SAN ONOFRE
COMMUNITY
ENGAGEMENT
PANEL

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Dear Colleagues,

Our last meeting of the SONGS Community Engagement Panel (CEP) was tense and difficult as it dealt with an important yet highly contentious issue. The incident at hand concerned a used fuel canister getting wedged without support during downloading operations on 3 August, as well as the fact that something nearly similar happened in late July. The Edison team did not learn the right lesson from the July event—a canister hung up though properly supported—a lesson which could have prevented the event in August.

Today we write on two fronts.

First, we need your help to improve CEP community engagement.

On 29 November, led by Dan and Jerry, we tried a new process of soliciting questions about the main topic in advance (in addition to allowing on-the-spot public questions). Our sense is that worked relatively well, but needs streamlining—and the process of soliciting questions in advance must, as well, generate responses to all in-scope questions. We also tried two public comment periods including one solely dedicated to the central topic of the evening.

We welcome your observations and your input on how this process is working. More broadly, we invite your perspective on other potential reforms—for example, more small group meetings and interactive dialogues.

Second, we would like to summarize what we heard at the CEP meeting and the tasks that remain in front of Edison as it plans to restart fuel offloading.

Whenever emotions run high it is hard to focus on what we know and what to expect for the future. Moreover, before, during and after the CEP meeting many claims were made—claims about Edison stonewalling and not providing answers. SCE and the CEP are still in the process of getting all questions answered—both in-scope questions related to the downloading topic and out-of-scope questions related to matters such as insurance. Answers will be provided in writing, on the

website. Still other claims clearly were not rooted in robust technical analysis, such as the risk of catastrophic outcomes.

To that end, here is a short summary of what we heard during the last CEP meeting from three perspectives: a) what happened on 3 August; b) the key questions that have been answered; and c) most importantly, what to expect for the road ahead. This summary is not intended to replace what Edison said—they should speak for themselves, and our summary includes some hyperlinks to key documents they have presented—but rather to help us focus on what really matters, which is a solid program for improved fuel storage and downloading in the future.

What happened on 3 August.

On 3 August the SONGS team—a combined group of employees from Holtec, Holtec's subcontractors, and oversight by Edison—allowed a canister to get jammed during downloading into its cavity in the ISFSI. Misalignment allowed the jamming, but the crane operators kept lowering the slings—leaving the canister suspended about 18 feet off the bottom of the ISFSI cavity. The key facts of what happened are summarized on slides 14 to 17 of Tom Palmisano's canister downloading presentation.

To us, there are two key facts that really matter.

First, Edison and Holtec not only attempted to download the canister improperly but, astonishingly, created a situation that disabled the redundant drop protection system. At that point, nothing except for the fact that the canister was wedged kept the canister from dropping. That can't happen again.

Second, safe and reliable downloading is not a trivial process—not least because of the snug fit of the canister into the ISFSI cavity and the fact that many of the key steps in the downloading process are done "blind"—meaning the crane operator does not have a direct line of sight to the canister because it is lowered through a static transfer cask. Much better systems are needed so that this is done reliably, with defense-in-depth at SONGS and more generally in the industry. Doing better requires efforts on many fronts to create a nuclear safety culture—more on that below—and to facilitate learning from past events. For example, a similar event happened—jamming albeit without the slings being lowered—with

the previous canister (on 22 July) but the problem that the crew successfully spotted that day was never logged nor turned into a learning opportunity that could have helped the 3 August crew understand the risk of a jammed canister. What happened on 22 July is discussed on slide 18 of Tom's presentation. The Nuclear Regulatory Commission (NRC) also documents the severity of this failure—in its special inspection report, which you can find here.

Questions that have been answered.

