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CALIFORNIA ENERGY COMMISSION

In the matter of,
Preparation of the
2011 Integrated Energy Policy Report
(*2011 IEPR*)

Docket No. 11-IEP-1J

COMMITTEE WORKSHOP

RE: California Nuclear Power Plant Issues

**JOINT COMMENTS OF WOMEN'S ENERGY MATTERS
AND ECOLOGICAL OPTIONS NETWORK
REGARDING CEC WORKSHOP ON
NUCLEAR POWER IN CALIFORNIA AND JAPAN**

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Women's Energy Matters (WEM) and Ecological Options Network (EON) appreciate this opportunity to submit these joint comments on Nuclear Power Plant issues, post-Fukushima.

These brief comments explore just a few of the issues raised at the workshop.

Other issues relating to California's nuclear power plants — and our recommendations to shut them down immediately and provide clean replacement power — are addressed in WEM's filings in the CPUC's Long-Term Procurement Proceeding, which we submitted in hard copy to Commissioners and staff at the 7-26-11 hearing on nuclear issues. We also attach these documents to this filing and incorporate them as part of these comments.

Introduction

We wish to refute certain inaccurate or misleading statements at the workshop by representatives of utilities and the Nuclear Energy Industry. Summarizing:

1. NEI: "In terms of station blackout – if you sit back & look at what happened at Fukushima - they had the earthquake – in Japan you have a quake you'll get a tsunami – what created the damage was the flood." THIS IS UNPROVEN AND MISLEADING. We discuss this in terms of the IAEA report, below.
2. Loren Sharp, PG&E: "what we have & are currently learning about Fukushima is that they did not suffer damage of spent fuel pools f quake." UNTRUE.
3. Caroline McAndrews, SCE: "We've done prelim analysis – in a true station blackout we could survive long enough time for diesels to be brought in and hooked up. [QUESTION – WHY AREN'T THEY ALREADY THERE?] In Fukushima – they brought in diesels w/in 24 hrs." BY THAT TIME THE FIRST MELTDOWN HAD ALREADY HAPPENED.

DISCUSSION

1. Damage from the Quake vs. the Tsunami:

Analysis of the International Atomic Energy Administration Report

On June 2, 2011 the International Atomic Energy Administration released a report with the grandiose title:

THE GREAT EAST JAPAN EARTHQUAKE EXPERT MISSION

**IAEA INTERNATIONAL FACT FINDING EXPERT MISSION OF THE
FUKUSHIMA DAI-ICHI NPP ACCIDENT FOLLOWING THE GREAT
EAST JAPAN EARTHQUAKE AND TSUNAMI
Mission date: 24 May – 2 June 2011”**

TEPCO waited until May 24 to announce that *any* of the Fukushima Daichi reactors had melted down — *much less three of them!* Is it just a coincidence that the IAEA “mission” started on the same day?

Both TEPCO’s tardy announcement and IAEA’s report are remarkably lacking in curiosity, much less information, about the role of the *earthquake* in the sequence of events that led to the meltdowns and the ongoing inability to bring the plants under control.

The Nuclear Energy Industry (NEI) presentation at the CEC workshop announced that it is involved with an attempt to create a timeline after the fact. This will likely only add to the misinformation.

The period between the earthquake and tsunami is hardly explored at all in the IAEA report.

In response to the earthquake, Units 1–3 automatically scrambled (shutdown). All six off-site power lines were lost as a result of the earthquake and all 12 of the available plant’s emergency diesel generators (EDG) started... About 46 minutes after the earthquake, the first tsunami wave hit the site. Ibid, p. 29.

Two more snippets described alternate cooling systems, which may have functioned for a while— however, there is no discussion of why these systems were unable to prevent the meltdowns. Were they fully intact? These questions remain unasked and unanswered, and furthermore there is IAEA’s caveat that these reports were “unconfirmed.”¹

Much more is said about what happened after the tsunami. Of particular interest is the lack of communications:

On the entire site, no means of communication between the On-site Emergency Control Centre (OECC) and on-site personnel executing recovery actions was available. Only one wired telephone was available between the OECC and each control room. Ibid, p. 29.

