4.10 CULTURAL RESOURCES

This section analyzes the potential impacts of the Proposed Project on cultural resources. Cultural resources consist of places or objects that are valued for scientific, historical, or religious reasons. Cultural resources include prehistoric archaeological sites, architectural remains, historic remains, shipwrecks, isolated artifacts, and other material objects that provide evidence of past human activities. Certain places may be protected as important cultural resources because of their value to a culture for traditional and religious reasons.

4.10.1 Description of Resource/Environmental Setting

The area of potential effect (APE) is the 11-acre (5-ha) project area that includes the buried cooling water conduits that extend from the power plant into the Pacific Ocean and the area of disturbance from disposition activities.

Regional Overview

The prehistoric sequence commonly applied to northern San Diego County, e.g., Reddy and Byrd 1997, consists of three major periods. The first is the Paleoindian period (11,500-8500 years before present [B.P.]), a time in which adaptations were formerly believed to have been focused on the hunting of large game but are now recognized to represent more generalized hunting and gathering, with considerable emphasis on marine resources (Erlandson and Colten 1991; Jones 1991; Erlandson 1994). Because throughout this period much more of the continental shelf was exposed due to lowered sea levels, it is widely recognized that Paleoindian sites must have been inundated by Holocene sea level rise and now lie offshore.

The following period, the Archaic (8500-1300 B.P.), is traditionally seen as encompassing both a coastal and an inland focus, with the coastal Archaic represented by the shell middens of the La Jolla complex and the inland Archaic represented by the Pauma complex. Coastal settlement is also seen as having been significantly affected by the stabilization of sea levels around 4,000 years ago that led to a general decline in the productivity of coastal ecosystems. Nevertheless, recent research on MCB Camp Pendleton has documented continued occupation along the coast well after this decline was in progress (Byrd and Reddy 2002). The Late Prehistoric period (1300-200 B.P.) is marked by the appearance of small projectile points indicating the use of the bow and arrow, the common use of ceramics, and the replacement of inhumations with cremations, all characteristic of the San Luis Rey complex as defined by Meighan (1954). The San Luis Rey complex is divided temporally into San Luis Rey I and San Luis Rey II, with the latter distinguished mainly by the addition of ceramics. When

Europeans arrived in southern California, what is now northern San Diego County was occupied by Takic-speaking groups known to the Spanish as the Luiseño, whose territory is thought to have comprised some 1,500 square miles (3,885 km^2) of coastal and interior southern California (White 1963).

The arrival of Spanish explorers in 1769 was followed by the establishment of Mission San Juan Capistrano in 1776. Spanish colonial period shipping in the area would have been infrequent, although ships may have anchored near Dana Point to bring passengers or supplies to Mission San Juan Capistrano. According to Richard Henry Dana, pirate ships reportedly visited the area in the late eighteenth and early nineteenth centuries. Commercial shipping increased during the twentieth century, and several shipwrecks occurred in the area (see below). It is also reported that the north coast of San Diego County was used during Prohibition (1920-1933) to transfer loads of liquor from boats to caches in the Santa Margarita Mountains (Schaefer 1997).

Prehistoric Offshore Setting

Since the height of the last glaciation about 18,000 years ago, warming climates have melted much of the polar ice caps and resulted in rapidly rising sea levels. This sea level rise has been accompanied by marine transgressions that have covered much of the continental shelf (Curray 1965; Inman 1983). It has long been recognized that because the now-inundated portions of the shelf were likely occupied by humans during late Pleistocene and early Holocene, the terrestrial archaeological record is necessarily incomplete since many early cultural sites must now lie offshore (Kraft et al. 1983; Moratto 1984; Carbone 1991).

Recent findings along the coast of southern and central California have provided evidence that the submerged archaeological record is more substantial than previously supposed. First, the continuing accumulation of very early radiocarbon dates from coastal southern California increasingly demonstrates a significant human presence throughout the region during the terminal Pleistocene and earliest Holocene. For example, radiocarbon dating of both archaeological deposits and skeletal material has confirmed human presence on the Channel Islands as early as about 13,000 years ago (Johnson et al. 2001; Rick et al. 2001), while mainland coastal sites now reveal occupation well in excess of 9,000 years (Macko 1998; Jones et al. 2002). More importantly, these findings seem to show that a coastal gathering economy was in place very early on, suggesting that ancient coastlines may have been a focus of settlement (Jones et al. 2002). Finally, contrary to the common assumption that the marine transgression would have destroyed nearly all archaeological components on the continental shelf, recent sediment coring along the coast of San Diego County has

revealed good potential for site preservation where paleoestuaries provided low-energy depositional environments (Pettus and Hildebrand 2000).

