relationship to the RTF as the CRAC and asked for thoughts. Eckhart noted that Ollis excluded energy efficiency in the DR definition and wondered if the RTF's charter would be broadened. Light answered that DR is not in the RTF's charter as of yet, but the group is trying to understand the lift and funding necessary to take advantage of synergies and skill sets.

Bud Tracy, Consultant from Idaho, stated that he sees a relationship that could improve both entities and approved of a tie. He pointed to potential long-term benefits of DR that could flow through to conservation and be effectively illustrated by the RTF.

Hossein Haeri, Cadmus, pointed to the more expansive role DR is taking in energy efficiency and agreed that there is an obvious role for the RTF. He asked what the next step should be. Light reported that the RTF has been given the latitude to work on a pilot example; technical analysis of the EE and DR savings of connected thermostats. She stated that the RTF is looking for volunteers to help to them understand the DR numbers and other issues presented on [Slide 5].

Volunteers: Lee Hall, Rob Pratt, David Lowery, Ahlmahz Negash.

Light thanked the room, noting that others are free to engage. She stated she will come back with new information in June.

PNW Smart Grid Demonstration
Lee Hall, BPA

Jayaweera noted that the DRAC webpage includes links to this report and others. She encouraged others to share their information there too.

Linvill asked for information on any of the participating utilities leveraging their projects. Hall stated that PGE is successfully leveraging a 5MW battery in a microgrid in South Salem. He also stated that Avista had a large deployment of smart meters and is continuing to move ahead with DVR and automated controls. He pointed to other regional utilities not in the report, SnoPUD, Central Lincoln, etc., that have had success as well.

Eckhart asked about the interval data on Avista's smart meters, noting that California has a huge smart meter program but the data collected and stored is small. Hall admitted that the process is IT intensive and requires coordination between IT, customer service and power operations across the agency.

Pratt stated that there was a lot of AMI data collected at 15-minute intervals, but doubted if it was public. Eckhart suggested that the data could be scrubbed of personal information, calling it a shame not to have. Pratt agreed.

Pratt then moved to trans-active control, saying it is not a commercial technology right now nor is prices-to-devices. He stated that the DRAC has to crawl before running, but in the long run these technologies will be important.

Osborn spoke about the need for communication standards in DR. He urged including communication standards in RFPs.

Fred Heutte, NW Energy Coalition, asked about the DR component of the South of Alston Pilot. Hall stated that he's not sure if he can talk about it publicly yet. Heutte stated that it looks like a significant, at-scale effort.

Usibelli referenced the T&D and generation benefits, asking if he picked up any opportunities related to deferred generation and if this framework could help us further understand them. Hall thought this could help but not with the same accuracy and reliability that the Council's resources plan can.

Ollis asked about the strategy used to get the whole organization—IT, customer service, etc.—on board. Hall admitted that the BPA is different than a vertically-integrated utility that touches the end-use customer. Lee said utilities told him every stakeholder should be at the table early. He pointed to BPA's cross-agency DR sponsor team, calling them helpful.

BREAK

CA Distributed Energy Resource Models
Mark Rothleder, CAISO, Jill Powers, CAISO, Carl Linvill, RAP

Nichols asked for an explanation of No Baseline [Slide 8]. Rothleder stated that this model is not tailored for DR but for a battery storage device metered directly and on the system.

Nichols asked if behind-the-meter generation is allowed [Slide 10]. Rothleder answered yes.

Pratt asked for a description of the most common new performance evaluation baselines. Powers explained that they are an expansion of traditional baseline methodologies: 3x3, control group and weather-based evaluations.

Pam Sporborg, PGE, asked for further discussion about the role of DR in the DERP Model, wondering if there is overlap between the DERP program and the PDR program.

Rothleder answered that they are separate, as is RDR and have to pick one. He then acknowledged that all can be used and overlaid in the energy and balance market.

Osborn asked if the scheduling coordinator has a direct link to the ISO or if they work through the utility. Rothleder answered that the scheduling coordinator could work either way. Osborn then asked about data transfer protocols. Rothleder replied that metering has to meet our data requirements. He further explained that a scheduling coordinator metering entity reads the meter and submits the data to the ISO.

