Thursday, May 22, 2014, from 6:00-9:00 p.m. PDT in Laguna Hills, California Meeting Minutes and Action Items

1) Community Engagement Panel Member Attendance

- a) Present: Dr. David Victor (Chairman), Mayor Lisa Bartlett (Dana Point), Ted Quinn (American Nuclear Society), Rich Haydon (California State Parks), President John Alpay (Capistrano Unified School District Board of Trustees), Larry Rannals (Camp Pendleton), Valentine "Val" Macedo (Laborers' International Union of North America Local 89), Dan Stetson (Ocean Institute), City Council Member Jerome M. "Jerry" Kern (Oceanside), Garry Brown (Orange County Coastkeeper), Gene Stone (Residents Organized for a Safe Environment), Mayor Tim Brown (San Clemente), Supervisor Bill Horn (San Diego County), Jim Leach (South Orange County Economic Coalition), Dr. William Parker (University of California, Irvine), Council Member Larry Kramer (alternate to Mayor Sam Allevato, San Juan Capistrano)
- b) <u>Absent</u>: Donna Boston (Orange County Sheriff's Department), Supervisor Pat Bates (Orange County), Mayor Sam Allevato (represented by Council Member Larry Kramer, San Juan Capistrano)
- c) <u>Southern California Edison Representatives</u>: Tom Palmisano (VP and Chief Nuclear Officer), Chris Thompson (VP Decommissioning)

II) Opening by Dr. David Victor, CEP Chairman, at 6:05 p.m.

- a) Officer announcement
 - i) Mayor Tim Brown of San Clemente to serve as CEP Vice Chairman
 - ii) Dan Stetson of Ocean Institute to serve as CEP Secretary

III) Report on Open Items from May 6 Spent Fuel Management & Storage Workshop

- a) Tom Palmisano
 - i) Independent Spent Fuel Storage Installation pad (ISFSI) expansion numbers:
 - Current pad size is ~313'x175' (~55,000 sf)
 - Need to expand to accommodate ~100 more fuel casks and triple the size of the pad
 - Depending on the manner in which the pad is expanded, dimensions would be:
 - (a) Expanded to either ~313'x355' or ~440'x212`
 - (b) Total pad size of ~94,000 sf to ~100,000 sf
 - Implications if we go with 24- versus 32-assembly canisters
 - (a) If 32-assemblies per cask is used = $^94,000 \text{ sf}$
 - (b) If 24-assemblies per cask is used = ~102,000 sf (requires more space)
 - Cost for expansion will be developed during preparation of the Decommissioning Cost Estimate (DCE)
 - ii) Canning of fuel
 - At the workshop, the AREVA representative stated that there is not necessarily a safety benefit to canning fuel assemblies that are not damaged
 - Incremental cost to can all spent fuel at San Onofre is estimated at \$30 million
 - Incremental cost to can high burnup fuel assemblies is estimated at \$15 million
 - iii) What fuel handling equipment would remain at the site after decommissioning?
 - No final decisions but currently have no plans to maintain fuel handling equipment onsite, which would be unused for years
 - Rather, we currently envision having fuel handling equipment provided through a vendor and available on short notice as needed for fuel handling
- b) Dr. Bill Parker report from May 6 workshop:

- i) Richter scale is a measure of total energy released during an earthquake and is not particularly useful number to use to design any structure
- ii) What is useful in building design is the ground movement the further you are away from an earthquake, the smaller the ground movement
- iii) The design criteria used for structures including nuclear power plants is in terms of ground acceleration:
 - Normally measured as a percentage of the acceleration due to gravity
 - San Onofre reactor designed for 0.67g
 - San Onofre dry cask storage designed is designed for 1.5g
- iv) What do these numbers mean? The 2011 earthquake in Japan was a magnitude 9 the largest ever recorded in Japan and the 5th largest in the world in the last century
 - The epicenter was ~100 miles away from the Fukushima Daiichi Nuclear Power Plant which had a 0.5g design basis; damage was caused by tsunami
 - The Onagawa Nuclear Power Plant, which has a 0.5 g design basis, was only 55 miles away from the epicenter and experienced 0.6 g with no damage
 - For comparison, the distance from San Onofre to the nearest point on the San Andreas Fault is approximately 55 miles thus the Onagawa plant is a much better comparison (versus Fukushima) to San Onofre
 - Largest earthquakes in California typically register a maximum of 8.0 on the Richter scale
 - The earthquake in Japan was one unit on the Richter scale than anything seen in California that's 30 times the amount of energy of anything seen in California
 - Ground acceleration at Onagawa was 0.6g and the design basis was 0.5g so the design was slightly exceeded; yet there was no structural damage
 - Estimate for largest San Andreas fault earthquake is magnitude 8.1 that's approximately 30 times less than the energy released in the Japanese earthquake
 - The SONGS dry cask storage design of 1.5 g strikes me as being extremely conservative given the worst case experience in the past century: the Japanese earthquake and Onagawa
 - Safety margin of 10 or more based on the Japan experience
- c) Gene Stone comments:
 - i) Asked Dr. Parker how far the Newport-Inglewood Fault is from SONGS
 - Dr. Parker response:
 - (a) Last earthquake on the Newport-Inglewood Fault was in 1933 off the coast of Long Beach and it was a 6.3 magnitude on the Richter scale; closer than the San Andreas but also a lower magnitude potential
 - ii) I have some things to correct on the record from the May 6 meeting but first I want to start off with some points that are very positive; we seem to have agreement on:
 - Safest possible storage of the nuclear waste and the decommissioning process
 - No long-term waste dump at San Onofre
 - Consolidation of California's nuclear waste
 - Making a recommendation that the U.S. Government provide a waste repository

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- iii) Canning issue it does make it safer because it does not allow the material to touch each other if it gets broken during transport; also the NRC has been talking about canning of all high burnup fuel although no decision has been made
- iv) AREVA says that the new 32-canister system just works better but that's not much of an answer; I did ask AREVA for some numbers that I will have Dr. Marvin Resnikoff but I have not received those numbers at this point;
- v) The NRC is asking AREVA why they have two definitions for damaged spent fuel. I'd like to know that as well
- d) Chairman Victor commented with respect to what the panel has "agreement" on, including:
 - i) Consolidated waste, especially away from decommissioned plants; whether that's a California or Western States solution remains open; there are some important legal and technical reasons why California may not be best
 - ii) I plan to personally oversee the calculations related to canning and high burnup fuel and working with the vendors; need to proceed in a manner that does not cause paralysis in getting the fuel out of pools and into casks because that is very important
- e) Chris Thompson comments:
 - i) Take the opportunity to remind people about the three guiding principles that SCE has issued that will guide us through this process: safety, stewardship, and engagement
 - Safety for employees, the community, and the natural environment
 - **Stewardship** is a duty to customers who have funded the trust funds over 30 years; we have a duty to them to conduct this work in a cost-effective manner while putting safety first; by the end of this process, we will refund to customers any money left over
 - Engagement this Community Engagement Panel embodies the notion of engagement; this is our second regular meeting, we had a workshop too; the intent is to have a workshop with experts to increase knowledge in a particular area before the panel has to review a regulatory filing; workshop was on spent fuel management and now the panel is reviewing our Irradiated Fuel Management Plan
 - ii) At the May 6 workshop, there were four experts: (1) Per Peterson from UC Berkeley who is a member of the Blue Ribbon Commission on America's Nuclear Future, (2) Dr. Marvin Resnikoff of Radioactive Waste Management Associates at Gene Stone's request, (3) Dr. Michael McMahon of AREVA TN which is the manufacturer of the dry casks currently on site, and (4) Drew Barto who works in the Division of Spent Fuel and Transportation at the NRC
 - iii) Tonight, Tom Palmisano will walk us through the draft IFMP and it is our intention to capture feedback on the draft plan through June 6
 - iv) Secretary Dan Stetson will collect feedback on behalf of the panel and provide to SCE
 - v) SCE will incorporate appropriate changes and let the panel know what we did and why; if a change was made and if not, why not

IV) Tom Palmisano (VP and CNO of San Onofre) - SONGS Decommissioning Timeline

- i) Where we are in the decommissioning process: the NRC requires the plant to be decommissioned in a 60-year timeline; it's broken into three phases:
 - Decommissioning Planning intended to be a 2-year phase; started June 2013 and must be complete with planning by June 2015; we are in the middle of that first phase; cannot do major dismantling during this phase

