BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 10-05-006 (Filed May 6, 2010)

WOMEN'S ENERGY MATTERS OPENING BRIEF

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Barbara George, Executive Director
Women's Energy Matters
P.O. Box 548
Fairfax CA 94978
415-755-3147
wem@igc.org

Table of Contents

Introduction: WEMBPP uses preferred resources to replace nuclear power ... 1
Excess power collides with reduced demand ... 2
What sort of power resources are the utilities procuring and dispatching? ... 3
Hedging behaviors ... 3
Community Choice Aggregators seek reduced waste in the system ... 4
Power glut threatens to push aside cleaner, more affordable resources ... 4
Energy Efficiency *increases* Reliability ... 4
WEM's proposal in EE Rulemaking would free up funds for real procurement ... 5
Distribution is the Missing Link: Making EE and DG visible to the LTPP ... 5
PG&E refuses to map the location of solar PV and EE ... 6
Uncounted EE and solar means California has an even greater power surplus 7
PG&E witnesses in 2006 LTPP had no idea how to use EE as a resource ... 8
IOU EE programs fail to prioritize measures to reduce air conditioning load ... 9
Ample potential exists for WEM's proposed grid-reliable Demand Reduction ... 10
Residential Programs —Weatherization Behaviors *(US tends to do more)* ... 10
CEC Demand Forecast still murky about energy efficiency program impacts ... 10
Can EE address the peak or is it really only a "baseload" resource? ... 10
Local Area / Service Area requirements and VARs ... 12
Edison, too, dismissed EE resources ... 12
Prospects for solar DG to fill in some of the blanks in SCE territory ... 13
Advanced inverters for solar PV would provide VAR support ... 14
NRC failed to consider earthquakes in relation to emergency planning ... 14
PG&E and Edison are *still* trying to cover up the lack of earthquake planning ... 14
Issues within CPUC purview: the reliability of the grid and cost of energy ... 15
California nukes face heightened scrutiny ... 17
PG&E still dawdling on replacing obsolete unfixable monitor/controls ... 18
Fukushima calamity rapidly remaking the world's electricity landscape ... 19
Panel: Nuclear Plants Fail to Account for Japan Scenario ... 19
Japan may have no nuclear reactors running by next April ... 20
Americans also turning against nukes ... 21
Fukushima demonstrates enormous threat to utilities finances, CA economy 21
Japan: Credit Outlook Cut On Fears About Fukushima, ... 22
S&P cuts TEPCO rating to junk, says bank write-offs more likely ... 22
After Nuclear Crisis, Japan's Biggest Utility Faces Insolvency Risk ... 22
Could a nuclear accident poison California's agriculture? ... 23
False low-balling of radiation impacts could pose financial risk ... 24
Is the increase in baby deaths in the NW US due to Fukushima fallout? ... 24
Even "normal" nuclear power operations deadly according to German study ... 25

SUMMARY OF RECOMMENDATIONS

WEM RECOMMENDS that the Commission focus on targeting clean resources to address Local Area Reliability for San Onofre and System Reliability for Diablo Canyon, so that whenever the plants go offline (whether the outages are planned, inadvertent, or catastrophic), we would have clean resources available to replace their power, in accordance with the State's Energy Action Plan..... 1

To that end, we proposed for EE providers to be able to bid into procurement solicitations, whether in bilateral transactions or RFOs, as they currently do in the six states served by ISO-New England. This would be most affordable, and would offset higher costs of renewables..... 1

WEM also recommends that the Commission ensure that small-scale renewables and Distributed Generation can be interconnected quickly at a reasonable cost, so that they may also be used to serve load..... 1

In addition to addressing the nuclear power issues, WEM RECOMMENDS using the same procedures to allow California to decrease peak demand in hot, inland areas. This would enable California to close polluting "once-through-cooling" power plants sooner, clean up notoriously dirty air (some of the worst in the country), and make faster progress towards AB32 goals, reducing greenhouse gas emissions..... 2

Community Choice Aggregators (CCAs) and Direct Access entities use the utilities' distribution systems, and would benefit from improvements to make them more conducive to distributed resources. WEM RECOMMENDS that the Commission take note of these aligned interests..... 4

WEM RECOMMENDS that the Commission ensure that the advantages of distributed resources, including energy efficiency, are weighed fairly in utilities' procurement plans..... 4

Meanwhile, in this LTPP, WEM recommends a new kind of grid-reliable EE (new to California although it's been used successfully in other states) that would be allowed to bid into solicitations for power supplies. We'll call these "Demand Reduction Contracts" to differentiate them from EE programs..... 5

The distribution system needs to become transparent to the Long-Term Procurement Planning process. WEM RECOMMENDS that this proceeding order a public review of the distribution planning process by Energy Division and interested parties, regular progress reports, independent evaluation and verification of the work, and ongoing opportunities for input..... 6

WEM also recommends convening a separate proceeding to consider all the issues that arise around utility distribution systems as we enter the 21st century era of "Smart Grids" and "Microgrids."..... 6

WEM RECOMMENDS requiring utilities to formally track and report location data for energy efficiency as well as solar (and Electric Vehicles as they become more widespread), correlated with transmission/distribution substations, and incorporate

this information into load forecasts and decision making about the need for new energy supplies and/or upgraded T&D facilities. *7*

WEM RECOMMENDS that the Commission re-examine and hopefully retire the outdated concept of "behind the meter," which leads resource planners to dismiss contributions of EE and solar to overall power supplies. *8*

WEM RECOMMENDS that the Commission order utilities to allow Demand Reduction contracting to provide greater market-based opportunities to provide clean alternatives to supply-side resources. *10*

WEM RECOMMENDS that the Commission formally recognize that energy efficiency can reduce peak load as well as baseload. *11*

WEM RECOMMENDS that CPUC adopt mandatory requirements for Measurement and Verification of Demand Reduction resources, comparable to ISO-New England's Manual for Measurement and Verification of Demand Reduction Value from Demand Resources. *13*

WEM RECOMMENDS that the Commission order SCE to target its 500 MW Solar PV Program to address Local Area requirements for San Onofre Nuclear Generating Station and to assist in providing backup power for the reactors and fuel pools as well as VAR support for the grid. *13*

With all due respect to the ALJ who has stated that this phase of this proceeding will consider neither steel-in-the-ground nor steel-out-of-the-ground, WEM nevertheless owes it to our constituency to recommend immediate shutdown of San Onofre and Diablo Canyon nuclear power plants, in view of the risks to grid reliability and the costs to ratepayers and to California's economy, which are becoming ever more clear with the ongoing Fukushima Daichii tragedy. Risks and *16*

costs are compounded by the failure of the Nuclear Regulatory Commission and California utilities to include earthquake or tsunami dangers in emergency planning. Even in non-earthquake scenarios these risks and costs are increased by many factors which WEM described in its testimony and explored further here, such as the use of decrepit, unfixable 1970s analog technology to monitor and control the reactors. California has a precious opportunity to make the decision to close its reactors today, ending the unacceptable risk of a nuclear disaster before experiencing irreversible harm. *16*

TABLE OF AUTHORITIES

Cases
SLO Mothers for Peace v. US Nuc.Reg., 789 F.2d 26 14

CPUC Decisions
D0906049 13
D1105005 4

California Public Utilities Code
PU Code § 365.19(c) 4
PU Code §398.1-398.5 Power Content Label 3