¹ Some systems were available to cool the cores in Units 1–3 after the earthquake. In Unit 1, the Isolation Condenser (IC) is designed to operate through gravity driven natural circulation of coolant from the reactor pressure vessel (RPV) through a heat exchanger immersed into a large tank of water in the reactor building at an elevation above the core. The Unit 1 IC was designed to have a decay heat removal capacity of about 8 hours. A valve must be manipulated to bring the IC into service. It was started at 14:52 on 11 March after the earthquake. *Although unconfirmed it appears to have operated for about 11 minutes and was then manually shutdown at 15:03 because the RPV temperature was dropping rapidly.* This action is consistent with the plant operating procedures which direct the operator to control the IC so that the RPV temperature reduction rate does not exceed 55°C per hour. [The Report goes on to say the system was restarted after the tsunami and worked for a few more days.] Ibid, p. 30A.

Were these communications lost after the earthquake or only after the tsunami?

These oddly limited reports by the company and the international agency promoting nuclear power appear to be part of an internationally coordinated coverup by the nuclear industry, which has severely tainted the “official” versions of the Fukushima story.

On May 1, Asahi news reported:

Japan, U.S. to tamp down radiation rumors

WASHINGTON--Japan and the United States agreed to work to dispel rumors that have prompted import restrictions and other measures imposed on Japanese goods on grounds of possible radioactive contamination. The agreement came during a 30-minute meeting between visiting Foreign Minister Takeaki Matsumoto and U.S. Secretary of State Hillary Clinton at the State Department...

Matsumoto conveyed appreciation for U.S. cooperation over the nuclear accident during meetings with Gregory Jaczko, chairman of the U.S. Nuclear Regulatory Commission, and U.S. Secretary of Energy Steven Chu. He also met National Security Adviser Thomas Donilon and Deputy Secretary of State James Steinberg. <http://www.asahi.com/english/TKY201104300101.html>

On June 30th the UK Guardian published *Revealed: British government's plan to play down Fukushima*:

British government officials approached nuclear companies to draw up a co-ordinated public relations strategy to play down the Fukushima nuclear accident just two days after the earthquake and tsunami in Japan and before the extent of the radiation leak was known.

[Internal emails seen by the Guardian](#) show how the business and energy departments worked closely behind the scenes with the multinational companies EDF Energy, Areva and Westinghouse to try to ensure the accident did not derail their plans for a new generation of nuclear stations in the UK.

<http://www.guardian.co.uk/environment/2011/jun/30/british-government-plan-play-down-fukushima?>

A July 2, 2011 expose by the highly respected Atlantic Monthly, *Meltdown: What Really Happened at Fukushima?* quoted extensively from interviews with workers at Fukushima who describe severe damages at the plant *before the tsunami*:

A second worker, a technician in his late 30s, who was also on site at the time of the earthquake, narrated what happened. “It felt like the earthquake hit in two waves, the first impact was so intense you could see the building shaking, the pipes buckling, and within minutes, I saw pipes bursting. Some fell off the wall. Others snapped. I was pretty sure that some of the oxygen tanks stored on site had exploded but I didn’t see for myself. Someone yelled that we all needed to evacuate and I was good with that. But I was severely alarmed because as I was leaving I was told and I could see that several pipes had cracked open, including what I believe were cold water supply pipes. That would mean that coolant couldn’t get to the reactor core. If you can’t sufficiently get the coolant to the

core, it melts down. You don't have to have to be a nuclear scientist to figure that out.”

As he was heading to his car, he could see the walls of the reactor one building itself had already started to collapse. “There were holes in them. In the first few minutes, no one was thinking about a tsunami. We were thinking about survival.”

A Japanese television NHK video also reported that the earthquake itself pushed the facility quickly beyond design basis, and there was no power, no monitors, too few people, and no communications during the critical period between the earthquake and the tsunami, when workers were fleeing the facility.

There are a huge number of unknowns in the timelines for each facility — in terms of what people were or were not doing at each unit. The facility was under staffed to deal with multi-system failure, not to mention that they didn't have enough onsite support equipment.

After the tsunami, approximately 400 people (about 130 for operation, about 270 for maintenance) were available for the recovery processes. The number of the operation people was totally insufficient for the recovery operation of six units...
- Only very limited devices and tools were available. Some of which were in the warehouses of the affiliated companies and difficult to find. Ibid, p. 86.

Of course they weren't prepared for an emergency, everybody was evacuating, going home to see how their families were etc. Emergency operations duty stations are something very different than normal operations, Since when would any facility have a bigger set of emergency personnel ready to be onsite than exist during normal operations? Nowhere did the report separate normal operations vs. emergency operations.

