

## TECHNICAL MEMORANDUM

**TO:** AMY SNYDER  
NUCLEAR REGULATORY COMMISSION

**FROM:** MARK MORGAN  
SOUTHERN CALIFORNIA EDISON

**SUBJECT:** RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) TO SUPPORT  
ENDANGERED SPECIES ACT CONSULTATION  
San Onofre Nuclear Generating Station Units 2&3 Decommissioning Project

**DATE:** APRIL 8, 2021

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This memorandum documents Southern California Edison's (SCE) response to the Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI) to Support Endangered Species Act (ESA) Consultation, which was transmitted by email, dated March 9, 2021, from Amy Snyder of the NRC to Mark Morgan of SCE (ADAMS Accession No. ML21068A264). The Biological Opinion (BO) issued to San Onofre Nuclear Generation Station (SONGS) and Diablo Canyon (NMFS 2006) covered the potential entrainment and take of sea turtles by SONGS through 2022. Since the BO was issued, SONGS ceased operation in August 2013 and is undergoing decommissioning. As such, the volume of water intake has been reduced by over 98%. This response to the RAI is intended to assist the NRC staff in assessing the potential effects of the extension of take coverage allowed by the BO to include continued intake and discharge, and decommissioning. The following information is provided for SONGS decommissioning activities on federally listed species and critical habitat, to determine whether Endangered Species Act (ESA) consultation with National Marine Fisheries Service (NMFS) and/or United States Fish and Wildlife Service (USFWS) is required.

**NRC RAI #1. Provide a description of the action area, as defined in 50 CFR 402.02, for SONGS decommissioning.**

This RAI describes the Proposed Action in two parts: the continued intake/discharge of water and offshore decommissioning activities at SONGS.<sup>1</sup>

Consistent with the existing BO, the direct and indirect effects at SONGS are associated with the intake and discharge of water through the intake and discharge structures. Therefore, the action area includes the intake and discharge structures and eliminates the area previously affected by warmed or chlorinated water. As SONGS is no longer operational and is actively being decommissioned, discharged

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<sup>1</sup> Prior to the start of decommissioning and absent of a federal action for onshore activities, SONGS conducted informal consultation with USFWS under Section 10 of the ESA and in doing so, USFWS concurred that take of listed species is not reasonably certain to occur during onshore decommissioning activities. Therefore, since the action undertaken by a federal agency now is limited to renewal/extension of the BO, the action area is limited to offshore activities such as the discharge and intake of water, and offshore activities associated with the disposition of the intake and discharge conduits.

water will be neither warmed nor chlorinated (there is no temperature change). This reduces the action area associated with intake and discharge to only the area immediately surrounding the intake and discharge structures, a decrease in area from the 2006 BO.

Further, the direct and indirect effects of SONGS offshore decommissioning are associated with the disposition of the SONGS Units 2 and 3 offshore intake and discharge conduits and associated structures within the portion of the facility authorized by CSLC Lease No. PRC 6785.1 (CSLC Lease Facilities). The area including and surrounding 21 acres of tidal and submerged lands in the Pacific Ocean, southwest of the SONGS facility, includes the majority of the CSLC Lease Facilities area, where conduits would be dispositioned, dredging may occur, and where barges or other watercraft may be used to transport materials removed from SONGS conduit structures. The action area for this RAI includes two primary offshore intake structure (POIS) structures – one each for Units 2 and 3 intake conduits; two auxiliary offshore intake structure (AOIS) structures – one each for Units 2 and 3 intake conduits; 12 diffuser structures – six each for Units 2 and 3 discharge conduits; 23 manhole access port structures (MAPS) – 12 for Unit 2 and 11 for Unit 3 intake and discharge conduits; one fish return conduit (terminal end rising above the sea floor); three environmental monitoring buoys and two navigational buoys, including the attached water quality instruments and anchors (three buoys are near the seaward end of the Units 2 and 3 intake conduits, with two additional buoys located farther to the south).

**NRC RAI #2. Provide a list of federally listed species and critical habitat that occur in the action area. Please include species and habitat under both the NMFS’s and USFWS’s jurisdictions.**

No critical habitat has been designated for any species under NMFS or FWS jurisdiction in the action area; therefore, no critical habitat will be affected by the proposed action. No federally listed species under USFWS jurisdiction occur in the action area. A list of federally listed species under NMFS jurisdiction is included in Table 1 and are discussed in detail below.