Other Regulations
Energy Action Plan 1

CPUC Ruling
December 3, 2010 Scoping Memo 1
February 10, 2011 Ruling (R1005006); Attachment 1: Standardized Planning Assumptions (updated) 2, 7
February 28, 2011 Ruling 1

ISO-New England Regulations
ISO-New England 11, 13
Manual for Measurement and Verification of Demand Reduction Value from Demand Resources 1

CAISO Regulations
2012 Final LCR Study Results Big Creek/Ventura and LA Basin 12

State Water Resources Quality Control Board
Once-through-cooling Resolution 2

California Energy Commission decisions
2009 IEPR 5
CPUC HVAC High-Impact Measure Programs 2006-2008 Program Year Final Consultant Report 9

WOMEN'S ENERGY MATTERS
OPENING BRIEF

Women's Energy Matters (WEM) appreciates this opportunity to provide an Opening Brief in Track 2 of this Long-Term Procurement Proceeding pursuant to the December 3, 2010 Scoping Memo and the revised schedule in the February 28, 2011 Ruling. WEM was granted an extension of time to file on June 20, 2011 instead of June 17th.

Introduction: WEMBPP uses preferred resources to replace nuclear power

WEM Testimony presented the outlines of an Alternative Bundled Procurement Plan (WEMBPP) that would provide for immediate retirement of both San Onofre and Diablo nuclear reactors and the replacement of all nuclear power supplies (including Palo Verde in Arizona) with preferred resources, particularly EE and local solar Distributed Generation (DG).

WEM RECOMMENDS that the Commission focus on targeting clean resources to address Local Area Reliability for San Onofre and System Reliability for Diablo Canyon, so that *whenever* the plants go offline (whether the outages are planned, inadvertent, or catastrophic), we would have clean resources available to replace their power, in accordance with the State's Energy Action Plan.[1]

To that end, we proposed for EE providers to be able to bid into procurement solicitations, whether in bilateral transactions or RFOs, as they currently do in the six states served by ISO-New England.[2] This would be most affordable, and would offset higher costs of renewables.

WEM also recommends that the Commission ensure that small-scale renewables and Distributed Generation can be interconnected quickly at a reasonable cost, so that they may also be used to serve load.

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[1] *Energy Action Plan II was* adopted October 2005 by CPUC and CEC. *See* www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF The 12-3-10 Scoping Memo Track II, p. 4 stated: "All resource and procurement planning in this proceeding will be done in the context of the Energy Action Plan II (EAP II) and other state energy policies."

[2] See ISO-New England, Manual for Measurement and Verification of Demand Reduction Value from Demand Resources, posted at http://www.iso-ne.com/rules_proceds/isone_mnls/index.html (see **M-MVDR (Revision 3) 05-06-11**).

In addition to addressing the nuclear power issues, WEM RECOMMENDS using the same procedures to allow California to decrease peak demand in hot, inland areas. This would enable California to close polluting "once-through-cooling" power plants sooner,[3] clean up notoriously dirty air (some of the worst in the country), and make faster progress towards AB32 goals, reducing greenhouse gas emissions.

In this Opening Brief, we summarize our proposal and further explore solutions to the barriers to accomplishing our plan, including those rooted in traditional views of the distribution grid and power purchasing. We also provide updates on the implications of the ever-growing Fukushima disaster for grid-reliability and costs of California's nuclear power plants.

Excess power collides with reduced demand

WEM's Chart submitted with our Opening Testimony, *Excess Energy with or without Nuclear Power* use the figures from the Planning Assumptions,[4] which make it clear that California has a vast excess of power resources. Utilities are required to keep 15% reserves, but there's up to 50% more than that today — and also in 2020.

Historic low interest rates encouraged IOUs and merchant generators to overbuild in recent years (especially PG&E's natural gas power plants; Edison's planned construction spree was blocked by air quality regulators).

For an old-fashioned vertically-integrated utility monopoly in a status quo energy world it would have made sense to do this, because all customers would benefit from lower costs 15-30 years out, even if the power weren't needed for more than decade as is currently true in California.

But it's time to rethink these old truisms. California ratepayers have been hard hit by the recession — we have over 11% unemployment, higher than the rest of the US. While reeling from the worst economy crisis since the Great Depression, IOU ratepayers

[3] California's State Water Resource Control Board (SWRCB) Once-through-cooling Resolution was adopted 5/4/10, Effective 10/1/10.

[4] February 10, 2011 Ruling (R1005006); Attachment 1: Standardized Planning Assumptions (updated), pp. 17-21.

are being forced to build a fleet of natural gas plants that's obsolete before the ground is even broken. We are also paying for construction of large scale renewables, plus energy efficiency, local solar PV and other "distributed generation", combined heat and power and demand response — which are all chasing the same dwindling load.

While California seems to be making an effort to adopt clean energy, the slow progress towards the renewable portfolio standard (RPS), the failures of energy efficiency programs, and the constant power plant construction tell a different story.

The pressing problems of dirty air, nuclear waste, the reality of climate change, and the potential for catastrophic nuclear accidents calls for a greater sense of urgency and a very different type of plan.

What sort of power resources are the utilities procuring and dispatching?

WEM's Testimony pointed out that the percent of the dirtiest resources in California's power mix — coal and natural gas — shot up during years with nuclear outages.

The lack of transparency makes it difficult to determine exactly what utilities are paying for these resources or what becomes of them. Only utility planners, their hand-picked Peer Review Groups (PRG) and the Independent Evaluator (IE) knows what utilities are buying for at least three years.

Hedging behaviors

In view of the cost of this large excess capacity, it would help to know, are resources (a) sitting idle with no contracts; (b) mostly idle, only providing power to utilities in a very limited time-frame (e.g. peakers), (c) idle because they lack transmission access, (d) "spinning reserves" i.e. running at low power, ready to be cranked up if needed at any time, or (e) running as efficiently as possible? How much of the power from these plants is being sold to other entities in California, or across state lines, even to Mexico or Canada? To what extent are utilities dabbling in derivatives based on all these variables, or attempting to corner certain markets?

Community Choice Aggregators seek reduced waste in the system

Departing load, whether through Direct Access (DA) or Community Choice Aggregation (CCA) has an interest in reducing the amount of excess power capacity they'll be saddled with thanks to SB695.[5] Utilities, on the other hand, seek to increase capacity and foist it onto other customers while they can.

Community Choice Aggregators (CCAs) and Direct Access entities use the utilities' distribution systems, and would benefit from improvements to make them more conducive to distributed resources. WEM RECOMMENDS that the Commission take note of these aligned interests.

Power glut threatens to push aside cleaner, more affordable resources

While there is no plan to build resources in this proceeding – whether conventional or renewable — it is worrisome that the glut will further stall the integration of renewables for bundled customers, and virtually prevent movement towards small scale renewables and distributed resources (solar, energy efficiency and CHP).

WEM believes these distributed resources are the most economical (because of power saved on line losses and reduced need for transmission or even distribution). They are also the most advanced, forming the basis of the tantalizing "microgrid" that remains more hypothetical than real.

WEM RECOMMENDS that the Commission ensure that the advantages of distributed resources, including energy efficiency, are weighed fairly in utilities' procurement plans.

