Appendix D

Anchoring Plan

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SECTION FIFTEEN - ANCHORING PLAN

15.1 Overview

All nearshore and offshore activities will take place from a support vessel or derrick barge, or a surf sled vehicle (SSV). The support vessel or derrick barge will be moored in three or four-point anchorages. The SSV will be pulled ashore by a beach winch anchored by a deadman. The following anchoring protocols and plans will be employed in deploying, utilizing and recovering anchorages.

15.2 Anchoring Requirements

The disposition work will generate the following anchoring requirements:

15.2.1 Support Vessel or Derrick Barge Anchoring

A support vessel or derrick barge will be used to support the SSV operations and to support all offshore dispositioning operations. The support vessel or derrick barge will be moored over the planned work locations utilizing four anchorages (Anchor Set). Anchor Sets 1 through 3 will consist of 4-point anchorages while Anchor Set 4 will consist of a 3-point anchorage.

15.2.2 Beach Winch Anchoring

The SSV will be pulled shoreward from its launching position by a beach winch anchored to the beach with a buried deadman.

15.3 Definition of an Anchor Set

For purposes of this WEP, an “anchor set” is defined as any combination of anchors set at predetermined locations to provide anchorage within a defined work area. For example, a four-point anchor set involves the deployment of one anchor from each of the four corners of the derrick barge or support vessel.

15.3.1 Predefined Anchor Set

Four anchor sets have been predefined for the nearshore and offshore dispositioning. These anchor sets have been plotted in attached Appendix C - Anchor Pre-Plot. The final locations and sizes of the anchor sets may be adjusted in the final Work Execution Plan as needed to suit the site conditions in existence when the dispositioning work is actually performed.

15.3.2 Safety Zone

A safety zone is proposed around the anchor set. This safety zone will be defined as an imaginary boundary drawn between each anchor crown buoy of the anchor set. The purpose of this safety zone is to provide a boundary around the marine work site that helps commercial and recreational vessels in identifying the marine work site and remaining outside of the work areas. The safety zone will be physically discernable at the work sites by visually sighting between the crown buoys of the anchor set. The crown buoys will be marked with appropriate colors, striping and lettering, and will be also be marked with strobe lights.