- Major Decommissioning Activities long phase and variable period of time; some plants go through a long SAFSTOR period and decommission toward the end of 60 years; we are going to go relatively quickly into the dismantlement phase
- License Termination two year process with the NRC which includes public comment and you have met cleanup criteria
- b) Proposed Decommissioning Timeline we have committed to a 20-year timeline, although it is preliminary and we are looking for input from the panel
 - i) "Physical plant changes" are conditioning the plant for decommissioning; such as the units have been defueled; we have certified we have defueled the plant; we are draining systems and preparing to de-energize unnecessary equipment to prepare for major dismantlement
 - ii) Next phase is licensing submittals the Defueled Technical Specifications: we now are licensed to possess nuclear fuel, not to operate the plant; aspects that were related to operating reactors are no longer relevant because the reactors are defueled
 - iii) Fuel has been cooling since 2012 and that allows us to propose changes to the offsite emergency plans that must be reviewed and approved by the NRC; made the submittals in March 2014 and it's a 12- to 18-month process with the NRC
 - iv) Three major upcoming regulatory decommissioning filings to be submitted in Q3 2014 with NRC approval expected in early 2015:
 - Irradiated Fuel Management Plan
 - Decommissioning Cost Estimate
 - Post-shutdown Decommissioning Activities Report
 - v) Plan is to have all fuel removed from pools by end of 2019 consistent with community input to offload fuel sooner rather than later
 - vi) Dr. Bill Parker asked that with reduced licensing over time, whether there is a remaining NRC regulatory role with spent fuel management.
 - Tom Palmisano confirmed that San Onofre will remain subject to NRC regulation, review, inspection, and monitoring as long as the ISFSI is in use
 - vii) Chairman Victor commented that the NRC's 60-year timeline sounds long but that SCE plans on finishing much sooner and dismantling in 10 years; Questions: timing for major NRC reviews and where do you see uncertainties in the timeline?
 - Tom Palmisano responded that some submittals are license amendments such as the Defueled Technical Specification – and 12 to 18 months is a realistic timeframe for NRC review and approval
 - Decommissioning submittals are not license amendments that usually take 3-6 months for NRC review and acceptance
 - Uncertainties: Defueled Emergency Plan will get attention given recent letter from some Senators that may generate pause with the NRC; process for securing and incorporating panel feedback as the CEP defines what its key issues are
 - viii) Gene Stone asked how SCE figures the heat load of the material in the fuel pool; how long it stays in and how long it cools
 - Tom Palmisano stated that when a cask is designed and licensed, the vendor provides a table with enrichment and burnup, and therefore heat load; we don't pull a fuel rod and measure a fuel rod
 - David Victor proposed that the question be posed as a formal query and get the technical details to share with the panel and the public