Although prehistoric cultural materials are unusually abundant off the coast of San Diego County, nearly all consist of stone bowls or mortars (Masters and Schneider 2000). Most of these locations are concentrated off La Jolla and Point Loma, with relatively few in the northern portion of the county. While a few of these locations near the shore may be the *in situ* remnants of flooded prehistoric habitations, most are interpreted as having eroded from bluff top sites or as having been dropped from watercraft while fishing in kelp bed and rocky reef habitats (Masters 1983, 1985; Masters and Schneider 2000).

The Proposed Project area does not appear to be in a sensitive location for submerged prehistoric archaeological resources. Situated in an open coastal setting some distance south of the San Onofre Creek paleochannel and estuary, it would be exposed to considerable wave action during the Holocene marine transgression and appears unlikely to contain intact prehistoric deposits. Moreover, submerged artifact locations are more typically found at rocky headlands than in sandy bottom conditions such as the project area (Masters 1983, 1985). No prehistoric artifact locations are recorded near the project area (Pierson et al. 1987), and any undisturbed onshore prehistoric archaeological sites would be located well outside the project APE. All onshore areas adjacent to the project have been substantially altered due to the development of SONGS Units 1, 2, and 3.

Historic Resources

Submerged historic properties include sunken ships, boats, and other vessels such as barges; cargo or fittings such as anchors lost from vessels; sunken navigational equipment such as buoys; sunken aircraft; and various sorts of industrial equipment related to activities such as offshore oil development.

Shipwreck data maintained by the CSLC, as well as other published sources (Marshall 1978; Pierson 1980; Pierson et al. 1987), suggest that six known historic shipwrecks lie within 10 miles (16 km) of the project area. These shipwrecks are described below and listed in Table 4.10-1.

Table 4.10-1. Shipwrecks

Shipwrecks					
Vessel Name	**Vessel Type**	**Built**	**Lost**	**Displacement (tons)**	**Location/Loss Situation**
Agram	---	---	5/18/40	---	Wrecked at San Clemente
Stranger	Oil Screw	1918	7/17/48	90	4 miles west of San Onofre
Onward	Oil Screw	1919	1950	51	---
Western Pilot	Oil Screw	1933	1933	113	8 miles SSW of Dana Pt.
Kitty-A	---	1856	1941	---	Sunk at San Mateo Point
Nerda	Barge	1918	1936	53	6 miles off of San Clemente

- The *Agram* is recorded as having sunk at San Clemente in 1940 (Marshall 1978). No particulars on the vessel are available. The plotted location directly along the beach is assessed as probably being within 1 mile (2 km) of the actual location, which could potentially place the wreck within the project site (CSLC database). However, the wreck may have been salvaged (Pierson 1980).

- The *Kitty-A* is recorded as having sunk "at San Mateo Pt." in 1941 (Pierson et al. 1987); the only additional information on this vessel is that she was built in 1856.

- The *Stranger* is recorded as having sunk 4 miles (6 km) west of San Onofre in 1948 (Marshall 1978). This 90-ton (82-metric ton) oil screw vessel was built in 1918; no other particulars are available, except that Pierson (1980) indicates part of the cargo was salvaged. The plotted location is assessed as probably being within 1 mile (2 km) of the actual location. This distance would potentially place the wreck within the project site (CSLC database). According to Pierson (1980), however, the wreck has only been pinpointed within 10 nautical miles (12 miles).

- The *Western Pilot*, a 113-ton (103-metric ton) oil screw vessel, was built in 1933 and burned and sank 8 miles (13 km) south-southwest of Dana Point in 1953 (CSLC database). In some records *Western Pilot* is referred to as *Western Point* (Pierson et al. 1987).

- The *Onward*, a 51-ton (46-metric ton) oil screw vessel, was built in 1919 and burned and sank in 1950; latitude and longitude readings place it near the *Western Pilot* (CSLC database). If this is correct, the location description "5 miles southwest of Catalina Harbor" (CSLC database) is incorrect; it would be more than 20 miles (32 km) east of Catalina Harbor.

- The *Nerda*, a 53-ton (48-metric ton) barge, was built in 1918 and lost in 1936, 6 miles (10 km) off San Clemente (Pierson et al. 1987).