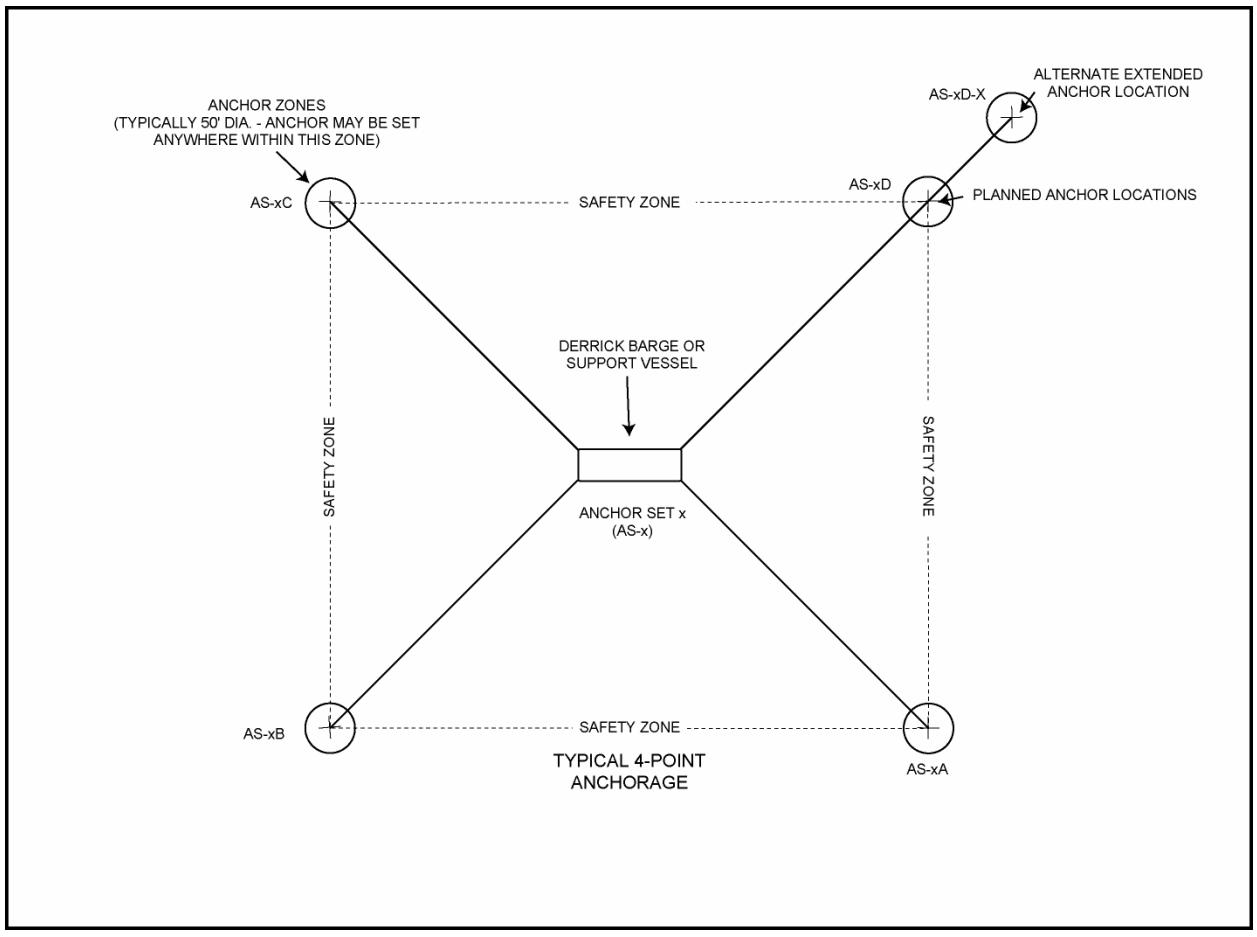

Figure 15-1 Typical Anchor Set Diagram

15.4 Definition of an Anchor Leg

The anchors will anchor the derrick barge or support vessel through wire ropes (anchor wires) that are connected to anchor winches fastened to the deck of the derrick barge or support vessel. A soft line will be attached to the crown (bottom end) of each anchor and connected to floating buoys to facilitate environmentally friendly recovery of the anchors. A combination of one anchor, the attaching anchor wire, a crown line and a crown buoy represent one “anchor leg”.