- ix) Garry Brown asked if the timeline is totally driven by the submission dates
 - Tom Palmisano clarified that three submittals driven by a date are the decommissioning submittals which must be made within two years to be in compliance
- x) Ted Quinn asked about lessons learned from Unit 1 Decommissioning
 - Tom Palmisano stated lessons learned were in the areas of planning, contracting, permitting, and staffing
- c) Nuclear Regulatory Commission submittals schedule
 - i) IFMP being discussed in detail today
 - ii) Post-Shutdown Decommissioning Activities Report and site-specific Decommissioning Cost Estimate summer meeting with panel to review drafts for SCE submittal Q3 2014
- d) Reviewed Spent Fuel Storage on site
 - i) Existing dry fuel storage pad has 50 canisters, 1187 fuel assemblies including 8 high burnup fuel assemblies
 - ii) Currently 2668 spent fuel assemblies are in the spent fuel pools
 - iii) Fuel assemblies currently in spent fuel pools will move to dry storage, requiring about 100 canisters
 - iv) Eventually, DOE will take approximately 150 canisters with 3855 fuel assemblies
- e) Gene Stone asked about the status of decommissioning of Unit 1
 - Tom Palmisano stated that Unit 1 is partially decommissioned; the fuel is offloaded; physical plant has been removed but we have not gone through license termination
- f) Tom Palmisano outlined the Irradiated Fuel Management Plan (IFMP)
 - i) Plan is an NRC Requirement; reference 10 CFR 50.54 (bb)
 - ii) The plan is to move the fuel from the spent fuel pools to dry cask storage
 - iii) NRC reviews for completeness, technical review, and produces a Safety Evaluation report
 - iv) High level document with no standard format or specific content guidance
 - v) SONGS reviewed other plants' submittals for content and level of detail
 - vi) Assumptions made:
 - All fuel transferred to ISFSI by 2019
 - Assumes DOE repository in 2024 time frame
 - All fuel removed from SONGS and accepted by DOE by 2049
 - Spent fuel pool islanding standalone system just to cool spent fuel pools
 - (a) Chairman Victor asked if islanding is safer
 - (i) Tom Palmisano responded that islanding provides a higher level of reliability and safety
 - (b) Chairman Victor asked if reliability has been analyzed on whether islanding is safer
 - (i) Tom Palmisano responded that approximately half of the decommissioning plants have used islanding and that its only in use 4 or 5 years so there may not be much reliability data available
 - vii) Focus of the IFMP is on demonstrating funding adequacy
 - Dr. Bill Parker asked how we can produce these estimates without knowing when the DOE will take possession of the fuels
 - (i) Tom Palmisano explained that assumptions had to be made as to when the DOE would accept fuel for the industry and then lay out the cash flow for decommissioning; every few years we revisit that assumption and report to the CPUC about whether we have enough funds

- Ted Quinn commented that many plants have sued the DOE and asked if SCE has done so
 - (a) Tom Palmisano responded that SCE has sued because the government has failed to perform and is in breach of contract
 - (i) We won the first lawsuit and a second is pending
 - (ii) We will continue to recover costs
 - (iii) DOE has agreed to an established protocol for the utilities to continue to recover funds
 - (b) Chairman Victor suggested that the panel take a close look at the financial adequacy assumptions if the DOE continues to fail to perform and that SCE provide an update on the status of the lawsuits
 - (c) Tim Brown asked if there was contingency applied
 - (i) Tom Palmisano asked to defer the question to the next meeting when the Decommissioning Cost Estimate will be addressed including contingency assumptions
 - (d) John Alpay asked whether legal fees and transaction costs are being recovered
 - (i) Tom Palmisano yes and explained that there is a template laid out
 - (e) John Alpay asked about the assumed dates for DOE acceptance of fuel
 - (i) Tom Palmisano stated that in January 2013 the Secretary of Energy produced a report with plans for an interim pilot by 2021 for decommissioning plants, full scale pilot by 2025, followed by continued work on a permanent repository; I look to point to something official from DOE; will provide a copy of the 2013 report to the panel
- Gene Stone stated he understood that Zion has canned all its high burnup fuel and asked whether that was true
 - (a) Tom Palmisano stated he did not know but would find out
- viii) Palmisano described that the San Onofre IFMP does not include for transparency
 - Expansion footprint of the ISFSI no details; decision to be made later
 - Selection of the fuel canister vendor, design, or type
 - Decisions on canning or not canning fuel assemblies
- ix) Ted Quinn asked if a study had been performed to evaluate expediting fuel to the ISFSI
 - Tom Palmisano explained that the IFMP assumes finishing in 2019
 - Chairman Victor asked about the practical implications of getting the fuel out a year earlier
 - Tom Palmisano explained that as cask selection and other variables are completed, the timeline could change and the movement of fuel to ISFSI could be completed earlier; everyone wants fuel off-loaded sooner rather than later
 - Gene Stone asked when the DOE was going to finish its study
 - (a) Tom Palmisano stated he did not know the timeline for DOE to complete its study
- x) Tom Palmisano showed a table of industry comparisons for IFMPs
 - Chairman Victor asked about the major reasons for the updates
 - (a) Tom Palmisano stated the updates are based on timing or funding changes
 - Chairman Victor suggested the panel take a fresh look in 1Q2015 to see what changes have occurred to these submittals