**Table 1: Threatened and Endangered Species with Potential to Occur in the Action Area**

Common Name	Species	Status
Species Not Likely to be Affected by the Proposed Action		
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered Central American populations; Threatened Mexico populations
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Guadalupe Fur Seal	<i>Arctocephalus townsendii</i>	Threatened
White Abalone	<i>Haliotis sorenseni</i>	Endangered
Black Abalone	<i>Haliotis cracerodii</i>	Endangered
California Steelhead (Southern CA DPS and South Central CA Coast DPS)	<i>Oncorhynchus mykiss irideus</i>	Endangered
Green Sturgeon (Southern DPS)	<i>Acipenser medirostris</i>	Threatened
Species Likely to be Affected by the Proposed Action		
Green Sea Turtle	<i>Chelonia mydas</i>	Endangered
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead Sea Turtle	<i>Caretta caretta</i>	Threatened

Common Name	Species	Status
Olive Ridley Sea Turtle	<i>Lepidochelys olivacea</i>	Threatened

**Species Not Likely to be Affected by the Proposed Action**

A list of species with potential to occur in the action area can be found in Table 1, above. Several of the species including all of the whale species, Guadalupe Fur Seal, and California Steelhead may be found in the action area for limited amounts of time, but overall have low likelihood to occur and/or be adversely affected by the proposed action. These species are migratory in nature, therefore their time spent in the area is likely to be limited. Further, SONGS will be required, in accordance with the Final Environmental Impact Report prepared by the CSLC to prepare and implement a Marine Mammal and Sea Turtle Mitigation and Monitoring Plan, to ensure no harassment of marine mammals or other marine life occurs during offshore decommissioning.

The likelihood of all the listed marine mammals occurring within the action area is either low, given their respective population densities and habitat preferences, or unlikely, given their known inhabited ranges or because suitable habitat is absent in the action area.

Black abalone are an intertidal to low subtidal abalone species, occurring on rocky bench habitat in the nearshore. As there is no rocky bench intertidal habitat within the action area, this species is unlikely to occur. White abalone are among the deepest occurring abalone species in California. While white abalone may occur as shallow as 15 feet, the main depth range for this species is 80 to 100 feet. The maximum depth of the action area likely to affect white abalone is approximately 50 feet, which is shallower than the preferred depth for this rare species. Therefore, it is unlikely that white abalone would be affected by the Proposed Action (CSLC 2019). The action area is not included in the critical habitat listing for black abalone and no critical habitat has been designated for white abalone.

While southern California steelhead are known to occur throughout the region, they are considered unlikely to occur within the action area due to a lack of suitable habitat (CSLC 2019). Green sturgeon are known to range in nearshore marine waters from Mexico to the Bering Sea, although their abundance gradually increases north of Point Conception. Additionally, the SONGS facility has not been known to have entrained this species (NOAA 2006) and with the decreased flow, entrainment is not expected.

Additionally, the following avoidance and minimization measures/plans will be implemented during the Proposed Action, which will further reduce these species'<sup>2</sup> potential to be impacted by the Proposed Action:

- Offshore Spill Response Plan
- Hydrogen Sulfide (H<sub>2</sub>S) Gas Control Plan
- Anchoring Plan
- Conduit Work Plan
- Dredging Plan
- Turbidity Monitoring
- Marine Mammal and Sea Turtle Mitigation and Monitoring Plan

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<sup>2</sup> As discussed below, these plans would serve to minimize and avoid impacts to species likely to be affected by the Proposed Action, specifically, sea turtles.

All are described in detail in the Final Environmental Impact Report (EIR) prepared by the CSLC (CSLC 2019).