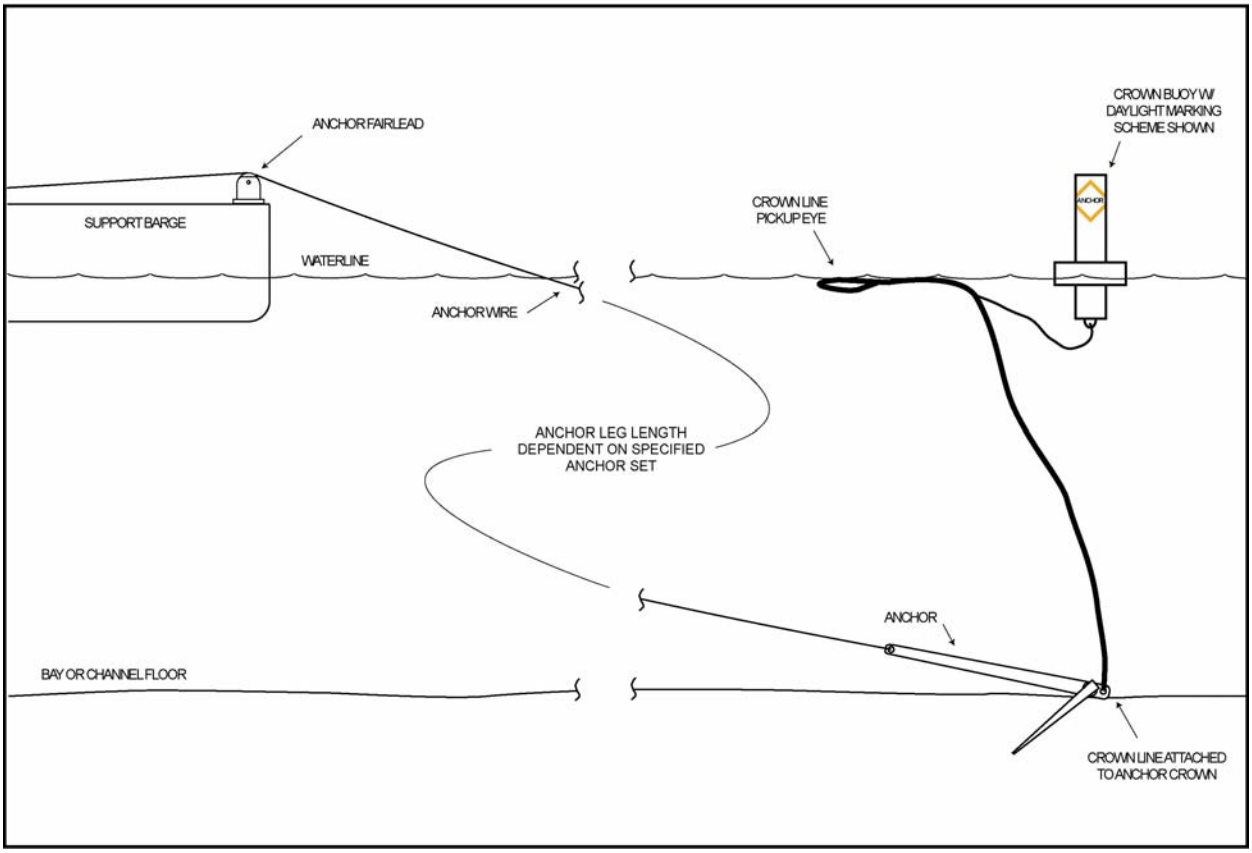

Figure 15-2 Typical Anchor Leg Diagram

15.5 Definition of an Anchor Zone

For purposes of this Anchor Plan, an anchor zone is a designated and approved 50-foot diameter circle anywhere in which an anchor may be placed. Although the coordinates for each designated anchor location are referenced to the center of each anchor zone, the anchor may be placed anywhere within the anchor zone. This anchor zone provides a realistic margin of error for the placement of each anchor. Biological survey of each anchor zone ensures that placement of the anchor anywhere within the anchor zone is acceptable. The bearing of each anchor wire from the

anchor zone to the respective support vessel will depend on the final placement of the anchor in the anchor zone and the position of the support vessel at any given time within a given anchor set (anchorage)

15.6 Anchoring Considerations

This anchoring plan is designed to minimize or eliminate impacts to the environment. Offshore, all anchor sets have been designed to avoid hard rock resources. The crossing of kelp beds by anchor wires has also been minimized to the greatest extent possible. Impacts to recreational or commercial boaters have been minimized by using the shortest anchor leg lengths practical. Impacts to beach users and surfers by the SSV pulling operation and beach winch have been minimized by use of a hawser that will be deployed for minimal durations and only when the SSV is actually being pulled.

15.7 Identification of Contractor Vessels and Buoys

The derrick barge, deck barge, support vessels, and buoys will be marked in accordance with the United States Code of Federal Regulations, Title 33, Chapter 34, Subchapter I, Part C and the publication titled Private Aids to Navigation.