Osborn asked about controls to dispatch the units, particularly the five-minute time period. Rothleder answered that they are direct from the ISO to the scheduling coordinator, noting that it is an aggregator's responsibility to decide individual responses.

Sporborg asked how an individual, 1MW or greater resource would participate. Rothleder noted that DERP is .5MW or greater, and 1MW or greater could not be in aggregation. He suggested choosing an alternative model if they wanted to participate: NGR or PDR.

Hall noted that BPA does not put a limit on aggregated load, acknowledging that it is an apples-to-oranges comparison. Nevertheless, he was interested in the 1MW limit as someone with a 1.1MW load may not have the internal resources to participate. Powers explained that the PDR doesn't have a limitation, but the DER aggregation does.

Nichols inquired about the bid times/duration of the contract [Slide 19]. Rothleder stated that the bid time granularity is on an hourly basis and are due to us about 75 minutes before the hour. Nichols stated that the provider has no guarantee of participation or revenue on a day-to-day or long-term basis. Rothleder countered that that sounded more like a long term, resource adequacy product which DRP is not. He noted the others could count towards resource adequacy if they meet flexibility requirements.

Henry asked for the current requirements for a PDR resource to get resource adequacy credits. Rothleder answered a four-hour duration that can be called two days in a row for the month.

PSE Zonal/Nodal Pricing
David Mills, PSE
Mills discussed assessing the market benefits of DR, with a focus on system attributes. He noted PSE's struggle with valuing DR, and called Zonal/Nodal pricing valuable as the location of the resource needs to be addressed.

He requested that the group look hard at the value of location as it moves forward, acknowledging that it is a new way of thinking. He called the low cost of gas and the removal of coal potentially harmful to the value of DR because of low avoided costs. He acknowledged that

PSE is now looking at the T&D losses on average for their system—what he calls the peanut butter approach—but will be pushing them to go one step further.

He concluded by asking the group look at locational/zonal/nodal pricing and stated that he will also be pushing for a capacity market.

Hall referenced PNUCC's responsibility to value T&D deferment for the Plan and noted that pricing should be location and situation-based. Mills stated that it won't be long before there are micro-grid requests and regional distributed generation so this is an opportune time to explore the issue.

Nichols asked if PSE looked at different values in their system in their recent RFP. Mills answered no, the RFP asked for system-based price.

Sporborg asked if any DR resources are participating in EIM now or in the future. Mills stated he's trying to solve the system benefits issue first before tackling that. Sporborg asked Rothleder if any other EIM entities are bidding DR resources into EIM. Rothleder answered that they are but not at distribution level.

Pratt asked if this the goal is a zonal/nodal price for DR/DER or coupled to a wholesale price that generators are helping set. Mills answered the first initially but admitted that he is looking toward overall cost of non-displaced energy.

Ollis welcomed suggestions on how to obtain planning-level, nuanced information to come up with locational margin pricing. Mills offered to give the issue some thought, noting the challenges, especially with the huge volume of data.

DR Barriers
Tina Jayaweera, NPCC

Haeri suggested classifying barriers in two to three dimensions, noting that the barriers on [Slide 3] are for the DR administrator. He proposed looking at barriers from different market participants, end-use customers, aggregators, etc. He stated that the barriers listed do not apply to distributed energy resources. Jayaweera reminded him that the focus is only on DR but called his point about different parties good.

Fisher asked where program design, duration and stop/start time fall. Jayaweera suggested breaking up the Institutional category. Fisher noted that aggregated results to a survey to Industrial Customers of NW Utilities members could be shared next meeting. Jayaweera thanked her.

Negash asked how a willing customer whose utility doesn't need the resource can participate. Ollis agreed that that is a tricky issue. Hall referenced the 1980 Power Act which specifies standards for a resource.

Hall then stated that consumer acceptance is another barrier referencing the potential of water heaters. Pratt agreed, saying that he can't think of a bigger barrier. He then stated that the magnitude of incentive for peak load DR is not enough for a consumer when coupled with our low electricity prices. He concluded by saying all of the individual barriers are listed but there is synergy between them as well. Haeri agreed.

Hall suggested adding intuitional lack of knowledge and organization buy-in, as well as NERC-based barriers.

Osborn referenced East Coast market barriers of using DR as a non-wire alternative for distribution likening it to using a fault-economic for a broad-based program. Nichols stated that for those examples he would suggest a broad-based program with higher incentives and more marketing. Osborn countered that a company-wide program with different incentives is problematic.