Energy Efficiency *increases* Reliability

The Energy Commission recognized that energy efficiency *increases reliability of the electricity system* in multiple ways:

> By reducing demand, energy efficiency increases the reliability of the electricity system because it reduces stress on existing power plants and transmission and distribution infrastructure. Efficiency also reduces the demand for new power plants, which can help reduce the state's dependence on natural gas. Further, less demand for electricity will help soften potential reliability impacts on the electricity system from the retirement of the state's fleet of aging power plants

[5] PU Code § 365.1(c); CPUC implementing decision D1105005.

> and plants that use once-through cooling. Finally, less overall demand for electricity could mean less renewable energy will be needed to meet California's Renewables Portfolio Standard, which can indirectly buffer the impacts of integrating large amounts of renewables into the system. 2009 IEPR, p. 64.

WEM's proposal in EE Rulemaking would free up funds for real procurement

The Energy Efficiency Rulemaking is currently considering whether to add a "bridge year" or possibly two, after the 2010-12 cycle, because everything is so far behind schedule. WEM urged the Commission to reduce funding and reduce the surcharge on ratepayers, because the EE programs have been saving less and costing more, for reasons that are unrelated to actual potential. Mostly they are due to flawed "avoided costs" used in EE, which greatly underestimate the value of the highest peak load.

Meanwhile, in this LTPP, WEM recommends a new kind of grid-reliable EE (new to California although it's been used successfully in other states) that would be allowed to bid into solicitations for power supplies. We'll call these "Demand Reduction Contracts" to differentiate them from EE programs.

If WEM's proposals are adopted in both proceedings, the result would be greater energy savings that are fully relevant to procurement planners and ISO, with less impact on ratepayers.

Distribution is the Missing Link: Making EE and DG visible to the LTPP

Currently, the CAISO has no direct information about what's taking place on the distribution system. This is a problem that prevents both energy efficiency and distributed generation (DG) from full recognition as energy resources.

In PG&E's 2011 General Rate Case (GRC), WEM learned that PG&E has a profoundly insular process to determine distribution needs and priorities, controlled by a single program manager with virtually no oversight. This person gathers input from 18 "Local Area Planning Groups" from Engineering and Operations who:

> prepare load growth studies, identify area and equipment overloads, and quantify capacity deficiencies… prepare detailed forecasts… for the next five years… then develop project cost estimates…" PG&E Testimony, Vol. 3, p. 9-2 (A0912020).

The program manager assesses each project, creates a yearly program plan and funding proposal, presents it to PG&E's management for approval, and then manages the program.

Thus, PG&E's electric distribution forecasting methodology is old-school – PG&E controls the inputs as well as access to the information on which the forecast is based, without oversight or public review.

The distribution system needs to become transparent to the Long-Term Procurement Planning process. **WEM RECOMMENDS that this proceeding order a public review of the distribution planning process by Energy Division and interested parties, regular progress reports, independent evaluation and verification of the work, and ongoing opportunities for input.**

WEM also recommends convening a separate proceeding to consider all the issues that arise around utility distribution systems as we enter the 21st century era of "Smart Grids" and "Microgrids."

Currently, distribution issues are only addressed in General Rate Cases, where they are thrown in with dozens of other issues. GRCs primarily address financial concerns, with little time to explore engineering and operations issues that are essential for fully integrating energy efficiency and renewables, especially solar Distributed Generation.

PG&E refuses to map the location of solar PV and EE

PG&E's Testimony in the GRC revealed that it ignores solar PV and energy efficiency in its load forecast — ***because it doesn't know where it is:***

> PG&E load forecasting methodology *does not specifically adjust for* changes in peak load because of *increased customer photovoltaic installations, customer Energy Efficiency (EE) Programs,* or increased load due to EV increased penetration. The affect these *system-wide programs* have on peak loads are *not easily quantifiable on a DPA level, division or geographic area*. **Therefore, PG&E cannot exactly know where reductions or increases will occur.** Additionally, it is difficult to project each of these items impact on the actual peak load. PG&E Testimony, Vol. 3, p. 9-12 (A0912020) (emphasis added).

This is nonsense. In fact, PG&E knows exactly where every grid-connected PV system is installed because PG&E hooks them up! PG&E also knows where energy efficiency measures are installed — because they control all EE programs, and they provide location data to evaluation, measurement & verification (EM&V) contractors who verify that the work was done.[6]

The problem is that PG&E refuses to track this important data.

PG&E's dismal record keeping has been much in the news this year, following the San Bruno pipeline explosion. It may seem counterintuitive to expect this utility to map even more complex data. However, in the age of computers, it really shouldn't be that big a deal.

The utility hides information about its distribution system as if it's a shameful secret — which it probably is. However, the Commission really needs to pry open this black box sooner rather than later.

WEM RECOMMENDS requiring utilities to formally track and report location data for energy efficiency as well as solar (and Electric Vehicles as they become more widespread), correlated with transmission/distribution substations, and incorporate this information into load forecasts and decision making about the need for new energy supplies and/or upgraded T&D facilities.

Uncounted EE and solar means California has an even greater power surplus

Since utilities have failed to collect and report information about either energy efficiency or solar, California's power surplus is even greater than depicted in WEM's chart submitted with our Testimony, *Excess Energy with or without Nuclear Power,* which was based on the Planning Assumptions attached to the February 10, 2011 Ruling.

It might have been acceptable to ignore these resources when there was just a smattering of EE and solar in the system, but now that California spends a billion a year on EE, and more and more on solar, California ratepayers need to know that these resources count.

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[6] EM&V provides very detailed information about the savings impacts of every EE item — so in reality it would be simple "to project each of these items impact on the actual peak load."

WEM RECOMMENDS that the Commission re-examine and hopefully retire the outdated concept of "behind the meter," which leads resource planners to dismiss contributions of EE and solar to overall power supplies.

PG&E witnesses in 2006 LTPP had no idea how to use EE as a resource

In the last LTPP hearings in 2007 (R0602013), WEM questioned PG&E procurement witnesses about their ability to reduce peak load with EE, by making EE eligible to bid in RFOs. They appeared to be confused that they were even being asked. WEM's Opening Brief in that case described our cross-examination of PG&E's chief procurement planner:

> Mr. Antonio Alvarez, "manager of Long-Term Energy Policy and Planning in the Energy Procurement organization" for PG&E had apparently never considered this sort of thing. He hesitated to embrace it, citing EE's lack of dispatchability and operational flexibility (i.e. attributes of supply-side resources, not EE). Mr. Alvarez was unable to visualize that simply *removing* a certain amount of load with EE would also remove the need for an equivalent amount of power that met those criteria. (He was also unable to imagine energy efficiency occurring outside the EE program structures.)
>
> Q …Would your next solicitation -- or, first of all, has your last solicitation included energy efficiency?
>
> WITNESS ALVAREZ: A I'm not sure that I can answer the question. What I can say is that -- and we have said many times before -- is that our recommended plan starts with the loading order. And we have included all the goals that the Commission has for energy efficiency in all of the scenarios…

The ALJ stepped in to prompt the witness to address the question:

> ALJ BROWN: Now, is -- at the current time, is energy efficiency considered a demand-side resource?
>
> WITNESS ALVAREZ: Yes, it is.
>
> ALJ BROWN: All right. Is it also considered at the current time to be a supply-side resource that could bid into an RFO?
>
> WITNESS ALVAREZ: I don't see why not. I guess my -- my -- our approach here has been to take energy efficiency first, and reduce it -- reduce the load first to account for energy efficiency, as we have done in all four plans.
>
> We have also stated that after accounting for all the preferred resources, there is a procedural need,

9 but that procedural need is for operationally flexible
10 and dispatchable resources. And energy efficiency
11 doesn't quite do that.
12 So I don't think it would be appropriate for
13 me in meeting that particular need, because it doesn't
14 help, you know, with the operating flexibility.
6-14-07 LTPP Transcript, Vol. 9, pp. 1087-88 (R0602013).