The report says:

- It is important for plants to identify and address all means initiating accident, including those that stem from natural phenomena.
- Internal events include equipment failures and human errors occurring within the plants such as pipe breaks, stuck valves, damaged pumps, instrument failures and operator errors. Ibid, p. 87.

However, the internal events **RELATED TO THE EARTHQUAKE** at Fukushima Daichi have not been identified!

TEPCO's logs on what occurred after the quake and before the tsunami were either nonexistent or suppressed. IAEA's report said nothing about any systematic inspection of the plants after the quake. Wouldn't that be part of emergency response? And yet, the IAEA uncritically echoed TEPCO's claims that everything was fine until the tsunami:

2. It was also reported that the three fundamental safety functions of (a) reactivity control, (b) removal of heat from the core and (c) confinement of radioactive materials were available until the tsunami reached the sites. Ibid, p. 71.

These findings support the idea that the tsunami was the problem. However, "it was reported" doesn't necessarily mean it should be believed. The credibility of Tepco's reports is extremely low. As noted above, this is a company that covered up the occurrence of three complete meltdowns for three months, and only released this news concurrently with the IAEA report. It's certainly possible that IAEA and TEPCO concocted a story that benefits the industry, and now the NEI is getting into the act as well.

Buried at the back of the IAEA Report is this admission of failure, which California should note because it certainly applies to us:

1. ...the magnitude of the disaster was not anticipated in the original and revised hazard assessments.
2. Consequently a contingency plan for the failure of multiple units at multiple sites within a regional disaster context was not available.

The report recommends greatly increased resources to deal with such disasters, but what does this mean in terms of expense, to have all these personnel and equipment available on standby, 24/7, 365 days, year after year?

2. Discussion of Utilities' comments

Note: EON videotaped the workshop and will post parts of it soon. What follows is a more complete transcript of remarks by utility representatives outlined in the introduction, above, along with links to sources that refute these statements.

Sandoval: ...if you can say publicly, how long is your extended blackout station capability if you lost your connection to the electrical grid?

SDG&E Rep.: ...again it is a pretty complicated answer. We have done some preliminary analysis and we have identified action, if we were to have a true station blackout where there would be no backup power we could survive a long enough time for ? generators to be brought in place, dropped in place and connected up. At Fukushima they did have capability they had brought emergency generators so I've been told within twenty four hours to the site.

The challenge there was that the connections were down low and they were flooded. Our connections are up at the 50 foot in a protected building.

So, again, what we're looking at is can we cope in an extended period of station blackout, and then could we import, bring in an emergency generator and we've looked at that and we find that we are in pretty good shape, although the evaluations are preliminary and so I can't say any more than that.

Sandoval: So when you talk about bringing in emergency diesel generators, are you bringing it in over land assuming the road would be functional?

SDG&E Rep.: So we're exploring the various options that could occur. Again, Fukushima's roads were not available and they still go emergency deisel generator in. So there ways in which things can be brought in. We're located right on the Marine Corps base. We've got resources that I think some mutual aid would help us.

Sandoval: When I was driving to the event in San Diego I saw tanks in that area, so there certainly tanks nearby. And then obviously we'd be following up on hydrogen control and mitigation measures. The hydrogen explosions at Fukushima were what started the catastrophe. So can you tell us a little bit about any actions to address the potential for that kind of hydrogen explosion.

SDG&E Rep.: So, uh, the information coming out about what caused the hydrogen explosion is still unclear and the location of those explosions....

Not true. see Gunderson: <http://www.youtube.com/watch?v=9ekvqLjdThk>

<http://eneneews.com/gundersen-confirms-massive-explosion-unit-3-spent-fuel-pool-hydrogen-video>

<http://economic-undertow.blogspot.com/2011/04/gunderson-speculation-on-fukushima.html>

Our containment structure is extremely large, so from the standpoint of having hydrogen build up within our containment, we have a large dry containment, that is not likely. In fact we did extensive analysis several years ago about hydrogen control and containment. Now, outside of containment, that was what really challenged Fukushima. We need to understand what was going on,....

...

CEC Commissioner Boyd: Getting back to diesel generators; did you mention how many generators you have on site?

SDG&E Rep.: We have four emergency diesel generators. They're located on opposite sides of the plant. They can be cross side, they're two free units.

CEC Commissioner Boyd: And how many days' backup supply?

SDG&E Rep.: Seven days.

Conclusion

We appreciate the Commission considering these comments.

Dated: August 2, 2011

Respectfully Submitted,

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