ATTACHMENT A: PROJECT DESCRIPTION

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ATTACHMENT A: PROJECT DESCRIPTION

1.1 PROJECT PURPOSE AND SUMMARY

In 2001, the California Coastal Commission (CCC) approved Coastal Development Permit (CDP) No. E-00-014, "Construction of San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 Temporary Spent Nuclear Fuel Storage Facility," authorizing Southern California Edison Company (SCE) to construct an independent spent fuel storage installation (ISFSI) to house the spent fuel used to generate electricity by SONGS Units 2 and 3 (2001 ISFSI CDP). This facility was constructed on the existing, developed industrial site where Unit 1 was previously located.

The 2001 ISFSI CDP allowed for the development of approximately 104 concrete fuel storage modules (FSMs) located on reinforced concrete pads. Spent fuel is sealed inside transport canisters, which are inserted horizontally into the FSMs. The 2001 ISFSI CDP provided for the installation of three concrete pads covering an approximate area of 25,550 square feet (sf),[1] in addition to the existing 4,067 sf Unit 1 ISFSI onsite.[2] Under the 2001 ISFSI CDP, only the development described in the project description was approved by the CCC. Special Condition 5 of the 2001 ISFSI CDP provides that "any future substantive physical or structural improvements to the physical structure, including but not limited to an increase in storage capacity of spent nuclear fuel…shall require an amendment" to the 2001 ISFSI CDP from the CCC. Accordingly, SCE is requesting an amendment to allow for expansion of the existing onsite ISFSI (Proposed Project).

SCE has removed all fuel from the nuclear reactors and placed it into spent fuel pools, where fuel is stored and cooled before it is transferred to dry storage on/at the ISFSI. The proposed ISFSI expansion is required because the existing ISFSI is approaching full capacity. Therefore, additional storage is necessary to transfer the fuel from its existing location in wet storage pools to the ISFSI. SCE plans to transfer all of the fuel into dry storage as quickly as feasible due to the safety benefits associated with dry storage systems.

Under the Proposed Project, SCE would construct a new ISFSI incorporating approximately 80 additional steel-reinforced FSMs. The FSMs would remain until transfer of the transportation canisters to an off-site repository. Unlike the existing aboveground ISFSI, the additional FSMs would house spent fuel storage canisters in a vertical configuration. The completed structure, encompassed by an earthen berm, would provide the benefits of an underground system. In addition, the Proposed Project includes an aboveground security building that would be approximately 26 feet (ft) in height, a new fence, and associated lighting and security equipment. Drainage will be modified in the area but will discharge from the same location.

[1] The "as-built" square footage of the current ISFSI is 30,600 sf of reinforced ISFSI pad. The CCC determined in 2012 that the as-built ISFSI is consistent with the CCC's findings in the 2001 ISFSI CDP.

[2] Construction of a temporary used fuel storage facility for Unit 1 was authorized under CDP No. E-00-1, "Demolition and Removal of the SONGS Unit 1 Buildings and Other Structures (e.g., Reactor Vessel, Containment Sphere) and Construction of Temporary Used Fuel Storage Facility."

As noted in both CDP E-00-1 and E-00-014, the United States Nuclear Regulatory Commission (NRC) has sole jurisdiction over the regulation of nuclear power plants, including radioactive hazards, safety issues, and spent fuel handling and storage. The State of California is preempted from imposing upon nuclear power plant operators any regulatory requirements concerning radiation hazards and nuclear safety. The possession, handling, storage, and transportation of spent nuclear fuel similarly are precluded from state regulation. SCE's SONGS Units 2 and 3 operating licenses require the SCE to comply with all NRC regulations that apply to the operations and activities conducted at those units, including the possession, use, and storage of nuclear fuel. The scope of the Proposed Project does not result in the radioactive releases, but SCE will monitor the Proposed Project for radioactive releases using the same programs and procedures currently implemented for the commercial operation of the plant. This CDP application ensures that the Proposed Project complies with provisions of the California Coastal Act and associated regulations.