**Species Likely to be Affected by the Proposed Action**

Table 1 shows a list of all the threatened and endangered species under NMFS jurisdiction with potential to occur in the action area. Species from Table 1 which are likely to occur in the action area due to their natural distribution, and may be adversely affected by the proposed action, are green turtles, loggerhead turtles, leatherback turtles, and olive ridley turtles. From 2006-present (2021), 13 Greens, 2 Olive Ridley, and 1 Loggerhead were entrained. All 16 turtles were released back to the environment unharmed. SONGS became nonoperational in August 2013. In 2014 to present (2021) (after the reduction in flow), no turtles have been entrained. Olive ridley, green, and loggerhead sea turtles are tropical residents of the eastern Pacific, but move into temperate waters, particularly during the summer months. A population of green turtles was observed in the warm water discharge of the San Diego Bay power plant and feeding within the eelgrass beds. The nearest recorded nesting sites are found along the coast of Mexico. Leatherback turtles migrate for 10 to 12 months from nesting areas in the western and central Pacific to reach coastal waters on the eastern Pacific, including southern California where they feed (CSLC 2019).

**NRC RAI #3. Provide an assessment of the potential impacts of decommissioning activities on federally listed species and critical habitat under the NMFS’s jurisdiction that SCE has identified under Question 2. The assessment should address, at a minimum, green, leatherback, loggerhead, and olive ridley sea turtles. SCE should consider all possible effects, including, but not limited to:**

- **Water withdrawals and discharges during the decommissioning period,**
- **Cooling water system intake and discharge dismantlement, and**
- **Other in-water work that could affect the aquatic environment, such as dredging and vessel traffic.**

**The assessment should also explicitly state whether any actions assessed in the NMFS’s 2006 biological opinion will continue during the decommissioning period. For an example of such an assessment, see the NMFS’s May 29, 2020, biological opinion for Oyster Creek continued operation, shut down, and decommissioning (ADAMS Accession No. ML20153A228).**

**Description of Activities**

Decommissioning activities associated with the Proposed Action that could result in direct impacts to federally listed species under NMFS’s jurisdiction are the intake and discharge of water during the decommissioning period, and the removal of offshore intake and discharge conduit components (Units 2 and 3), fish return system conduit, and navigational and environmental monitoring buoys.

**Intake and Discharge of Water**

As with the 2006 BO, SONGS will continue to intake and discharge water, however SONGS will do so under different circumstances: Large Organism Exclusionary Devices (LOEDs) have been installed, the water will not be chlorinated and will be discharged at roughly the same temperature in which it was collected, and the volume of water intake has been reduced by over 98%<sup>3</sup>.

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<sup>3</sup> During operations, the intake water was over 1,600,000 gallons per minute (gpm) (or 2,304 million gallons per day [MGD]) and now, typically, less than 16,000 gpm (or 23 MGD) of intake water is used.

SCE installed two LOEDs at the Primary Offshore Intake Structure (POIS) and at the auxiliary offshore intake structure (AOIS). The LOED consists of a Dyneema® net fitted over the top and around the circumference of each POIS and AOIS. Removal of the LOEDs would occur during the Proposed Action.

At this time, approximately 7,500 gallons per minute (gpm) of intake occurs 24 hours per day, 7 days per week, at each of the two offshore intake structures. There are several types of effluent that may be discharged from the continued operation and decommissioning of SONGS. The sources of these effluent discharges are described as the North Industrial Area (NIA) Sewage treatment Plant (STP), Radwaste System, In Plant Storm Drains, Groundwater Extraction and Dewatering, Concrete Cutting Water, Common Oil Removal System, and stormwater runoff. Ocean water is drawn into two offshore intake structures which are located approximately 980 meters (m) offshore from SONGS. The intake structures are 200m apart and are located in water approximately 10 m deep. As discussed previously, since operations ceased at SONGS, water intake has been greatly reduced and it is typically less than 16,000 gpm (a greater than 98% reduction). The intake structures terminate at the plant in open air forebays. If marine mammals or sea turtles become entrained in the intake, the animals would be discovered during the twice daily inspections and removed from the forebay. In the past 5 years since the installation of the LOEDs and as documented in annual reports submitted to NMFS, there have been no entrainment or incidental take of sea turtles by SONGS.

Discharges through Unit 2 that are consistent with existing levels and in compliance with permit allowances would continue during the Proposed Project. As discussed above, the water discharged will be at roughly the same temperature as the ocean water and will not be chlorinated.

The intake and discharge of water is expected to occur, at the most, for the length of SONGS decommissioning, which could be through 2035. As engineering and design of all decommissioning activities is refined, the use of ocean water could cease earlier than 2035. If the use of the intake and discharge ceases earlier than 2035, SCE plans to note the termination of the monitoring in the annual reports submitted to the NRC/NMFS.