- g) Future decisions Tom Palmisano discussed the three cask vendor designs: AREVA TN NUHOMS, Holtec Umax system (used at Humboldt Bay), and NAC MAGNASTOR all have good designs, all deployed in the industry, decision is pending
- h) The following decisions must be made for Spent Fuel Storage
 - i) Canister capacity
 - AREVA has 32 fuel assembly capacity that would meet our seismic requirements
 - Other vendors have 37 fuel assembly capacity
 - Also considering and evaluating input regarding canning all or high burnup fuel
 - ii) ISFSI expansion
 - ISFSI must be increased to accommodate approximately 100 additional canisters
 - Evaluating most technically appropriate
- i) Concluded the presentation by reiterating the decommissioning principles of safety, stewardship, and engagement
- j) Panel comments on presentation:
 - i) Bill Parker asked what extent canning has on design decision
 - Tom Palmisano said it is taken into consideration during design analysis and that it must be interactive with design; it is not an independent decision
 - ii) Tim Brown asked when canister selection and pad expansion decisions must be made
 - Tom Palmisano said decisions must be made by September 2014
 - iii) Ted Quinn asked what Rancho Seco used for canisters
 - Tom Palmisano stated the NUHOMS horizontal storage system was used
 - iv) Garry Brown if expansion of the dry storage site is the only option or whether other sites also could be considered
 - Tom Palmisano stated we are asking that question; right now the pad is approved under our existing Part 50 licensed area which is largely where the plant is located; we have facilities on the Mesa that are not part of the Part 50 license; anything is possible but a different or second pad would require a decade before I could offload the fuel pools; Navy would have to agree as well
 - Chairman Victor added that there is a premium on having the same site
 - (a) Tom Palmisano commented that from a technical and a regulatory standpoint, expanding the existing facility would make the most sense
 - v) Garry Brown reiterated that it appears there is only one option: to expand the existing pad
 - Tom Palmisano clarified that to support the 20-year timeline, the practical options is to place the pad on the Part 50 footprint; there may be one or two other areas that make sense, but they carry with them issues such as duplication of security needs
 - vi) Chairman Victor asked Tom Palmisano what he needs from the panel; what would be the greatest value
 - Tom Palmisano replied: (1) 20-year timeline for decommissioning and whether that makes sense versus slowing down; (2) comments about the parameters you would like us to explore in our canister selection process; and (3) understand pad location
 - Chairman Victor said he hasn't heard the panel say slow down
 - vii) Dr. Bill Parker stated that one of the parameters is how the design minimizes cost over time while maximizing flexibility and safety

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• Tom Palmisano confirmed plans include the ability to monitor cask performance over time, license renewal, and those attributes are in all designs

viii) Jerry Kern asked about the approach to RFPs and the vendor proposals

- Tom Palmisano said the vendors have been provide the list of criteria they have to meet and that they may propose items that may be of value to us; decisions will be limited to those with products licensed for storage and transportation
- ix) Chairman Victor stated that is not appropriate for the panel to make recommendations about vendors but that if there is material information that would be of interest to the public, that might be shared with the panel by SCE
- x) Tim Brown asked if SCE has a profit motive in cask selection such as are you allocated a certain amount and if you come under, do you benefit?
 - Tom Palmisano stated we have no profit motive in vendor selection or in how quickly to proceed with decommissioning; this is all ratepayer funds
- xi) Chairman Victor commented that this is a \$400 million for the expansion of the pad and the casks and unused funds gets returned to ratepayers; Noted that at the May 6 workshop we learned that it's not always safer to have casks with fewer assemblies because the newer casks with more assemblies also have all the latest safety gear; question: is it possible to have two vendors?
 - Tom Palmisano responded that yes, it is feasible, and in fact a number of sites have multiple designs on site

V) Public Comment Period

Following a break, the public comment period commenced with more than 20 members of the public signed up to deliver comment; speakers and themes follow; the full video is available at http://www.songscommunity.com/052214 event.asp