The project site has been directly examined by several teams of divers and has been subjected to two side scan sonar testing surveys. Although these surveys were not specifically conducted to examine cultural resources, no cultural resources were observed in the area during these surveys. Review of both the underwater video and the side scan sonar data has revealed no evidence for historic cultural sites within the project area. Finally, the seafloor within the APE was substantially altered 40 years ago when the offshore conduits were constructed; no shipwrecks were identified at that time, and any smaller historic artifacts would have been obliterated by the project construction activities at that time.

4.10.2 Regulatory Setting

Federal

A number of Federal statutes, regulations, and rules govern the protection of cultural resources in the project area, including:

- the Antiquities Act of 1906;
- the National Historic Preservation Act of 1966;
- Executive Order 11593;
- the Archaeological and Historic Preservation Act of 1979;
- the American Indian Religious Freedom Act of 1978; and
- the Shipwreck Preservation Act of 1987.

State

The pertinent State legislation and local plans that govern the protection of cultural resources in the project area include:

- the CEQA and the State CEQA Guidelines (Sections 21083.2 and 21084.1 and Appendix K);
- the CCC Guidelines for Permitting Archaeological Investigations;
- CSLC policies and procedures;

- the Native American Heritage Commission Guidelines (1989); and
- the State Historic Preservation Officer (SHPO)-published checklists that are broadly applicable: (1) adequacy of archaeological testing programs, (2) determinations of site significance and uniqueness, and (3) mitigation reports.

4.10.3 Significance Criteria

Thresholds of significance for cultural resource impacts for the project are defined as situations where disposition activities could:

- result in damage to, the disruption of, or adversely affect a property that is listed in the California Register of Historical Resources (CRHR) or a local register of historical resources per Section 5020.1 of the Public Resources Code;
- cause damage to, disrupt, or adversely affect an important prehistoric or historic archaeological resource (including shipwrecks) such that its integrity could be compromised or eligibility for future listing on the CRHR diminished; or
- cause damage to or diminish the significance of an important historical resource such that its integrity could be compromised or eligibility for future listing on the CRHR diminished.

Any damage to a cultural resource determined to be “important” based on the criteria outlined above would be considered a significant impact.

4.10.4 Impact Analysis and Mitigation

The APE includes the 11-acre (5-ha) project area only; any offsite activities (concrete recycling, etc.) would occur at existing permitted facilities. The potential impacts of the Proposed Project were assessed through the following process: (1) defining the agents or causes of impact from the Proposed Project; (2) outlining the APE of the Proposed Project; (3) identifying the location of any known cultural resources in the project vicinity; (4) identifying the sensitivity or likelihood of the occurrence of significant cultural resources within the APE; and (5) evaluating the significance of those resources and assessing the degree to which the project would affect their significant aspects.

A records search was conducted at the South Coastal Information Center at San Diego State University to identify recorded cultural resources in the vicinity of the project area. Shipwreck data maintained by the CSLC were also consulted as well as other published sources. Cultural resources data maintained by the Office of Environmental Security at MCB Camp Pendleton were also examined.

Impact CUL-1. Effects on Archaeological Resources, including Shipwrecks

Activities could damage, disrupt, or adversely affect a CRHR property or diminish the quality of an important prehistoric or historic archaeological resource or a historical resource such that its integrity or eligibility for future CRHR listing would be diminished (Class III)

Although there are no known archaeological resources in the APE, two types of prehistoric remains may occur within the water depths associated with the project site. These include: (1) *in situ* prehistoric remains that pre-date the Holocene Transgression and that are situated on relict, submerged landforms, either mantled with unconsolidated marine sediments or exposed on bedrock outcrops; and (2) remains deposited subsequent to the Holocene marine transgression and situated on the seafloor or within unconsolidated recent sediments. These remains would consist primarily of isolated prehistoric and historic artifacts.

Although historic shipwrecks are recorded in the general vicinity of the project area, none have been physically located and their precise locations are unknown. Because the condition of the wrecks or the extent of possible salvage is unknown, their National Register of Historic Places (NRHP) eligibility cannot be determined. Based on available information, the likelihood that shipwrecks are located within the project area is remote and unrecorded wrecks within the project site are unlikely. The project site is not located on an approach to a major shipping or fishing port, which diminishes the probability of ship or fishing boat wrecks. There is, however, a small boat harbor at Dana Point. Thus, aside from the larger vessels for which records are likely to have been kept, numerous small recreational boats, e.g., sailboats, motorboats, have frequented this stretch of the coast and continue to do so. Sinkings may have occurred, but it is likely that most would be less than 50 years old.