The great advantage of energy efficiency is that it eliminates demand, and eliminates the need for power resources, of whatever type, with whatever characteristics.

IOU EE programs fail to prioritize measures to reduce air conditioning load

There are a great variety of ways EE can reduce the peak. Unfortunately, very few of them are ever addressed in EE programs. This is in part because the "Avoided Costs" in the EE world fail to value peak EE at anywhere near the actual value of supply resources.

The Commission tolerates utilities building peaker power plants to run just a few hours a year at an absurd cost to ratepayers — but far cheaper EE resources that could accomplish the same ends are knocked out because they aren't "cost-effective" — by the different standards that for some reason are applied in EE proceedings.

Reportedly the EE proceedings will improve EE avoided costs figures but it's not clear yet whether they will fully incorporate the highest summer peak. These 560 hours are where operators of "peaker" plants make almost all of their money.

WEM reported in our 2007 LTPP opening brief that "the current framework of EE programs includes very little efficient HVAC or other air cooling measures; *WEM demonstrated that at the rate we are going it would take 350 years to exhaust the potential for efficient residential air conditioning reported in the 2002 Potential Study*. WEM 8-1-07 Opening Brief, p. 16 (R0602013).

Now we have the sad results of 2006-08 programs; for all three years of the cycle, CA IOUs achieved *only 30MW* of peak reduction and 26,174 MWh from efficient air conditioning![7]

[7] CPUC HVAC High-Impact Measure Programs 2006-2008 Program Year Final Consultant Report (Study ID:CPU0028.01) Submitted: February 10, 2010, Volume 1, pp. 17-22. http://www.energydataweb.com/cpuc/home.aspx

Ample potential exists for WEM's proposed grid-reliable Demand Reduction

Clearly there is plenty of potential, especially in the residential sector, that EE providers could tap into for Demand Reduction contracts.

California families lag behind the rest of the US in relatively common energy saving behaviors that would help a lot to reduce peak demand from air conditioning:

> **Residential Programs — Weatherization Behaviors** ***(US tends to do more than California)***
> ◦Installing new EE HVAC systems
> ◦Changing heating and cooling system filter
> ◦Performing annual maintenance on HVAC
> ◦Adding weather-stripping or caulking around windows/doors
> ◦Adding / replacing windows & doors with EE products
> ◦Adding insulation to attic or under door
> Source: 2010 California Baseline for Energy Conservation & Efficiency: Findings for Customer Marketing, Education & Outreach (power point for 6-14-11 EM&V stakeholders meeting), slide 17, presentation by Carol Edwards, Ph.D., Southern California Edison, Jane Peters, Ph.D. and Mersiha Spahic, Research Into Action[8]

WEM RECOMMENDS that the Commission order utilities to allow Demand Reduction contracting to provide greater market-based opportunities to provide clean alternatives to supply-side resources.

CEC Demand Forecast still murky about energy efficiency program impacts

CEC is still unclear about how much EE is or isn't really in the system based on EE programs; WEM will discuss these issues in our Reply Brief and Track 1 comments.

Track 2 will only consider about five years of the CEC demand forecast, and there is so little demand that PG&E didn't even seem to feel it was worth talking about it in its BPP.

Can EE address the peak or is it really only a "baseload" resource?

It's high time for the Commission to correct an inexplicable error that has existed far too long. Utilities (and NRDC) insist that EE is a "baseload" not "peak" resource. For

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[8] Documents for 6-14-11 EM&V Stakeholder meeting at http://www.energydataweb.com/cpuc/home.aspx

example: Appendix C to the IOUs' Draft "Energy Efficiency Strategic Plan" (Application 08-06-004) contained this response to WEM comments:

> **DSM Coordinate & Integrate**
> Coordinate energy efficiency and procurement planning to reduce peak demand at strategic locations - WEM - p. 3
> [IOU response:] Energy efficiency is fundamentally a base rather than a peaking resource. Acknowledged. Appendix C, p. 14.

WEM had submitted a copy of ISO-New England's Manual for measuring Demand Side resources with our 7-31-08 Comments on the Strategic Plan, and described some of the features of it in our comment:

> New England ISO Guidelines Address the Use of Energy Efficiency as a Resource
> WEM has recently obtained the New England ISO's *Manual for Measurement and Verification of Demand Reduction Value from Demand Resources* (attached). The Manual provides a wealth of information about what types of things grid operators value and what they need to know about energy efficiency projects in order to utilize them on an equal basis with supply-side resources.
> As WEM predicted, revealing the location of energy efficiency installations is key (see General Requirements, p. 2-2), and there are many other important metrics and values that are not yet on the radar in California's energy efficiency system. The Manual states unequivocably, "Demand Resources [including energy efficiency], may participate in the Forward Capacity Market." (p. INT-3) Projects are explicitly allowed to qualify as Peak resources (p. 1-2). HVAC and Building Envelope are two of several types of measures that are singled out for discussion of specific measurement requirements (p. 9-2). Requirements for measuring electrical system impacts of all projects are explained (p. 10-2).
> The Manual requires monthly reporting to make sure the energy efficiency resources are installed and operating correctly (p. 13-1). And last but not least the Manual warns of audits and unannounced spot checks, and prosecution for fraudulent savings claims (p. 13-4).
> WEM 7-31-08 Comment re CPUC Strategic Planning, p. 5.[9]

WEM RECOMMENDS that the Commission formally recognize that energy efficiency can reduce peak load as well as baseload.

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[9] The latest version of the Manual is posted at http://www.iso-ne.com/rules_proceds/isone_mnls/index.html (see **M-MVDR (Revision 3) 05-06-11**). WEM also filed information about ISO-New England's Manual and results of its auctions in this LTPP (R1005006) with our 2-24-11 PHC Statement.

Local Area / Service Area requirements and Voltage Area Regulation services

ISO sets local area capacity requirements (LCR) as well as service area requirements for each Load Serving Entity (LSE).[10] The local area requirements may result in additional procurement in this Track 2.

WEM discussed some of these issues with Southern California Edison's procurement planner, Dhavli Dagli, on June 17, 2011. He is SCE's witness responsible for the non-renewable resource procurement segments of its testimony.

Mr. Dagli described several lively power trading markets, some as short as an hour ahead, where SCE actively participates.

He said San Onofre is more than just a local area resource; it's at a critical point on the grid, so it serves as an anchor for the transmission system where power passes to or from as far away as Arizona and Mexico, by providing VAR (Volt-Ampere Reactive) services. He felt that alternative sources of VAR would be a matter for Track 1 or the ISO.