### Offshore Activities

The Proposed Action includes removal of all MAPS from the conduits, the POIS, and the AOIS from both intakes, and six diffuser ports from each of the two discharge conduits. All structures would be removed to four feet below the seabed. The fish return system conduit would be cut off at its terminus and capped with an exclusion barrier. All environmental monitoring and navigational buoys and anchor blocks (sinkers) would also be removed. These activities are described in detail in the CSLC Final EIR. Potential impacts to federally listed species resulting from decommissioning activities include boat-related pollution; discharge of hydrogen sulfide gas from intake and discharge conduits; seabed disturbance, dredging, and debris accumulation; and harassment of marine life through vessel collision or airborne and underwater noise. Each of these potential impacts is detailed below.

The offshore activities that make up the Proposed Action could occur for the length of decommissioning (through 2035), but the dispositioning of conduits, which has the highest concentration of activity within the Action Area, is expected to occur over an approximately one-year period. As engineering and design of all decommissioning activities is refined, offshore activities during decommissioning could be completed prior to 2035. If decommissioning is completed earlier than 2035, SCE plans to note the termination of the monitoring in the annual reports submitted to the NRC/NMFS.

### Impact Assessment

#### Intake and Discharge of Ocean Water

Similar to the past 5 years, the ongoing intake and discharge is expected to continue to result in no entrainment or incidental take of green, leatherback, loggerhead, and olive ridley sea turtles. Consistent with NMFS's May 29, 2020, BO for Oyster Creek Nuclear Generating Station, it is expected that with a reduction in intake and discharge of ocean water, a corresponding decrease in expected take of sea turtles would occur. Similarly, because SONGS has stopped discharging warmed and chlorinated water (stopped in August 2013), any impacts to sea turtles associated with those actions will be greatly reduced. Similarly, the LOEDs and future installment of the permanent tsunami doors will further serve to reduce the potential for take of Sea Turtles. However, and in an abundance of caution, SONGS requests to extend take coverage for sea turtles through the end of intake and discharge of ocean water, with no increase or change to the number of turtles entrained.

Acknowledging that the risk of potential entrainment or incidental take has been greatly reduced, SONGS provides the following recommended changes to the monitoring and reporting procedures delineated in the 2006 BO (and amended in the 2012 update):

- Inspection of the forebays should occur on a weekly basis. Times of inspections, including times where no turtles were sighted, will continue to be recorded.

All other terms and conditions would remain unchanged. Accordingly, SONGS recommends conducting reporting on an annual basis, in compliance with the terms and conditions of the BO.<sup>4</sup>

#### Offshore Activities

As described in detail below and in the Final EIR prepared by the CSLC, potential take of sea turtles during offshore activities associated with SONGS decommissioning may occur. However, with implementation of the avoidance and minimization measures presented in the Final EIR as mitigation measures (and listed above), take of sea turtles is expected to be unlikely.

Similar to the intake and discharge of ocean water, and operating in an abundance of caution, SONGS requests that take coverage for sea turtles is expanded to include the potential for take or harassment during offshore activities. Any such take would not exceed the take estimate provided in the 2006 BO and would be monitored and reported as described above. Additionally, and prior to the start of offshore activities, SONGS will develop a Marine Mammal and Sea Turtle Mitigation and Monitoring Plan as required by the CSLC. This plan will include the monitoring and reporting required by the terms and conditions of the BO and further lay out mitigation and monitoring for sea turtles.

#### **Boat-Related Pollution**

The increase in boat and ship traffic on the water associated with the disposition of offshore facilities may result in an increase in the risk of oil and fuel spills. This could occur from fuel or hydraulic leaks on the vessels or equipment positioned on vessels or barges or during refueling if permitted onsite.

An oil spill could impact federally listed species, including green, leatherback, loggerhead, and olive ridley sea turtles. As the oil would tend to stay on the surface, intertidal and shallow subtidal habitats and associated biological communities would be at greatest risk, especially the cobble as the oil or fuel could penetrate the interstices between the cobbles where it could persist for a long time and result in

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<sup>4</sup> Currently, SONGS completes and issues monthly reports based on correspondence between SCE and NMFS that was conducted in 1983. Due to the reduction of impacts to sea turtles and subsequent permitting efforts such as the BO (including 2012 amendment), reporting on an annual basis should be considered sufficient. SCE requests concurrence from NMFS as part of this current effort to extend the length of take coverage.

continued slow release of pollutants. Due to its location in the low intertidal and shallow subtidal, surfgrass would also be especially vulnerable.