- a) Marni Magda: Move the fuel offsite as soon as possible
- b) Yoko Collin: Panel should put together a California committee to find a solution to moving the fuel off the ocean shore
- c) Joe Holtzman: Learn from Fukushima as well as Japan's analysis of HBF
- d) Ace Hoffman: Ignoring risk of airplane strike; need casks that will last thousands of years; tsunami risk; stress corrosion; need a better plan
- e) Christine Johnston: May 15 fire including whether hazmat was called, spent fuel cooling, SONGS employees evacuated and left behind, firenadoes
- f) Sharon Hoffman: Ground motion versus Richter Scale discussion did not make sense
- g) Darin McClure: Concerns about cladding and that not enough people understand the engineering
- h) Jeff Steinmetz: Preposterous to believe that DOE will have a repository in 2024
- Donna Gilmore: A lot of money being spent on current ISFSI instead of spending dollars on moving the fuel offsite
- j) Roger Johnson: Consider canning technology that does have a safety component
- k) Jennifer Massey: Consider moving ISFSI to Mesa and perhaps use the subterranean tunnels
- I) Ray Lutz: IFMP should be made public; going to send you a letter
- m) George Allen: Put in writing how much time the site can be without electricity

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- n) Glenn Cross: Ironworkers Union of San Diego support SONGS and the safe environment evidenced during construction and operation
- o) Karl Aldinger: Concerned about fire
- p) Toby Jarrett: Dismantling of the structure requires professionals such as ironworkers
- q) Gregory Doss: Thank you for your time
- r) Cesar Cabrera: Hard to see plant decommissioned; Edison headed in right direction
- s) Dan Dominguez: Has worked at plant for many years; provided employee's perspective
- t) Beverly Findlay-Kaneko: Fukushima podcast
- u) Madge Torres: High burnup fuel temperatures and safety
- v) Galal Kernahan: Glad the panel is here and let's make this body able to bring closure
- w) Stephen Van Wagoner: Thanked steelworkers, concerns about steam generator design changes, spent fuel storage challenge
- x) Vinod Arora: Worked at San Onofre, questions for Tom Palmisano regarding MHI, Unit 2 restart plan, retirement decision, independent company to review plans

VI) Given the number of people who addressed the wildfires during public comment, David Victor asked Tom Palmisano to provide a briefing on the May 15 fire as it pertained to San Onofre

- a) The fire was half mile away from the south edge of the property; not the power production part of the plant but well south of that; the fire never entered any part of the site
- b) The USMC responded as well as the San Onofre Fire Brigade
- c) A dozen employees were evacuated from the south storage facility in order to get them out of the way of the Fire Brigade

VII) Tim Brown talked about having a personal stake

- a) None of the panel is paid; we're here because we're interested in the outcomes
- b) On a personal note, I have had a personal experience with the federal government's mistruths about the dangers of radiation
- c) Grew up in Arizona; family has lived in Northern Arizona near Four Corners since the 1930s
- d) In the Cold War, the federal government detonated tests in Nevada that blew radiation across Northern Arizona and Southern Utah
- e) Because of that, my father, grandfather, and other family died from "downwinders" disease
- f) Federal government in the past has lacked transparency and has lied about radiation
- g) Confident decommissioning San Onofre will be done safely
- h) SCE is giving us everything the panel asks for and more; you (the public) are providing us with data to challenge that
- i) Sum total is we will understand a lot more that when we started and will be more comfortable

VIII) Closing (Chairman Victor)

- a) All questions and comments received on songscommunity.com will be collated so the panel can review them; questions received more than 10 days before the next meeting will be addressed
- b) Still settling on dates for summer workshop in June and Regular Meeting in August
- c) Focus of both will be the Post-Shutdown Decommissioning Activities Report and the Decommissioning Cost Estimate
- d) I have been asked to visit the NRC in July; can carry issues from the panel
- e) We are working hard to make website useful; new "send message" feature

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- f) Consolidation plan will be a future focus
- g) Next meeting will include an overview of where we have been and where we are going with help from Secretary Dan Stetson
- IX) Meeting concluded at 8:55 p.m.

X) Action Items:

Comments	Approach
Post document	
To be addressed at workshop #2 for PSDAR and DCE	
This report was mentioned during Tom's presentation.	
Manuel to put reminder on action item list/calendar	
Coordinate CEP meeting topic on Emergency Planning	
Several members of the public expressed concern about the fires and risk to the plant/workers during public	
	To be addressed at workshop #2 for PSDAR and DCE This report was mentioned during Tom's presentation. Manuel to put reminder on action item list/calendar Coordinate CEP meeting topic on Emergency Planning Several members of the public expressed concern about the fires and risk to the