Edison, too, dismissed EE resources

SCE's procurement planner, Mr. Dagli became agitated when I asked about using EE as a substitute for the resources purchased from the markets. He insisted this was not a possibility. At first he objected in terms of the shortest time frames — an hour or a week from now. We agreed with him that only Demand Response could serve that need. But then he rejected the whole idea of using EE instead of building supply side resources:

> We need to talk apples/ apples – we can compare coal, gas, biogas – in the end, it still flows to the customer's switch – that's what we need to procure. These are specific commitments. Carry tremendous penalties if supplier cannot deliver at that time. Very severe financial consequences. I don't think there are those kinds of consequences in EE. BG phone conversation with Dhaval Dagli, June 17, 2011.

I agreed that energy efficiency *programs* as currently practiced have no consequences whatever for missing their targets.

I stressed to him that the Demand Reduction contracts WEM is proposing would operate separately from these programs, and be independently verified according to

[10] ISO presented its 2012 Final LCR Study Results Big Creek/Ventura and LA Basin (served by San Onofre) in a power point for the April 14, 2011 Senate Energy Committee hearing on Nuclear Power.

rigorous standards. The ISO-New England guidelines WEM has proposed for this purpose do in fact impose serious penalties for not meeting commitments.

We'll have to work with Mr. Dagli and other procurement planners at California IOUs to overcome their deep suspicion of EE resources.

WEM RECOMMENDS that CPUC adopt mandatory requirements for Measurement and Verification of Demand Reduction resources, comparable to ISO-New England's *Manual for Measurement and Verification of Demand Reduction Value from Demand Resources*.

Prospects for solar DG to fill in some of the blanks in SCE territory

SCE received approval for 500MW of solar DG, 250MW of which would be utility-owned generation (UOG) (in R08098009). Since then, it has pulled back on this commitment, and recently filed a Petition for Modification to restructure the program as follows:

> "The instant Petition requests that the Commission restructure SCE's existing 500 MW Solar PV Program in two ways:
>
> 1.) Reassign 250 MW to a separate competitive solicitation within the Solar PV Program that will not be subject to the current parameters of the IPP portion ("IPP Revised");4 and,
>
> 2.) Reduce the current UOG and original IPP portions of the Program respectively to an amount of no more than 125 MW each.
>
> Thus, if the Commission adopts this Petition, the 500 MW5 Program will be designated as follows:
>
> 1) no more than 125 MW as UOG;6
>
> 2) 125 MW for IPPs under the original solicitation process; page 7 and,
>
> 3) 250 MW for an IPP Revised solicitation.
>
> Based on the success of the existing Solar PV Program and other procurement mechanisms, SCE believes that the revisions proposed in this Petition will significantly reduce the costs of the Solar PV Program going forward. The Commission has recognized that SCE's Solar PV Program and its other procurement efforts "suggest that the market for smaller scale projects appears robust with a significant number of competing sellers." SCE Petition for Modification of D0906049, p. 8. http://docs.cpuc.ca.gov/efile/PM/130810.pdf

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WEM RECOMMENDS that the Commission order SCE to target its 500 MW Solar PV Program to address Local Area requirements for San Onofre Nuclear

Generating Station and to assist in providing backup power for the reactors and fuel pools as well as VAR support for the grid.

Advanced inverters for solar PV would provide VAR support

Currently, capacitors provide VAR support on distribution circuits.

New GE wind turbines have built-in reactive power support. With advanced inverters you could do same with solar – even rooftop solar.

NRC failed to consider earthquakes in relation to emergency planning

WEM's Testimony and Response to Motion to Strike established that NRC failed to consider earthquakes in emergency planning for either San Onofre or Diablo. This has never been rectified. The point can hardly be overemphasized: EARTHQUAKE PLANNING WAS MISSING FROM EMERGENCY PLANS CURRENTLY IN PLACE FOR BOTH SAN ONOFRE AND DIABLO.

WEM presented excerpts from NRC closed hearings on emergency planning for Diablo NPP in 1984 and the decision on appeal, which revealed:

(1) NRC failed to consider the impacts of earthquakes (or tsunamis) in emergency planning for San Onofre;
(2) NRC planned to grant a license to Diablo without considering earthquakes in emergency planning, and it intended to cover up that fact.
(3) The DCPP license was in fact granted without considering earthquakes or tsunamis in emergency planning
(4) The Federal Appeals Court denied the Appeal by Mothers for Peace, backing the NRC's decision to avoid looking at earthquakes in emergency planning.

PG&E and Edison are *still* trying to cover up the lack of earthquake planning

The arguments presented in PG&E/SCE's Motion to Strike Testimony of WEM and Pacific Environment attempted to mislead the Commission about the facts, seeking to cover up the lack of earthquake planning. They claimed that the NRC regulations and the DCPP/SONGs licenses would show that earthquakes were in fact considered — *but gave no volume or page references*. Because of course, it wasn't true.

Their attempted coverup indicates that they understand that the lack of earthquake consideration in emergency planning was an unacceptable omission, especially in today's climate.

PG&E (and now Edison) have promised to conduct earthquake studies in the future, pursuant to request by the Legislature. PG&E's studies will not be completed for three years, at least. *However, neither company offered to shut down their NPPs pending completion of these studies*.

Issues within CPUC purview: the reliability of the grid and cost of energy

While the Nuclear Regulatory Commission was given exclusive jurisdiction over the "safety" of NPPs, the State of California retains jurisdiction over the reliability of the grid and the cost of energy portfolios, among other things. Inadequate emergency planning affects both these matters.

In this proceeding, CPUC considers whether utilities' plans adequately address grid reliability, at a reasonable cost; in doing so it weighs "uncertainties" related to costs and risks. The Commission has the authority to take action to phase out, shut down, and replace nuclear power in California.

WEM acknowledged the NRC's federal pre-emption on safety issues. We also offered our opinion that the evidence clearly shows the NRC failed in its duty to protect public safety when licensing San Onofre and Diablo.

In more than two dozen years (for Diablo) and three dozen for San Onofre, the NRC has yet to recognize or rectify its error in ignoring earthquakes. Lest anyone assume that in the aftermath of Fukushima, NRC would see the need to act, the agency recently demonstrated that it continues to stonewall:

> [Bill Borchardt, executive director for operations of the U.S. Nuclear Regulatory Commission] said that since the magnitude 9.0 quake and ensuing tsunami hit northeastern Japan on March 11, his agency has carried out a review of the 104 operating nuclear plants across the United States and confirmed their safety.
>
> "The initial findings of the short-term task force is that **we have not identified any issues that undermine our confidence in the continued safety of the U.S. plants or in the emergency planning for those facilities** although it is entirely expected that they will recommend some actions for evaluation that would enhance either safety and/or preparedness activities," he said. 5-27-11

> Mainichi Daily News (Japan), *U.S. regulator saw serious Fukushima fuel damage soon after disaster*[11]

Just because the NRC keeps its head firmly buried in the sand doesn't mean California can do nothing on its own. Quite the opposite: because of NRC's failure to discharge its responsibilities, CPUC needs to proactively take action to protect the grid from disruptions and protect ratepayers from unreasonable costs caused by a nuclear catastrophe resulting from earthquakes and tsunamis — and from the compounding of such disruptions and costs resulting from inadequate emergency planning.