Federally listed species that occur in the upper water column and surface waters, such as sea turtles would be especially vulnerable. There is also a risk of spills from vessels transiting from the action area to the locations where the materials removed during demolition would be disposed.

While the consequence of a spill would result in the high likelihood of causing a substantial decline in local populations of listed species, SCE has committed to implementing an Offshore Spill Response Plan to minimize impacts to federally listed marine species.

### **Discharge of Hydrogen Sulfide (H<sub>2</sub>S) Gas from Intake and Discharge Conduits**

The removal of the POIS and AOIS, MAPS, and diffuser ports from each of the two discharge conduits would result in the release of water inside the conduits that could be anaerobic and could also release H<sub>2</sub>S gas that may have formed inside the conduits after they are plugged at the forebay. The anaerobic conditions would result if the water inside the conduits has remained stagnant for a long time. The time it would take for anaerobic conditions to occur would vary depending on the water temperature, the amount of biological material in the water, and the level of biofouling growth (e.g., mussels and barnacles) on the conduits. Warmer ocean temperatures result in lower available oxygen for organisms, and any available oxygen in the water could be rapidly depleted if there is a high level of biofouling in the conduits. The discharge conduit would remain in use until close to the time that removal of the structures would occur, but because the spent fuel pools no longer require ocean cooling, the intake conduit would have been stagnant for some time prior to the start of the Proposed Action. These possible anaerobic conditions provide an environment where sulfur-reducing bacteria could result in the production of H<sub>2</sub>S gas, and the likelihood for production of gas would increase the longer the conduits remain stagnant prior to the removal of the structures. The release of the anaerobic water from the conduits during the removal of the structures has the potential to affect a wide range of organisms near the release and could cause immediate mortality to organisms that come into direct contact with the water when it is released due to the low levels of oxygen in the water. Indirect effects could include latent mortality of organisms or reduction in food resources for other organisms in the area. Any H<sub>2</sub>S gas that formed in the system would rise to the surface, affecting any organisms that come in contact during the release, including federally listed sea turtles. Federally listed fish species may also be affected. If H<sub>2</sub>S gas is released in the presence of a listed species such as a sea turtle, this could result in mortality due to inhalation and would constitute a “take” of a listed species. However, any release of H<sub>2</sub>S gas is likely to occur very quickly (within minutes) and would not result in a prolonged disturbance to these species habitats. Because exposure to H<sub>2</sub>S gas is potentially life-threatening, a release of H<sub>2</sub>S gas has the potential to harm listed species.

To minimize potential impacts, prior to accessing any enclosed spaces within the conduits, a qualified H<sub>2</sub>S inspector, capable of assessing the level of risk from H<sub>2</sub>S build up, would undertake an H<sub>2</sub>S Gas Risk Assessment. The Assessment may include conducting an inspection to determine if H<sub>2</sub>S gas occurs at sufficient levels to pose a danger of release and the subsequent mortality of listed marine species. Additionally, SONGS will prepare and implement the H<sub>2</sub>S Gas Control Plan.

### **Seabed Disturbance, Dredging, and Debris Accumulation**

The Proposed Action would involve minor dredging and debris removal, anchoring, and use of three to four temporary laydown areas on the seafloor within the CSLC lease area. The activities associated with the removal of vertical risers are anticipated to last approximately 4 months. Based on the removal or

reconfiguration of 45 structures (23 MAPS, two POIS, two AOIS, 12 diffuser risers, a fish return conduit opening, and five buoy anchors) during this approximate 4-month period (approximately 120 days), turbid conditions will likely occur at any one location for no more than 3 days.

To enable diver access to vertical structure cutting points, accumulated sediment, and stone blanket material, soft sediment habitat would be removed around each of the 39 vertical structures plus the fish return conduit. Material would be either removed and side-cast on the seabed within 15 to 20 feet of the excavation area by a long reach excavator, or suction dredged by divers operating a tethered hose and deposited within the discharge conduit. Removal of buoy anchors would also result in the disturbance of a small amount (135 feet<sup>3</sup> or 12 meters<sup>2</sup>) of soft sediment habitat. The volume of material removed or disturbed will be approximately 1,159 cubic yards and encompass 1.075 acres of seabed. The largest volume of removed material at any one location is 229 cubic yards from an 0.43-acre area, which is adjacent to each of the POIS. The seabed area affected varies in size according to the type of structure.