15.7.1 Derrick Barge or Support Vessel

A derrick barge or support vessel will serve as the anchored work platform at the offshore work site. The derrick barge or support vessel may measure approximately between 90 and 220-feet in length will have a minimum of 4-feet of freeboard and a maximum draft of 10 feet. The deck of the derrick barge or support vessel will carry a crane and other support equipment and will be equipped with extensive deck lighting.

a. **Daylight Marking Scheme - Under Tow -** When the derrick barge or deck barge is under tow in daytime, a single 3-dimensional “diamond shape” not less than 2-feet in length and width will be suspended above the deck of the derrick barge or the tow vessel at the highest point possible.

b. **Daylight Marking Scheme – Anchored -** When anchored in daytime, two 3-dimensional “ball shapes” each not less than 2-feet in diameter will be suspended in a vertical line at the highest point possible above the deck of the derrick barge or support vessel at the vessel’s side at which the work is taking place. In addition, two 3-dimensional “diamond shapes” each not less than 2-feet in length and width will be suspended in a vertical line at the highest point

possible above the deck of the derrick barge or support vessel at the side of the vessel on which another vessel may safely pass.

c. **Nighttime Marking Scheme - Under Tow -** When under tow at nighttime, the derrick barge or support vessel will be marked with sidelights and a sternlight.

d. **Nighttime Marking Scheme – Anchored -** When anchored at nighttime, two "all-round" red lights in a vertical line will be displayed at the side of the vessel at which the work is taking place. In addition, two "all-round" green lights in a vertical line will be displayed at the side of the vessel on which another vessel may safely pass. In addition, the deck shall be lighted with deck illumination lights as needed.

15.7.2 Crown Buoys

The derrick barge or support vessel will be moored with a four-point mooring system. Crown lines with floating buoys will be attached to the anchor crowns to facilitate placement and recovery of the anchor, and to provide a visual reference of the safety zone established around the work site. The crown buoys shall consist of a self-righting, polyethylene spar type buoy, spherical metal buoys or small metal can type buoys that will sit upright with approximately 24 to 37-inches visible above water line.

a. **Daylight Marking Scheme** - The crown buoys will be white in color and will be marked with a 2 inch thick orange retro-reflective diamond measuring approximately 23 inches from top to bottom and side to side. Inside the diamond shall be an information label titled "ANCHOR" in 6 inch high black lettering. This crown buoy and markings will be visible from a distance of approximately 1 nautical mile.

b. **Nighttime Marking Scheme** - The crown buoys will be marked with a white strobe type marking lights. The lights will be attached to the top of the buoy and will be visible for a distance of approximately six miles. The lights will flash at a frequency of approximately 25 flashes per minute. The lights will be activated by a photocell that turns the light on at the onset of darkness and turns the light off in daylight. A "JOTRON" MF-1112 or equivalent will be used.

15.7.3 Support Tug

A support tug will be required to deploy and recover the derrick barge or support vessel anchors. The support tug may also be used to tow the derrick barge, tend the deck barge or tend the support vessel.

a. **Daylight Marking Scheme - When Towing -** When towing a derrick barge in daytime, the support tug will display three 3-dimensional "shapes" suspended above the deck in a vertical line. These shapes shall consist of "round shapes" not less than 2-feet in diameter in the highest and lowest positions, and a "diamond shape" not less than 2-feet in length and width in the middle of the vertical line.

b. **Nighttime Marking Scheme - With and Without a Tow -** When not towing at nighttime, the support tug will be marked with sidelights and a sternlight. When towing at nighttime, the support tug will be marked with three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be green.

15.8 General Anchoring Procedures

The following general anchoring procedures will be used in deploying and recovering all anchors used to support the marine dispositioning work.

15.8.1 Surface Navigation and Pre-Plots

APC will utilize a professional marine surveyor to accurately position the anchors at their predetermined locations. The marine surveyor will use differential geographic positioning system (DGPS) equipment with sub-meter accuracy to accurately locate the required positions.