With all due respect to the ALJ who has stated that this phase of this proceeding will consider neither steel-in-the-ground nor steel-out-of-the-ground, WEM nevertheless owes it to our constituency to recommend immediate shutdown of San Onofre and Diablo Canyon nuclear power plants, in view of the risks to grid reliability and the costs to ratepayers and to California's economy, which are becoming ever more clear with the ongoing Fukushima Daichii tragedy. Risks and costs are compounded by the failure of the Nuclear Regulatory Commission and California utilities to include earthquake or tsunami dangers in emergency planning. Even in non-earthquake scenarios these risks and costs are increased by many factors which WEM described in its testimony and explored further here, such as the use of decrepit, unfixable 1970s analog technology to monitor and control the reactors. California has a precious opportunity to make the decision to close its reactors today, ending the unacceptable risk of a nuclear disaster *before* experiencing irreversible harm.

Avoiding a decision to close the plants in this proceeding constitutes a de facto decision to keep them running, unless and until the Commission opens some other proceeding to consider that issue.

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[11] http://mdn.mainichi.jp/mdnnews/news/20110527p2g00m0dm018000c.html

California nukes face heightened scrutiny

Even the Nuclear Regulatory Commission has expressed concern about the poor "safety culture" at the San Onofre Nuclear Generator.

An alert from Mothers for Peace (longtime watchdog group in San Luis Obispo) sent 6-12-11 about an upcoming NRC meeting on Diablo provided new details on some of the issues WEM has been asking the Commission to address here in the LTPP:

> SEISMIC ISSUES
> 1. We are hearing a great deal about plans to study the Shoreline Fault by 2015. What are the NRC requirements and PG&E commitments to similarly study the other faults in the area, specifically the Los Osos and San Luis Bay, and Diablo Cove faults? (The Diablo Cove fault cuts the bedrock foundation of Unit 1 and may well intersect with the Shoreline fault.) [Source, D. Hamilton letter to Jaczko dated March 23, 2011, p. 3 paragraph 4]
> 2. We are repeatedly assured that there is no tsunami threat at Diablo because the plant is at an elevation of 85 feet. However, the ocean water intake is obviously at sea level…
> 3. A published paper, "Large California Tsunamis from Central Coast Historians and Central Coast Newspaper Records", documents 4 tsunamis destroying Avila and Pismo Beach wharfs ranging in height between 55 and 100 feet between 1812 and 1913. The scientific paper concludes, "Emergency planning for Central Coast tsunamis should be anticipating tsunami waves in the 50 to 100 feet elevation range." The paper was presented at the American Geophysical Union, Fall Meeting 2009.
> http://adsabs.harvard.edu/abs/2009AGUFMNH31B1113B
> …
> PREPAREDNESS FOR EXTREME EVENTS
> (See NRC inspection report ML11133A310 dated May 13, 2011)
> 1. Emergency response plans rely on state highways and access roads that may be inaccessible after an earthquake that might be a triggering event. Is this acceptable to the NRC?
> 2. The six standby diesel generators are "susceptible to common problems because of similarities in design and location." Exactly where are these generators located? Can the diesel generators provide enough power to maintain cooling in both units simultaneously?
> 3. NRC inspectors found that PG&E cannot implement "Auxiliary Feedwater System Alternate Auxiliary Supplies" (the 230 KV preferred offsite power system) simultaneously on both reactors. This means that if both reactors lose power at the same time, there won't be enough auxiliary water to cool both reactors. Why doesn't the NRC shut down at least one unit at Diablo in the face of this inability to control the plant in case of a major event?
> 4. For what length of time are back-up batteries for the reactor and spent fuel pools required to be operable?

5. PG&E has fresh water reservoirs at 140 feet above sea level. How long will that source of water be able to cool the reactors?

6. PG&E has a contract with a third party to supply an alternate seawater source for cooling water in case of a Beyond Design Basis event. However, this contractor would have to use the state highway system to transport equipment to the site following an accident. The roads may be impassible. PG&E states that they have another contract with the CA National Guard to supply diesel fuel to the site when the main road is unavailable. How will the National Guard deliver fuel to the site under these circumstances? How does a contract, a piece of paper, overcome inaccessibility of roads should an earthquake destroy bridges or panicked citizens clog them?

…

EMERGENCY RESPONSE PLANNING

1. How was the 10 mile emergency planning zone set? The NRC speculates that during any accident, 1% of the nuclear fuel fails and out of that 1%, 95% is held inside the nuclear containment. Let's assume that the containment leaks at 1/2% per day. That's the basis for the NRC's determination for the 10 mile emergency planning zone around reactors. It's all based on postulation – and it has been shown to be invalid by the disasters in Fukushima. Will the NRC be placing new requirements on emergency plans?

2. Given that the Environmental Protection Agency advised all Americans within 50 miles of Fukushima to evacuate; will this become the new standard within the U.S.?

3. Why doesn't the NRC require training of the general public for nuclear emergencies, rather than only for first responders?

PG&E still dawdling on replacing obsolete unfixable monitor/control components

A timeline PG&E submitted to the NRC for a 6-7-11 meeting shows that the company is behind schedule in almost every task needed for replacing the "Eagle 21," one of the ancient pieces of analog equipment that the company declared in its 2011 General Rate Case to be malfunctioning and unfixable.

WEM's Testimony and Response to PG&E and Edison's Motion to Strike provided excerpts from PG&E's General Rate Case testimony, which described the Eagle 21 and the larger Hagan Process Control System which are both 1970s analog technology that needs to be replaced with digital equipment. They have the essential role of monitoring and controlling the reactor.[12]

[12] ALJ Allen stated that there was no need for WEM to enter the GRC excerpts into evidence since the quotes in WEM's filings were already part of the record.

WEM requested information about this project from the NRC, and asked whether analog to digital conversions have been done at other reactors. NRC replied that there had been just one other replacement of equipment similar to the Eagle 21. PG&E is the guinea pig for NRC staff's effort to guide the process:

> "This project has been discussed for over 3 years and is not new. What is new is Diablo is the pilot plant for the use of new staff guidance on how to implement an analog to digital conversion." 6-8-11 email to Barbara George from Alan Wang (NRC Meeting Leader) re 6-7-11 NRC meeting w PG&E staff re Eagle 21 replacement.

Fukushima calamity rapidly remaking the world's electricity landscape

It's been six and a half weeks since WEM filed its proposal to prepare for imminent shutdown of California's nuclear power plants (planned or inadvertent), and to begin to replace that power with cleaner, more affordable energy efficiency, local renewables, distributed generation and other preferred resources. We noted that when nuclear power plants were offline in recent years, the use of the dirtiest power — coal and natural gas — went up noticeably.

A lot has changed in just the last month and a half, as the world comes to grips (willingly or not) with more of the implications of the ongoing Fukushima tragedy. Very significantly for California's reliability questions, the longtime avoidance of similar vulnerabilities by US nuclear regulators has become less and less tenable:

> **Panel: Nuclear Plants Fail to Account for Japan Scenario**
>
> A team of experts says U.S. nuclear safety rules do not sufficiently take into account the risk that a single event could knock out power from the nation's grid and emergency generators. … According to the experts, the United States has analyzed the risk of losing power from the grid or from on-site emergency generators, but not both at the same time. The task force was formed in the wake of Japan's Fukushima Daiichi nuclear plant disaster, in which both sources of power were simultaneously disabled. June 17, 2011 Amy Goodman report on Democracy Now, Pacifica national network radio/TV show. See, http://www.kpfa.org/archive

In early June, two and a half months after the accident, the horrifying news began to break that there had been three complete meltdowns in the reactors in the first days after the earthquake and possible meltdowns in spent fuel pools as well. Radioactivity

contaminating both the local area and wafting around the world was far greater than originally revealed.