The removal of the 39 vertical structures and the reconfiguration of the fish return conduit opening could result in increased turbidity during the excavation of seabed material and during cutting activities and may also cover the adjacent seabed areas with debris that may be dropped during these activities.

Federally listed sea turtles may be disturbed by the turbidity and be driven away from the area, which could be considered harassment and subsequently would qualify as “take” under ESA. In addition, if large debris is dropped during excavation, it could strike marine sea turtles that are near the work area, although this is considered highly unlikely unless there is an accident, such as a crane failure. Listed fish species could also be affected by damage to gills and other body structures from increased turbidity. Sediments settling out of the water column could also affect intertidal and subtidal benthic habitat and associated biological communities. A reduction in foraging habitat, increased turbidity, and decreased water quality could also impact ground fishes, and pelagic fishes and the associated essential fish habitat.

Although sea turtles in the action area are highly mobile and can likely avoid large debris and turbidity, SCE would implement a Conduit Work Plan, a Dredging Plan, Anchoring Plan, and Turbidity Monitoring Plan to reduce localized and short-term effects.

### **Vessel Collision**

The Proposed Action would require the use of one tugboat, derrick barge, workboat, crew boat, and materials barge. Vertical structures removed during dispositioning of the offshore conduits would be placed on the seafloor near the work area and within a temporary laydown area covered by the CSLC lease. The debris would be marked with temporary buoys, as needed, then loaded onto a barge with a high-capacity crane for transport to the Port of Long Beach, as was done for the SONGS Unit 1 conduit dispositioning. Although temporary, the activities associated with the use of various marine vessels could result in take of sea turtles. However, the implementation of the Marine Mammal and Sea Turtle Mitigation and Monitoring Plan will minimize and avoid potential take to the maximum extent practicable.

Factors thought to be relevant to increasing risk of vessel strike include high speeds, limited clearance with the bottom, and restricted or narrow waterways; these factors all seem to contribute to the reduced ability of a sea turtle to avoid an oncoming vessel. None of those factors are present in this situation. All of these vessels are expected to move slowly (less than 7 knots). Slow operating speeds are expected to reduce the risk of vessel strike for sea turtles because they would allow for greater

opportunity for individuals to avoid the vessel. There will be at least several feet of clearance between the barges and the bottom at the shallowest conditions, with more clearance in the preponderance of conditions. Given the swimming ability of sea turtles in the action area, a sea turtle should be able to swim under the vessel without being hit. The areas to be transited by the barges are free flowing with no obstructions; therefore, there is ample room for a sea turtle to avoid a vessel. Given the slow operating speeds of the vessels, the clearance between the vessels and the ocean bottom, and the unimpeded geography of the action area, we expect sea turtles to be able to avoid any vessels. These factors combined with relatively low vessel trips (estimated at 2 per day during peak activities) make it unlikely that a project vessel will strike a sea turtle.

Consistent with NMFS's May 29, 2020, biological opinion for Oyster Creek, we have also considered whether avoiding these project vessels increases the risk of being struck by non-project vessels operating in the action area. In order for this to occur, another vessel would have to be close enough to the project vessel such that the animal's evasive movements make it such that it was less likely to avoid the nearby vessel. Given common navigational safety practices (i.e., not traveling too close to other vessels to minimize the risk of collisions), it is extremely unlikely that another vessel would be close enough such that evasive maneuvers from a sea turtle would increase its risk of being struck. Based on this analysis, the increase in risk of vessel strike in the action area due to the increased barge traffic is so small that it cannot be meaningfully measured, evaluated, or detected and it is extremely unlikely that a project barge or vessel will strike a sea turtle.