1.2 PROJECT SITE

1.2.1 SONGS Site

The SONGS facility is situated on 83.6 acres (ac) located in the northern portion of San Diego County, near the border of Orange County (SONGS Site). Refer to Figure 1, Regional Project Location, for a regional project overview location map and Figure 2, Site Boundaries, for a delineation of the SONGS Site boundary. SONGS is bounded on the north and northeast by Old Pacific Coast Highway and Interstate 5 (I-5), on the northwest by a surface parking lot for SCE employees, and on the west and south by the San Onofre State Beach and the Pacific Ocean. The facility is located on land that is subject to an easement granted to SCE from the United States Department of the Navy (Navy). The site is located near the shoreline of San Onofre State Beach, which is publicly accessible and commonly used for recreational activities. Although SONGS borders the San Onofre State Beach, public access to and through the site is strictly prohibited and is prevented by a seawall bordering the southern (oceanward) boundary of the property. Vehicular access to the SONGS Site is provided along Old Pacific Coast Highway, which is locally accessible via the I-5/Basilone Road interchange.

An extensive feasibility study was prepared, which analyzed five areas on the SONGS Site for development of the Proposed Project. These five areas include the following: (1) the Reservoir, (2) the North Industrial Area (NIA), (3) the K Buildings, (4) the Make-Up Demineralizer (MUD) Area, and (5) the South Yard. Refer to Figure 3, Location Alternatives and Assessor's Parcel Numbers, for a delineation of the five areas. Results of this study found that a portion of the NIA was the area on the SONGS Site best suited for development of the Proposed Project (Project Site) for several reasons, including, but not limited to, the following: there is an existing ISFSI pad in this area, the geologically stable soils are conducive for this type of construction on the Project Site, the relatively short and direct travel route from the Protected Area[3] where spent fuel pools are located, and the level of groundwater approximately 17.65 feet (ft) below ground surface (bgs). Although the vertical height of the Proposed Project would be 24.5 ft, the underground portion of the project would only require excavation up to 12.25 ft bgs with the remaining 12.25 ft above grade encased in a berm sloping from

[3] "Protected Area" is a NRC term that refers to an area encompassed by physical barriers and to which access is controlled in accordance with NRC regulations.

the top of the structure to the existing grade[4]. The final grade configuration of the structure would be below ground. As previously stated, groundwater is 17.65 ft bgs, providing a 5.4 ft margin from the proposed depth of the ISFSI and precluding the need for dewatering. (Refer to Attachment B, Environmental and Land Use Issues, for further discussion related to the environmental characteristics of the Project Site). For these reasons, the NIA was selected as the optimal area for development of the Proposed Project. Alternative sites that were considered are discussed in Sections 1.5.2 and 1.5.3.

1.2.2 Proposed Site

The Project Site is a rectangular-shaped area and is generally flat at an approximate elevation of 19.75 ft above mean sea level (amsl). The Project Site is an industrial complex that was formerly developed with Unit 1, which has since been retired and partially decommissioned. As such, the site has previously been developed and disturbed and does not contain any native, natural, or any other type of sensitive habitats. The closest sensitive receptors[5] are recreational users of the San Onofre State Beach approximately 350 ft west of the Proposed Project. The next nearest sensitive receptor is a residence near the San Onofre Recreation Beach area, located approximately one mile away. Environmentally sensitive habitat areas[6] are located northwest and southeast of the Project Site. These ESHA include habitat that consists primarily of coastal sage scrub and, as described further in Attachment B (Section 1.1.4, Marine Resources, Water Quality, and Environmentally Sensitive Habitat Areas), would not be affected as a result of project implementation.

The Project Site is surrounded on all sides by existing on-site industrial structures. The southern portion of the Project Site is bordered by a small downward-facing slope leading to a paved area that sits approximately 6 ft below the elevation of the Project Site. This area generally consists of paved asphalt, temporary fencing, and industrial equipment. The area bordering the eastern perimeter of the Project Site is characterized by paved asphalt, trash receptacles, and other miscellaneous industrial equipment. The northern portion of the project site is bordered by a small concrete fence with a small opening allowing for pedestrian and vehicular access in the northeastern corner of the site. An internal two-lane roadway and SCE buildings are present to the north of the Project Site. The western portion of the Project Site is generally open and is characterized by paved asphalt; however, a large tent with dry fuel handling materials, shipping containers, industrial equipment, and a large slope sprayed with gunite are present near the western boundary of the Project Site. Concrete remnants associated with Unit 1 are present on the southern portion of the Project Site. In addition, a rail spur is located adjacent to the southeastern boundary of the Project Site.

The Project Site is partially developed with the existing ISFSI (see Section 1.3, Site History, below), leaving only a portion of the site available for implementation of the Proposed Project (Expansion

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4 The vertical height of 24.5 ft has been rounded up to allow for reasonable flexibility with regard to the ultimate vertical elevations of the ISFSI. In calculating excavating depths, fill heights and square footage, the planned overall ISFSI pad height of 22.5 (consisting of 11.75 ft below existing grade and 10.75 ft above existing grade) to avoid overestimating these numbers.