The people of the world are turning decisively against nuclear power, and their governments are beginning to follow suit. Germany announced permanent shutdown of all reactors on a rapidly accelerating timetable. In a June 13th referendum, Italians voted 94% for shut down, with a turnout of over 57% (50% turnout was required for the vote to count).[13]

Reuters reported June 8th that the public's revulsion against nuclear power in Japan may result in the closure of all 54 reactors in that country within as little as a year, despite dire warnings of $30 billion a year increased energy costs:

> **Japan may have no nuclear reactors running by next April**[14]
>
> All 54 of Japan's nuclear reactors may be shut by next April, adding more than $30 billion a year to the country's energy costs, if communities object to plant operating plans due to safety concerns, trade ministry officials said on Wednesday.
>
> Since the March 11 earthquake and tsunami, which triggered a radiation crisis at the Fukushima Daiichi plant north of Tokyo, concern among local authorities has kept nuclear generators from restarting at least four reactors that had been expected to come online after routine maintenance and inspection…
>
> Although a reactor is legally cleared for restart once it receives approval from the Nuclear and Industrial Safety Agency (NISA), a trade ministry watchdog, nuclear operators always seek local government approvals as well, in recognition of the importance of support from the community around the plant.

Japan's local governments would be right to hold their ground in spite of scare stories about $30 billion/year costs of clean energy. Compare this to estimates of $150 billion near-term costs from the disaster, with untold billions more in future years — and nothing to show from it but death, disease and ruin, vast areas uninhabitable for hundreds if not thousands of years, poisoned fish, agriculture and water supplies throughout the country (and lethal contamination reaching many other nations).

By contrast, funds spent on renewables will result in thriving new industries. Indeed, Germany's conservative premier, Angela Merkel, embraced renewables with the

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[13] **Italy's Voters Scrap Nuclear Energy!** June 14, 2011, Common Dreams http://www.commondreams.org/view/2011/06/13-5

[14] http://www.reuters.com/article/2011/06/08/us-japan-nuclear-reactors-idUSTRE7572P920110608

expectation of being at the forefront of a lucrative clean technology and manufacturing and export boom.

All the nuclear phaseout plans being discussed around the world focus on renewable energy alternatives, with greatly increased energy efficiency as the first step. WEM's Bundled Procurement Plan is clearly aligned with the leading edge of mainstream world opinion.

Americans also turning against nukes

American sentiment, too, is trending against nuclear power, even though US major media has taken Hilary's warning to heart, all but removing Fukushima from the news to avoid "frightening" anyone with facts, amidst all those feel-good energy company ads.

We're a little behind the rest of the world, in part because we have a longer, more complex history of nuclear involvement, and the industry's lobbying and public relations machine is very strong here. Several major "news" networks (NBC, MSNBC, CNBC etc.) are literally owned and operated by GE, manufacturer of Fukushima reactors as well as many US reactors (and nuclear weapons). The President and Secretary of State are both heavily indebted to nuclear interests (their home state Illinois has eleven nukes, the most of any state). Obama's Secretary of Energy was plucked right out of Lawrence Berkeley National Lab (LBNL), the original incubator for nuclear technology here in the Bay Area since the 1920s.[15]

Fukushima demonstrates enormous threat to utilities finances, California economy

Day by day, the economic news worsens for TEPCO, owner of Fukushima-Daichii. The difficulty of restoring power supplies and infrastructure are prime concerns. The nuclear disaster now threatens the Japanese banking industry, other major corporations, and local and national government finances.

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[15] WEM is familiar with LBNL's cavalier attitude towards radioactive dangers, since Barbara George authored the *Contamination Chronicle of LBNL,* which gave a brief history of the "Rad Lab" and a detailed account of the how LBNL's National Tritium Labeling Facility periodically belched radioactive tritium into a half dozen creeks and the Lawrence Hall of Science (a few yards above the NTLF in the Berkeley hills). When monitors registered heightened readings, they were simply removed.
http://www.womensenergymatters.org/nuclear/pdf/Contamination%20Chronicle%20of%20LBNL.pdf

California should take these problems very seriously, because this could be our future too:

Japan: Credit Outlook Cut On Fears About Fukushima,

The continuing Fukushima nuclear crisis is proving to be a greater threat to the health of the Japanese economy than the impact of the March 11 quake and tsunami… Fitch Ratings said the reason for the changed outlook was the risks associated with the continuing Fukushima nuclear power plant crisis.
Fitch rates Japan an AA- risk as a long-term local currency risk.

"There is considerable downside risk for the public finances from the still-unknown cost of cleaning up the Fukushima nuclear plant, ***while delays in restoring power supplies could lead Fitch to revise down its 2011 growth forecast from 0.5%.***

"***There is a further risk that prolonged delays in restoring infrastructure could lead more Japanese corporates to consider relocating their activities abroad, leading to a greater permanent loss of output from the disaster…***" 5-30-11 Japan: Credit Outlook Cut On Fears About Fukushima, International Business Times (Australasian Investment Review) (emphasis added).[16]

S&P cuts TEPCO rating to junk, says bank write-offs more likely

The ratings agency said it viewed a default on the utility's 5 trillion yen ($62 billion) in corporate bonds as less likely than a restructuring of its bank debt.
Ratings agency Standard and Poor's cut its credit rating on Tokyo Electric Power to junk status on Monday, saying the utility's bank lenders were more likely to be forced to write off debt as part of a restructuring scheme to compensate victims of an ongoing nuclear crisis…
"Standard & Poor's now believes that some politicians think banks should share the burden in some form, which may fall into our definition of default," S&P said in a statement... ***Tepco is Japan's largest corporate bond issuer and its shares are widely held by financial institutions.*** 5-30-11 Yahoo News India (Reuters). (emphasis added)[17]

After Nuclear Crisis, Japan's Biggest Utility Faces Insolvency Risk

TOKYO — Far away from the battle to contain the nuclear crisis at the Fukushima Daiichi nuclear power plant, investors are increasingly edgy about a related issue: the fate of Tokyo Electric Power, the stricken plant's operator.
On Thursday, shares in Tokyo Electric again fell to a record low, at one point slumping to 148 yen ($1.85), down 93 percent from prequake levels. Shares finished at 192 yen ($2.40), down 4 percent from the previous day, and the company already had a 1.25 trillion yen loss in the year ending March 31, the largest annual loss for a nonfinancial institution in Japanese history.