As discussed above, underwater surveys, which included side-scan sonar, did not identify historic resources in the project area. No magnetometer survey has been conducted in the area, and it is possible that the strong sea surges that characterize the southern California coast could have obscured wreck remains with sand. However, this is unlikely due to the shallow sand in the project area, and because obvious wreck remains are not present within the project site.

The Proposed Project would be undertaken in areas that are underlain by bedrock and covered by sand. The project area is a high-energy, dynamic environment in which the cover of sand is readily moved by waves and currents. Because of these conditions, the presence of intact prehistoric cultural deposits within the project area is very

unlikely. Moreover, any isolated prehistoric artifacts within the project area are likely to have been redeposited by waves and currents.

The Proposed Project would only involve excavation of backfilled sediment and rock riprap that had been placed in the alignment when the offshore conduits were constructed approximately 40 years ago. Any shipwreck remains or prehistoric cultural material in the affected area would therefore have been obliterated by the installation of the conduits. The proposed disposition is considered a less than significant impact (Class III). No mitigation is required.

Table 4.10-2 summarizes the cultural resources impacts and mitigation measures.

Table 4.10-2. Summary of Cultural Resources Impacts and Mitigation Measures

Impact	Mitigation Measures
CUL-1: Effects on Archaeological Resources, including shipwrecks	No mitigation required

4.10.5 Alternatives

4.10.5.1 Complete Removal of Conduits Alternative

Impact CUL-ALT-1. Effects on Archaeological Resources, including Shipwrecks

Activities could damage, disrupt, or adversely affect a CRHR property or diminish the quality of an important prehistoric or historic archaeological resource or a historical resource such that its integrity or eligibility for future CRHR listing would be diminished (Class III)

This alternative would only involve excavation of backfilled sediment and rock riprap that had been placed in the alignment when the offshore conduits were constructed approximately 40 years ago. Any shipwreck remains or prehistoric cultural material in the affected area would therefore have been obliterated by the installation of the conduits. As with the Proposed Project, this alternative would have a less than significant impact on cultural resources (Class III). No mitigation is required.

4.10.5.2 Removal of Nearshore Components Alternative

Impact CUL-ALT-2. Effects on Archaeological Resources, including Shipwrecks

Activities could damage, disrupt, or adversely affect a CRHR property or diminish the quality of an important prehistoric or historic archaeological resource or a

historical resource such that its integrity or eligibility for future CRHR listing would be diminished (Class III).

This alternative would only involve excavation of backfilled sediment and rock riprap that had been placed in the alignment when the offshore conduits were constructed approximately 40 years ago. Any shipwreck remains or prehistoric cultural material in the affected area would therefore have been obliterated by the installation of the conduits. As with the Proposed Project, this alternative would have a less than significant impact on cultural resources (Class III). No mitigation is required.

4.10.5.3 Crush Conduits and Remove Terminal Structures Alternative

Impact CUL-ALT-3. Effects on Archaeological Resources, including Shipwrecks

Activities could damage, disrupt, or adversely affect a CRHR property or diminish the quality of an important prehistoric or historic archaeological resource or a historical resource such that its integrity or eligibility for future CRHR listing would be diminished (Class III).

This alternative would only involve excavation of backfilled sediment and rock riprap that had been placed in the alignment when the offshore conduits were constructed approximately 40 years ago. Any shipwreck remains or prehistoric cultural material in the affected area would therefore have been obliterated by the installation of the conduits. As with the Proposed Project, this alternative would have a less than significant impact on cultural resources (Class III). No mitigation is required.

4.10.5.4 Artificial Reef Alternative

Impact CUL-ALT-4. Effects on Archaeological Resources, including Shipwrecks

Activities could damage, disrupt, or adversely affect a CRHR property or diminish the quality of an important prehistoric or historic archaeological resource or a historical resource such that its integrity or eligibility for future CRHR listing would be diminished (Class III).

This alternative would involve the emplacement of reef materials on the surface of the seafloor. Because undisturbed areas of the seafloor within the artificial reef area are mantled by Holocene-age sediments, Pleistocene-age deposits would remain undisturbed. This alternative therefore would have a less than significant impact on cultural resources (Class III).

4.10.5.5 No Project Alternative

Impact CUL-ALT-5. Effects on Archaeological Resources, including Shipwrecks

This alternative would involve no disturbance of offshore sediments and would have no impact on cultural resources (Class III). No mitigation is required.

4.10.6 Cumulative Projects Impacts Analysis

None of the previously discussed cumulative projects involved underwater construction activities offshore; therefore, the Proposed Project, in conjunction with known projects, would not contribute to any adverse cumulative effect on cultural resources.

4.10.7 References

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