5 Sensitive receptors are defined as individuals that have an increased sensitivity to environmental impacts (i.e., noise and air quality). As such, sensitive receptors include schools, parks and recreational uses, day care centers, nursing homes, hospitals, and residential dwelling units.

6 Sensitive habitats are defined as “Environmentally Sensitive Habitat Areas” (ESHAs). ESHAs are designated areas within the California Coastal Zone that generally contain sensitive plant and animal species for which protection is given under the California Coastal Act (CCA).

Area). Security bollards and a security fence border the perimeter of the existing ISFSI, prohibiting unauthorized vehicle access. Large industrial light poles with security cameras are also present near the existing ISFSI. The Expansion Area is currently characterized by asphalt, a rail spur, storage buildings, shipping containers, and construction equipment.

Refer to Figure 4, Key View Locations, and Figures 4a through 4c, Key Views 1 through 6, for visual representations of the Project Site and surrounding area in its existing condition.

1.3 SITE HISTORY

The SONGS Site previously consisted of three nuclear power reactors operated by SCE. Unit 1 began operations in 1968 and was shut down in 1992; operations at Units 2 and 3, began in 1982 and 1983, respectively, and ceased in 2013.[7] Following an extended shutdown period, SCE announced plans to decommission Units 2 and 3 on June 7, 2013.

As previously stated, in 2001 the CCC issued a CDP allowing for the construction of three separate steel-reinforced concrete pads spanning the area of 25,550 sf. The concrete pads were approved as an aboveground ISFSI to accommodate 104 steel-reinforced concrete FSMs. At this time, the existing aboveground ISFSI on the Project Site is approaching full capacity as it currently contains 51 loaded and 12 empty FSMs, with a remaining capacity for an additional 26 FSMs. The fuel storage pads were determined to be necessary to provide additional storage capacity for spent fuel from Units 2 and 3 due to the lack of a federal off-site repository, federal interim storage site, or a private storage site. To facilitate the transfer of existing fuel to dry storage, in 2014 SCE was presented with several proposals for dry cask storage systems, including a proposal from Holtec International that introduced a seismically enhanced version of the previous dry-cask storage system (i.e., Underground and Maximum Safety and Security [HI-STORM UMAX] Vertical Ventilated Module [VVM]).

1.4 PROJECT CHARACTERISTICS

1.4.1 Proposed Configuration

The Proposed Configuration, pictured in Figure 5, Proposed Configuration, would be located approximately 95 ft away from the existing seawall on the southern portion of the SONGS Site, 150 ft from the slopes surrounding the plant, and approximately 700 ft from the public access roadways.

Specifically, the Proposed Configuration would be located to the southwest of the existing ISFSI. By locating the project on the southwestern boundary of the Project Site, this places the proposed ISFSI further from the bluffs northwest of the property than the existing ISFSI. The new security building would be located on top of the existing rail spur, thus requiring a portion to be removed as part of project implementation. Under the Proposed Configuration, construction of the ISFSI can proceed while the new security building is being constructed. Once the Proposed Project is complete, the existing security buildings located in the southeastern corner of the Project Site would be removed.

As a result of excavation for project construction, the SONGS Site's existing surface drainage pattern will be slightly altered. An existing sump pump and concrete collection sump near the ISFSI footprint

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7 NRC, San Onofre Unit 1. Website: http://www.nrc.gov/info-finder/decommissioning/power-reactor/san-onofre-unit-1.html (accessed February 17, 2015).

will be relocated to the southwest corner of the NIA. The discharge point for the drainage will remain the same.

1.4.2 Proposed Technology

There are several ISFSI technologies, with the majority of designs consisting of aboveground structures with storage casks bolted to a thick concrete pad. The Proposed Project would differ from these structures in that it proposes to store spent nuclear fuel storage in an FSM designed by Holtec International. The HI-STORM UMAX VVM is an underground system designed to accommodate a series of interchangeable multi-purpose container (MPC) models (previously referred to as transport canisters). In either configuration (Proposed Configuration versus Alternative Configuration, described further below), the proposed HI-STORM UMAX VVM would be a 25,000 sf underground structure, approximately 111 ft wide by 211 ft long by 24.5 ft in vertical height, including a 3 foot thick concrete base pad. Although the HI-STORM UMAX system has been designed to be 24.5 ft in vertical height, the proposed ISFSI would be approximately 12.25 ft below the existing grade. In order to fully enclose the structure, as intended for the underground system, the portion of the structure above grade (approximately 12.25 feet) will be encased in a berm sloped from the top of the structure to the grade elevation at an approximate forty-five degree angle. As a result, no vertical wall of the concrete structure will be exposed. Figure 6, Project Elevations, provides an elevation of the Proposed Project.