[16] http://hken.ibtimes.com/articles/154072/20110530/japan-credit-outlook-cut-on-fears-about-fukushima.htm
[17] http://www.anhourago.in/show.aspx?l=8608100&d=502

> The physical damage from the accident at the Fukushima Daiichi nuclear power plant has been so widespread that even conservative estimates of compensation claims amount to tens of billions of dollars — a burden that could render Japan's largest utility insolvent…
>
> "Investors used to think, 'This is a utility. What's the government going to do, let it fail and let Tokyo go without power?' " said Yasuhide Yajima, the senior economist at the NLI Research Institute, an arm of Nippon Life Insurance. "But now their confidence is completely shaken," he said. "They're racing to offload their holdings before the share price hits zero."
>
> One cause for concern, analysts say, is the inability of a gridlocked government to complete a financial rescue plan for Tokyo Electric. To appease public anger over the disaster, the government has vowed to hold Tokyo Electric fully liable for the compensation claims that are likely to roll in from farmers, fishermen and others whose livelihoods have been disrupted in the crisis.
> A Bank of America-Merrill Lynch estimate puts the sum as high as $130 billion. (By comparison: BP's compensation fund for the Gulf of Mexico oil spill is $20 billion.)
> The Tokyo Metropolitan Government owns about 3 percent of Tokyo Electric's shares, and the city's finances have been thrown into disarray as share prices plunge and dividends are canceled. *After Nuclear Crisis, Japan's Biggest Utility Faces Insolvency Risk,* by Hiroko Tabuchi, NY Times, June 9, 2011[18]

Could a nuclear accident poison California's agriculture?

Nuclear expert Arnie Gunderson warns that W. Coast residents are inhaling 10 "hot particles" a day, and the food supply is being contaminated — even this far from Fukushima.[19] An accident at a CA nuclear plant or spent fuel pool could result in far worse contamination. *The potential for California's agriculture to become contaminated is an enormous risk for California's economy,* nothing to say of the health risks to the whole country's population, which depends greatly on California food supplies.

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[18] http://www.nytimes.com/2011/06/10/business/global/10tepco.html

[19] http://www.chrismartenson.com/martensonreport/part-2-arnie-gundersen-interview-protecting-yourself-if-situation-worsens "Arnie Gundersen is an energy advisor with 39 years of nuclear power engineering experience. A former nuclear industry senior vice president, he earned his Bachelor's and Master's Degrees in nuclear engineering, holds a nuclear safety patent, and was a licensed reactor operator. During his nuclear industry career, Arnie managed and coordinated projects at 70-nuclear power plants around the country. Arnie provides testimony on nuclear operations, reliability, safety, and radiation issues to the NRC, Congressional and State Legislatures, and Government Agencies and Officials throughout the US, Canada, and internationally." See: http://www.Fairewinds.com

False low-balling of radiation impacts could pose financial risk to nuclear utilities

The growing international furor over radiation "standards" that falsely downplay health impacts is a reason to close nuclear power plants sooner rather than later. It demonstrates the need for taking action based on common sense and the "precautionary principle."

It also poses a risk to power companies' financial health, because of the potential for damage suits. Tobacco companies hid behind the lack of federal recognition of the dangers of smoking (and helped fund misleading studies), but when the scams were finally exposed, the companies had to pay very large settlements.

PG&E has been far more than a recipient of NRC dictates; it has been a very active promoter of nuclear power through its excessive federal lobbying budget ($17 million in 2008, the highest of all utilities) and long-time membership in the Nuclear Energy Institute. PG&E has been a longtime funder of UC Berkeley's "RadLab" (renamed Lawrence Berkeley National Lab — LBNL).

WEM's Testimony pointed out that radiation standards in use today around the world misstate the effects because they are based on data from Hiroshima and Nagasaki — i.e. a one-time *external* dose – rather than radioactivity that is ingested or absorbed into the body and results in prolonged *internal* exposure. California, and particularly the Bay Area, have a particularly close relationship to this misinformation because so much nuclear technology was developed here.

WEM's Testimony cited the book, *Deadly Deceit,* by Jay Gould and Benjamin Goldman, 1990, who did a statistical analysis of death statistics in the US, demonstrating an increase of 40,000 premature deaths in the months after Chernobyl.[20] A similar increase in deaths has occurred on the West Coast since Fukushima:

> **Is the increase in baby deaths in the NW US due to Fukushima fallout?**
>
> The recent CDC Morbidity and Mortality Weekly Report indicates that eight cities in the northwest U.S. – Boise, Idaho; Seattle, Wash.; Portland, Ore.; plus the

[20] "These statistics showed a surprising 5.3 percent increase in the total number of deaths in the US. in May 1986 over the same month in the previous year. This was not only statistically significant… it was, in fact, the highest annual increase in May deaths recorded in the U.S. in 50 years. There were also high percentage increases in deaths in the three succeeding months… [In June] in the U.S. as a whole, infant mortality jumped 12.3 percent over the previous June. The infant mortality rate, defined as the number of babies dying in the first year per 1,000 live births, is one of the most sensitive indicators of monthly changes in public health." *Deadly Deceit,* p. 14.

northern California cities of Santa Cruz, Sacramento, San Francisco, San Jose and Berkeley – reported the following data on deaths among those younger than one year of age:

4 weeks ending March 19, 2011: 37 deaths (average 9.25 per week)
10 weeks ending May 28, 2011: 125 deaths (average 12.50 per week)

This amounts to an increase of 35 percent – the total for the entire U.S. rose about 2.3 percent – and is statistically significant. Of further significance is that those dates include the four weeks before and the 10 weeks after the Fukushima Nuclear Power Plant disaster. June 9, 2011 SF Bayview, Janette D. Sherman, MD, Joseph Mangano[21]

Even "normal" nuclear power operations deadly according to German study

National *Physicians for Social Responsibility* (PSR), calls for the de-commissioning of all currently operating nuclear plants in the US and urges members of Congress to refuse to subsidize the construction of new ones. It cites a German study showing that even "normal" nuclear operations are deadly:

> Several years ago, the German government commissioned a team of prestigious government-employed health scientists to design a state-of-the-art study of children <5 years who lived in the proximity of any of the 16 German normally operating nuclear power reactors. Presumably, the study was meant to assuage with maximum credibility the continuing citizens' concerns about observed childhood leukemia clusters around some of these reactors. Therefore, to my knowledge, it is the only government-sponsored radiation study ever that was designed with full input from and oversight by an independent scientific commission, including several members who had publicly supported the citizens' concerns. ***Contrary to their expectations, the government scientists found irrefutable evidence that for <5 year old children there exists an association between residence within 10 km of any of these reactors and a more than doubling of risk for contracting leukemia or other cancers.*** This amazing finding caused quite a stir in the German media (and remains underreported and unacknowledged in the US), but it has never been credibly refuted. May 30, 2011 *A Reckless Denial of Reality*: Clinging to the Nuclear Option, by Rudi H. Nussbaum (emphasis in the original).[22]

Dated: June 20, 2011 Respectfully Submitted,

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[21] http://sfbayview.com/2011/is-the-increase-in-baby-deaths-in-the-northwest-u-s-due-to-fukushima-fallout-how-can-we-find-out/

[22] http://www.counterpunch.org/nussbaum05302011.html A detailed description of the German study (in English), is posted at: http://www.beyondnuclear.org/storage/documents/WS1_thiel_Increased_Leukaemia_childhood_engl.pdf

/s/ Barbara George

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Barbara George, Executive Director
Women's Energy Matters
P.O. Box 548
Fairfax CA 94978
415-755-3147
wem@igc.org