Ollis compared this to the early days of Energy Efficiency where a critical mass has to be reached before it's trusted and accepted.

Hall suggested looking at other examples from around the country, like Texas or California, to see how they are pushing DR into the commercial realm.

Sporborg added that DR is chasing a moving target, noting that five years ago CA was looking at a mid-day reduction programs and now they are selling mid-day energy at negative prices. She stated that understanding the value of DR in a world where flexibility and capacity are becoming more valuable than the underlying energy is a challenge.

Haeri noted that historically utilities and program administrators worried about DR's uncertainty: cost and reliability. He stated that DR service providers have taken cost out of the equation which leaves availability.

Pratt said that institutions must understand that this is long-term, especially if they want customers to invest in DR equipment. He likened it to buying a learning curve. Reedin stated that from an IOU perspective DR is not a profit-center but perhaps impedes profits. Sporborg added that 100% of costs come from rate payers as do 100% of the benefits, so there is no shareholder value split. Lowrey agreed.

Lowrey suggested adding contractual barriers to [Slide 4]. Osborn suggested a lack of regulatory mandates, calling them very effective. Sporborg countered that cost effectiveness should come before regulation. There are nods of agreement in the room.

Ollis referenced language in OR Senate Bill 1547 that talks about cost effective DR which meets both concerns. Jayaweera stated that valuation must be figured out first.

Haeri wondered if DR should be looked at from a TRC or utility perspective, noting that with DR most benefits come from load management.

Bobby Castaneda, CLEAResult, stated that customer acceptance has been augmented by developing options and communications. He called the message to participants clouded by the aggregator model and traditional DR programs. He suggested looking at enhancing the customer experience to getting more adoption. He wondered about ways to get around cost effectiveness barriers for other market segments, i.e. small business, Multi-Family, low-to-moderate-income asking to innovate together.

Pratt agreed, noting that the region has figured out market transformation with EE. He noted that DR is about half the cost for a new building versus a renovation. Jayaweera noted that Jeff Harris, NEEA, will presenting in June.

Mike Hoffman, PNNL, agreed that figuring out the business proposition for all the players is the biggest task, as it was for EE.

Jayaweera thanked the room, ending the meeting at 4.

Attendees on Site

Tina Jayaweera	NPCC
John Ollis	NPCC
Kevin Smit	NPCC
Jennifer Light	NPCC
Charlie Grist	NPCC
Bud Tracy	Consultant, Idaho
Jason Salmi Klotz	Oregon PUC
Adam Schultz	Oregon DOE
Lee Hall	BPA
Mark Osborn	Cadmus
Zeecha Van Hoose	Clark PUD
Alex Reedin	PGE
Rob Pratt	PNNL
Tom Eckhart	UCONS, LLC
Carl Linvill	Regulatory Assistance Project
John Steigers	Energy Northwest
Bryce Yonkers	Smart Grid NW
Doug Sansom	NRG
Ahlmahz Negash	Tacoma Power
Teague Douglass	CLEAResult
Lea Fisher	Industrial Customers of NW Utilities
David Lowrey	Comverge
Pam Sporborg	PGE
Tony Usibelli	WA State Dept of Commerce

Attendees via Webinar

Bobby Castaneda	CLEAResult
David Nightingale	WA UTC
Elaine Markham	PSE
Elizabeth Osborn	NPCC
Frank Brown	BPA
Fred Heutte	NW Energy Coalition
Gregory Brown	RTF CAT
James Gall	Avista
James Mater	Quality Logic
Jennie Potter	LBNL
Kiley Faherty	PSE
Kyla Maki	Montana Energy
Lori Moen	Seattle City Light
Kelly Marrin	Applied Energy Group
Mary Ann Piette	LBNL
Jennifer McMaster	BPA
Mike Hoffman	PNNL
David Mills	PSE
Eli Morris	PacifiCorp
Quentin Nesbitt	Idaho Power
Peter M. Schwartz	LBNL
Robert Wilcox Jr.	
Ross Holter	Flathead Electric
Mark Rothleder	CA ISO
Shauna McReynolds	PNUCC
Wade Carey	Lincoln PUD
Will Price	EWEB
Bill Henry	EQL