The total ISFSI area footprint would be 32,000 sf including the concrete approach aprons. (The balance of the Proposed Project's 100,000 sq ft is comprised of the new security building, fencing and areas affected by grading.) These approach aprons are reinforced concrete pathways extending from the proposed ISFSI to the end of the nearest internal roadway to accommodate equipment during the transportation and loading of spent nuclear fuel into the ISFSI. The structure would house up to 80 steel-reinforced FSMs and would be placed adjacent to the existing aboveground concrete FSMs currently housing the spent fuel from Units 2 and 3. Construction of the Proposed Project will require excavation of approximately 14,800 cubic yards (cy) of material. This material would remain on-site and be repurposed for the peripheral berm surrounding the HI-STORM UMAX VVM. The as-built ISFSI would be situated approximately 32 ft amsl. Figure 7, Key Constituents of HI-STORM UMAX System, provides an illustration of the key constituents of a HI-STORM UMAX VVM.

The HI-STORM UMAX VVM is designed to allow for the storage of MPCs in a vertical configuration within a subterranean cylindrical cavity entirely below the top of grade (TOG) of the facility. Within the HI-STORM UMAX, each VVM stores one MPC and operates independently from any other VVM. The MPC Storage Cavity would be defined by a Cavity Enclosure Container (CEC), comprised of a Container Shell welded to a Base Plate. The top of the Container Shell is stiffened by a ring-shaped flange welded to the Container Shell. With the Closure Lid removed, the CEC is an open top, closed bottom, cylindrical vessel with no penetrations or openings. The MPC Bearing surfaces and the Divider Shell serves as the primary two internal parts within the CEC. The Divider Shell separates the CEC to allow the inflow and outflow of air around the MPC, which allows for adequate thermal performance of the system in the event that flood water were to stop air flow. The top of the MPC is laterally restrained by a set of radial guides attached to the Divider shell, which aids during the installation of the canister into the CEC and limit the lateral movement of the free-standing canisters during an earthquake. The CEC is surrounded by a Self-Hardening Engineered

Subgrade, such as controlled low-strength material (CLSM)[8] or lean concrete, which provides structural support to the ISFSI pad and protect the CEC from long-term environmental impacts. The HI-STORM UMAX is also equipped with a storage overpack that provides structural protection and radiation shielding for long-term storage of the MPCs and a transfer cask that provides structural and radiation shielding during loading, unloading, and transfer to the storage overpack.

The ISFSI pad, on which the VVM is located, would be comprised of reinforced concrete and configured to surround the external surface of the Container Shell. All exposed surfaces of the CEC would be stainless steel to minimize impacts associated with corrosion. The interior surfaces of the CECs and Divider Shells would be protected by a coating which inhibits corrosion, with the exception of one side of the Divider Shell, which is further protected by insulation. In addition, concrete also serves as a shielding material in the Closure Lid, which would also be completely encased in stainless steel.

1.5 ALTERNATIVES

SCE evaluated several alternatives to the Proposed Project including the “no project,” off-site locations, five locations on the SONGS Site, design, and configuration alternatives.

1.5.1 No Project Alternative

As part of the alternatives analysis SCE analyzed a “no project” alternative, which would maintain the current wet storage system at SONGS and would not allow for construction of the Proposed Project. No changes to the existing uses and conditions on the Project Site would occur as a result of the No Project Alternative and existing onsite uses would continue to exist without any changes. Although the existing wet storage system meets current NRC requirements related to nuclear safety, approval of the Proposed Project would provide a greater margin of safety related to seismic risks. In addition, the No Project Alternative would not meet the main objective of the Proposed Project to provide additional dry storage capacity to store spent fuel on the SONGS Site, which is necessary given that existing ISFSI at SONGS is nearly at full capacity.