We have heard lots of complaints about Edison and the NRC "stonewalling" at our CEP meeting and not giving fulsome answers to important questions. There likely always will be these kinds of disagreements, but on several fronts we think we actually heard a lot of new information from Edison and the NRC and many important questions were answered. Here are the key areas where we heard answers to questions posed:

- What happened in August and in July and why wasn't this information reported? The text above and its links summarizes this. At the same time, it is clear that Edison had a different interpretation of whether the August event required a report to the NRC and in what format—and that misunderstanding arose, in part, because a reportable event like this appears not to have happened before. At the time, Edison saw the August event as an industrial safety issue—a serious one—and they first reported it informally to the NRC the following business day (Monday, 6 August). This is not to excuse the event, and Edison subsequently has agreed with the NRC that the incident should have been formally reported within 24 hours. Edison also needs to sort out with the NRC whatever penalties arise because Edison didn't issue a formal report to the NRC until 14 September even though they informally talked to the NRC on 6 August as well as on a daily basis in the immediate period following the incident. All this matters for Edison and the NRC because this delay in formal reporting is one of the major violations cited by the NRC—something Edison needs to address through the enforcement process (below). The violations at SONGS related to this event are known in NRC parlance as "level 4" and two of them might be increased to "level 3." The NRC scale runs from 1 to 5, with 1 as the most severe. **But what really matters to us is focusing on the safety of the process going forward. Let's stay focused on that.** We have heard some groups claim that the July event should have been reported

formally. Edison and Holtec didn't think so; nor did the NRC. That's because the canister was never left unsupported during the July downloading process.

- Contingency plans and worst case outcomes. Several people have rightly asked: what could have happened if the canister dropped? Edison answered that, and we in the CEP have repeatedly asked Edison to make sure that their "drop analysis" has been independently verified. Edison has delivered that—publishing an analysis on our SONGScommunity.com website here while the NRC continues to analyze the "consequence analysis" as noted on page 3 of the executive summary of NRC's special inspection report available here. So far, we have heard nothing from the NRC to suggest they will disagree with Edison's analysis, and we have asked them to keep us informed on that matter. At the last CEP meeting some people demanded that Edison do actual drop tests rather than modeling of drops. While that idea makes intuitive sense, we are persuaded by the idea—standard in the nuclear and other industries such as aerospace—that models can examine more diverse potential real world conditions better than actual drop tests. Case in point, at our CEP meeting on 9 August 2018, we had an extensive discussion of crash tests for transportation casks to establish benchmarks for models to be widely used in future engineering analyses—see the discussion starting at 0:54:00 of the video located here. In the months after the 3 August incident some people have said in the media that a NRC "NUREG" document shows that the canister would have breached and claimed, therefore, that the Edison "drop analysis" is wrong. Those claims based on the NUREG document have ignored, willfully it seems, the fact that the NUREG study was for a different more rigid canister with a thinner wall and a different welded-in-place interior "basket" design that transfers more stress to the bottom and top welds in a drop. (Therefore, the canister in the NUREG analysis is more likely to fail.) We appreciate that these issues are complicated, but find it disturbing that even when these factual errors are pointed out, some people continue to make such claims in ways that seem designed to generate unwarranted panic and drama.
- Consequences of a canister breach. Some people continue to claim that there was no contingency plan in the event of a canister breach and release of radioactivity. This topic was addressed, but not in full depth, at our 3Q 2017 CEP meeting. See page 68 of the slide deck available here. And the

topic has come up in other ways as well. Edison has outlined its vision for what would be done if a canister were breached, how it would contain any material released, and why the contents inside the canister are not explosive—and thus there is no motive force that could cause a breached canister to atomize and release its solid-state nuclear material. Learning more about those plans has emerged as one element of the "extreme events" workshop that the CEP has been scoping with several members of the community—more about that in early 2019. We appreciate that this is a highly emotive issue, but we disagree with the claims being made that nobody has thought about or presented contingency plans in the event of worst case outcomes.