A commercial-quality DGPS system will be installed in the wheelhouse of the support tug. All bathymetric and geophysical survey data, and diver verification data obtained by SCE in support of this dispositioning work will be pre-programmed into this DPGS system before the onsite work begins. The planned anchors set and all debris targets will also be pre-programmed into the DGPS system. A backup system and uninterruptible power source will also be provided.

The existing site data will be viewed by the marine surveyor on a computer display located in the wheelhouse and real-time positioning of the support tugboat will be superimposed over the existing site data. The display will update approximately 10 times

per second and the support tug operator will be available to view the display along with the marine surveyor, piloting the support tug to the exact location required.

15.8.2 Deploying and Recovering Anchors

With the exception of the first anchor deployed, all derrick barge and support vessel anchors will be deployed and recovered by the support tug utilizing the basic procedures described in this section.

The first anchor of each anchor set will be lowered from the derrick barge or support vessel to the seafloor at the pre-designated anchor location. Once the first anchor is lowered, the support tug will "fly" the other anchors from the derrick barge or support vessel to the pre-designated anchor locations specified.

"Flying" anchors is an anchoring procedure in which the anchor is carried or suspended by the support tug and carried to the pre-designated anchor location by a crown line. The anchor is lowered by the crown line into place at the pre-designated site when the anchors are deployed, and the anchor is raised vertically by the crown line with a winch for transport back to the support barge when the anchors are "weighed" (lifted off of the seafloor). Flying anchors to and from location eliminates unnecessary anchor wire contact with the sea floor. It should be noted that at no time will APC drag anchors across the sea floor.

In this application, the "crown line" will consist of a synthetic soft line pennant or wire rope with one end attached to the crown or base of the anchor stock and the other end attached to a floating anchor marking buoy. Use of a crown line enables the support tug to slip (trip) an anchor backwards out of its set rather than having the support barge righting the anchor with the anchor wire during the anchor weighing process. Recovering anchors by utilizing crown lines generally disturbs the sea floor less than weighing the anchor vertically with the anchor wire or chain.

15.9 Beach Winch Anchoring

A winch will be temporarily installed on the beach to facilitate movement of the SSV. This winch will be anchored to a deadman buried in the sand. The deadman will consist of a heavy wall steel pipe or beam with two padeyes welded on one side for use in rigging the deadman to the winch. The deadman will be placed in a trench of pre-determined depth excavated on the beach at a pre-determined location. The winch will be set on the beach at the seaward edge of the trench. Rigging of pre-determined size and type will be used to fasten the deadman to the winch. The

deadman trench will then be backfilled. Once the beach winch requirement has been completed, the deadman will be uncovered, disconnected from the winch and removed.