### **Underwater Noise**

A detailed assessment of airborne and underwater noise was included in the Final EIR as Appendix F3. Underwater noise would be generated from vessel engines, excavation, dredging, and side-casting operations, as well as from saw cutting various components (i.e., manhole access port structures, primary offshore intake structure, auxiliary offshore intake structure, and approximately 12 diffuser ports) with a diamond wire cutter. The most concentrated noise generating activities associated with the Proposed Action would take up to 5 months to complete, during which time underwater noise would be generated on an intermittent basis. The greatest underwater noise activity would be saw cutting activities. These noise-generating activities are likely to be intermittent and would only occur during discrete periods of construction lasting several months. However, temporary increases in underwater noise levels caused by Project-related vessel traffic (e.g., crew and tugboats) and other decommissioning activities (e.g., dredging, and saw cutting) may potentially expose listed marine life to excessive underwater noise levels.

Noise from crew boats and tugboats during the Proposed Action would be limited to short durations, typically while transporting crews and equipment. On a daily basis, the total duration of both types of operating vessels would likely be less than 2 hours per day. Vessel noise is a combination of narrowband tones at specific frequencies and broadband noise, which are roughly related to a vessel's size and speed.

Sound levels from vessel activity could exceed National Oceanic and Atmospheric Administration (NOAA) underwater acoustic thresholds for non-impulsive, continuous noise (120 dB<sub>rms</sub>; threshold used for marine mammals, and for sea turtles in the absence of formal criteria). However, noise generated by supply/crew vessels would be similar to noise generated by other vessels that routinely transit the water's surface. Any increase in ambient noise levels due to the Proposed Action would result in a minor increase noise levels sufficient for disturbing listed marine mammals and sea turtles. Noise from

vessel traffic would be comparable to noise generating activities in other coastal areas were marine mammals co-occur; therefore, this impact would be less than significant.

Data from acoustic monitoring devices installed before and during offshore dismantlement activities would be used to establish Level B behavioral harassment zones of influence where received underwater sound pressure levels (SPLs) are higher than 160 dB<sub>rms</sub> and 120 dB<sub>rms</sub> for impulsive noise sources (e.g., impact pile driving) and non-impulsive noise sources (e.g., vibratory pile driving, mechanic dismantling), respectively. The Project will employ Marine Mammal Observers (MMOs) during offshore decommissioning activities. The MMOs will use the behavioral harassment zones to determine whether stop work procedures need to be implemented for marine mammals and sea turtles active in the area. MMOs have the authority to halt activities with the potential to generate high-amplitude impulse or continuous noise when sensitive species are near noisy activities, allowing sensitive species time to depart the area under reasonably natural behavior. Should marine mammals occur within this area during these activities, there is potential for disturbance, which would constitute a Level B harassment scenario.

SCE will prepare a Marine Mammal and Sea Turtle Mitigation and Monitoring Plan to ensure that no harassment of marine mammals or other marine life occurs during the proposed action.

**NRC RAI #4. Provide an assessment of the potential impacts of decommissioning activities on federally listed species and critical habitat under the USFWS's jurisdiction that SCE has identified under Question 2. The assessment should consider all possible effects, including, but not limited to:**

- **effects of mortality or injury from collisions with plant structures, vehicles, or equipment;**
- **habitat loss, degradation, disturbance, or fragmentation and associated effects activities; and**
- **behavioral changes resulting from demolition, noise, and other site activities.**

There are no federally listed species with potential to occur within the action area that are under USFWS's jurisdiction.

**NRC RAI #5. Provide a copy of the following May 2020 PSDAR reference for NRC staff review: Enercon Technical Data Record No. SONGS002, "SONGS Units 2 and 3 Environmental Impact Evaluation," June 2014.**

Due to the size of this document, it will be uploaded into Box, the NRC's data transfer system.

**NRC RAI #6. Provide a copy of the 2019 botanical survey described on page 22, paragraph 2 of the May 2020 PSDAR for staff review.**

Please see separate attachment to this email.

## References

California State Lands Commission (CSLC)

2019 Final Environmental Impact Report for the San Onofre Nuclear Generating Station (SONGS) Units 2 & 3 Decommissioning Project. Available online at:  
<https://www.slc.ca.gov/ceqa/san-onofre/>

National Marine Fisheries Service (NMFS)

2006 Biological Opinion: Effects of the Nuclear Regulatory Commission's Continued Operation of the Diablo Canyon Power Plant and the San Onofre Nuclear Generating Station on Federally Listed Green Sea Turtles, Leatherback Sea Turtles, Loggerhead Sea Turtles, and Olive Ridley Sea Turtles.