- Scratches during downloading. The claim has been made that all the Holtec canisters are now irreparably damaged and the warranty voided because of scratches to the stainless steel canisters during downloading into the ISFSI. Edison and Holtec have clearly answered this question on two fronts. First, they continue to believe that the Holtec system is superior for the SONGS site, especially given the severe seismic requirements at SONGS. Tom Palmisano stated this bluntly on multiple occasions. This was discussed when the Holtec system was first announced as the choice for SONGS and again when we held CEP meetings about the seismic risks in Southern California (see page 21 of the 1Q 2017 slide deck here). At our last CEP meeting Tom Palmisano said the same in response to public questions about why the Holtec system is still being used after the events in July and August (refer to 2:32:30 of the video available here). This is a topic that the CEP has examined extensively and repeatedly—with no reason to dispute that conclusion. Moreover, many regulatory authorities have examined this issue as well. Second, Edison and Holtec have argued that downloading scratches will self-heal through the reformation of oxide coatings on stainless steel. At our request Edison prepared a non-proprietary white paper on the effects of downloading on canisters which is available here. The NRC has also reviewed that work and, to our knowledge, not disputed its conclusions.

This list of answered questions is not to dispute that Edison and Holtec allowed a major error to occur on their watch and that has eroded the community's trust. Edison needs to rebuild that trust. This list of questions is not to dispute that the NRC needs to continue to explore ways to be more transparent. But as

the community figures out who to trust and what to watch lets focus on what really matters for the future.

The future.

Simply stopping offload work and leaving the fuel in pools is not a safe solution—the fuel is safer in dry storage. The longer this process drags out the longer the potential delays until the SONGS plant can be dismantled (but for the ISFSI) and the longer until the fuel can be shipped out of here if places for storage arise. Restart and completion of offloading is in our interest—only, of course, if it is done safely.

To that end, here is what we heard at our CEP meeting about the future, and the questions we as the CEP should keep asking:

- What will the NRC do during its pending enforcement actions, and will we learn any new insights about what caused the incident on 3 August and its remedies? How will the community learn about the assertions that Edison makes during those enforcement actions and the responses? We expect to learn more about this in the coming days.
- What exactly are Holtec and the industry doing so that the industry as a whole does a better job of learning about these kinds of events and creating a better nuclear safety culture? While it seems quite unlikely that an error like 3 August will happen again due to the extreme focus on countermeasures, what else lurks and how will they learn about it in a timely way—not just at SONGS but at other facilities whose operating experience could help SONGS do better?
- What does the new SYSTEM look like for offloading—new engineering, alarms, new training, new processes, and new oversight? What are the Holtec and Edison roles? How will the right people be retrained at the site? At the CEP meeting some members of the public claimed that the problem is engineering. We heard something different—that it is about all elements of the system and human performance.
- What will the NRC learn when it inspects Edison's dry runs—in December or in January—and how will its inspection and oversight processes change depending on what they learn?
- What is NRC's role going forward—after the restart begins? Will the NRC change its risk assessment of the plant during fuel transfers? Will NRC inspectors stay onsite for some or all of the offloading campaign? Several

members of the CEP have specifically asked the NRC to consider more onsite inspection capabilities, and we will explore that with the NRC in the coming weeks.

If you hear other vital follow up questions please do let us know. Meanwhile, we have put all these questions to Edison, Holtec, and the NRC, and will be following up regularly. We also are mindful that some members of the community are amassing their own technical information about oxide reformation, engineering of downloading systems, and other topics. We very much look forward to learning more about all that.

We in the CEP have asked Edison for updates at key milestones—such as the downloading dry runs it will demonstrate in rehearsal mode for the NRC, and on the schedule for resuming offloading. We have asked for a detailed summary of what the new offloading SYSTEM will look like. And we are in regular contact with the NRC and with elected officials in Washington DC with regard to the right kind of oversight going forward. In doing this we are mindful that what's before us all is not simply a technical issue but also one of building community awareness and, where deserved, confidence.

Sorry for the length of this note, but given everything that has been said and written about this matter in the last few months and about our most recent CEP meeting, we thought it helpful to summarize the highlights in one place.

All best

David, Dan, and Jerry