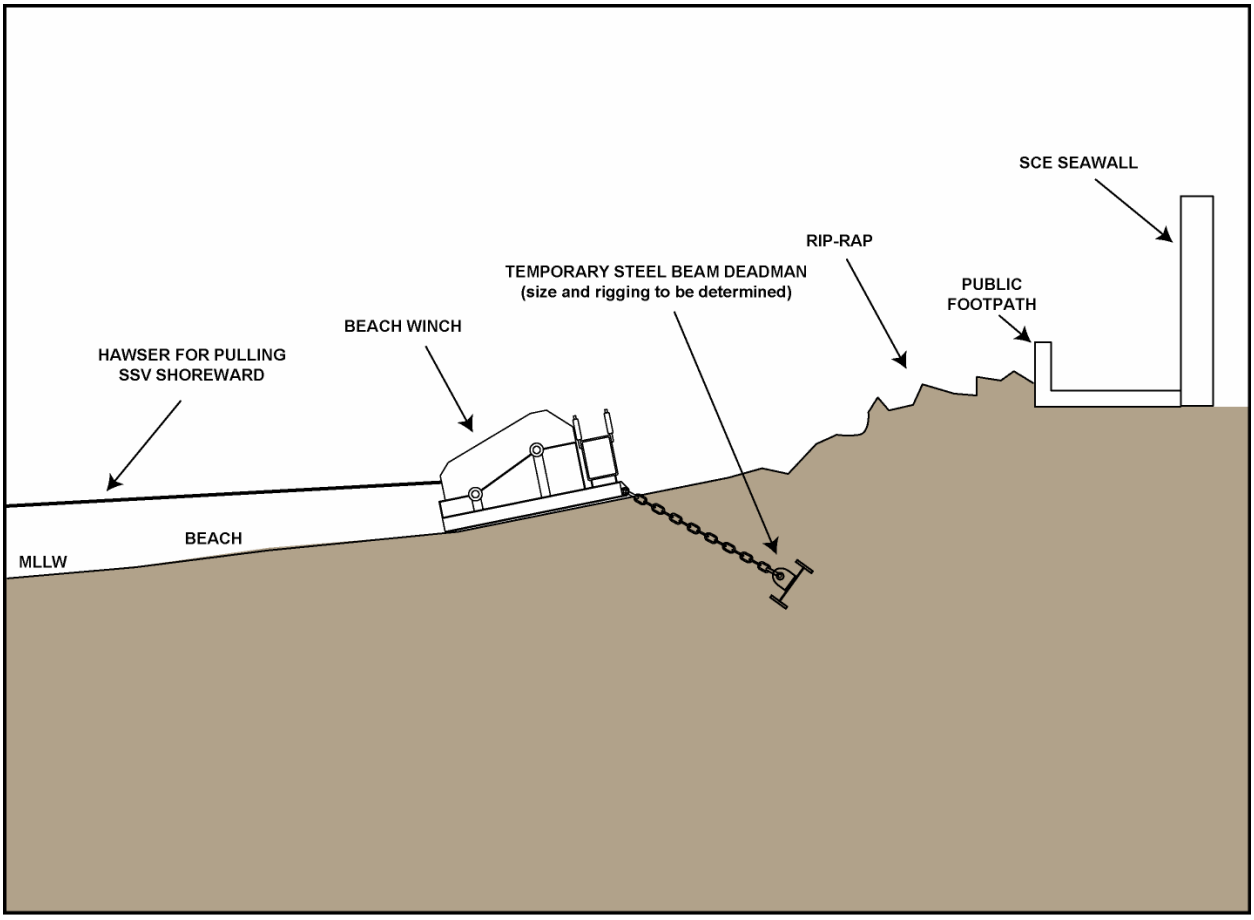

Figure 15-3 SSV Beach Winch Installation

15.10 Local Notice to Mariners

APC will file a Local Notice to Mariners with the U.S. Coast Guard no less than 15 days prior to the start of work. This notice will inform local boaters of the potential navigational hazards at the Pebbly Beach marine work site temporarily created by the marine decommissioning operations. This notice shall state the following:

Associated Pacific Constructors, Inc. will be conducting debris recovery and diving operations offshore San Onofre Nuclear Generating Station, Unit 1, beginning _____ ___, 2006 and _____ ___, 2006. The derrick barge ___name of primary support vessel_____ will be onsite along with the support tug _____ _____. A three or four-point mooring system will anchor the support barge. All anchors will be marked with a crown buoy. Each crown buoy will be composed

of a white buoy marked with the word "ANCHOR" and flashing white lights. These removal operations will involve extensive diving and, as such, all vessels are requested to remain at least 100-feet outside of the perimeter formed by the four crown buoys. The support tug will monitor VTS channel 16 when working at the site. For further comments or details, contact Mark Steffy at Associated Pacific Marine, 805.649.9364.

15.11 Anchor Pre-Plot Drawing

An anchor pre-plot is attached in Appendix C – Anchor Pre-Plot of this WEP. This Anchor Pre-Plot depicts the location of the underwater facilities, geophysical features and the proposed anchorages and anchor locations.