1.5.2 Off-Site Location Alternatives

Storing the spent fuel offsite was determined to be infeasible due to significant legal and logistical challenges. Because the Proposed Project involves the transfer of spent fuel from the existing on-site spent fuel storage pool to a dry cask storage system, locating the Proposed Project outside of the SONGS Site would not be feasible due to the requirements of Section 10 of the Code of Federal Regulations (CFR), Part 72 - Licensing Requirements for the Independent Storage Of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor- Related Greater Than Class C Waste. Section 72.103 (b) states in part that “If an ISFSI … is located on a nuclear power plant (NPP) site, the existing geological and seismological design criteria for the NPP may be used. If the existing design criteria for the NPP is used and the site has multiple NPPs, then the criteria for the most recent NPP must be used.” This requirement results in siting a new location to be geologically and seismically evaluated and approved in the same manner as siting a new nuclear power plant.

[8] CSLM is a cementitious material generally comprised of water, cement, aggregate, and fly ash.

Locations on Camp Pendleton (including the so-called "Mesa" east of the I-5) are infeasible, as they are located outside the SONGS Part 50 licensed area. In addition, in order to utilize these locations, it would be necessary to acquire a grant of easement from the Navy and it is unknown whether the Navy would issue this grant of easement. The storage of the spent fuel at a federal repository is not feasible because such a repository does not exist. In addition, although spent fuel from the SONGS Site could be shipped to off-site reprocessing facilities or nuclear power plants, there are no available reprocessing facilities in the United States, and additional power plants in California do not have adequate storage to accept spent fuel from the SONGS facility. As such, it was determined that storing the spent fuel off-site would be infeasible. Although there are currently no offsite locations available, efforts are underway to site and license private interim storage facilities. SCE will continue to monitor the availability of these alternatives and will evaluate the feasibility of moving the spent fuel if other options become available.

1.5.3 On-Site Location Alternatives

As part of the project design process, identification of alternate spent fuel storage sites and haul/transportation paths was performed. The selection of on-site locations was primarily guided by the estimated size of the ISFSI including security requirements. The result was that SCE considered the aforementioned five locations on the existing SONGS site for further evaluation (i.e., the Reservoir, the NIA, the K Buildings, the MUD Area, and the South Yard).

A location rating process was performed similar to a Kepner-Tregoe process. Each site was evaluated against a weighted evaluation criterion. The weighting applied to each evaluation criterion was established and then each site was rated on how well it meets each criterion. As with the criteria weightings, each of the site ratings was established using a roundtable discussion process amongst experts in various subject matter areas. A "weighted score" is calculated by multiplying the criterion weighting by the site rating. The individual weighted scores were added and the site which best met the criterion received the highest score. The scores were then converted to rankings (i.e., the site with the highest score is ranked as "1"). The overall site ranking is a measure of the suitability of the sites relative to each other and is not a determination of the suitability of a particular site. Table A-1 provides the ranking of each site for a particular criterion and the final overall ranking. The NIA ranked higher than all viable sites by a significant margin. The NIA was ultimately selected as the Project Site over the other alternative locations for the following reasons: (1) the Project Site is currently developed with an ISFSI, which is a consistent and compatible land use with the Proposed Project; (2) the Project Site has adequate space to accommodate development of the Proposed Project; (3) the Project Site is located in close proximity (1,200 ft) to the existing storage pools and has adequate and proven roadway access between the site and the storage pool, thus allowing for the efficient transport of spent fuel from the pool to the proposed dry cask system; and (4) the Project Site is underlain with soils from the San Mateo Formation, which are considered more geologically stable than other soils on the SONGS site that are underlain by the Monterey Formation.[9]

[9] CCC Staff Report No. E-00-014, "Construction of SONGS Units 2 and 3 Temporary Spent Nuclear Fuel Storage Facility," October, 11, 2000.

Table A-1: Comparison of On-Site Location Alternatives

		NIA	Reservoir	K-Buildings	MUD Area	South Yard
	Criteria / Weighted Scoring	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**Site 5**
1	**Licensing, Permitting and Long Term Storage Considerations**	1	2	2	2	2
2	**Potential for DOE Reimbursement**	1	2	2	2	2
3	**Hazards at ISFSI Site**	1	2	3	1	1
4	**Avoid Natural or Man Made Events**	2	1	3	3	3
5	**Approximate Average Site Grade**	2	1	2	1	2
6	**Foundation Conditions**	1	4	2	3	4
7	**Conservation of Protected Natural Resources**	1	4	3	2	3
8	**Public Perception Impacts**	1	3	2	3	3
9	**Haul Path Transfer/Transport Distance and other Transfer/Transport Elements**	2	4	1	4	3
10	**Haul Path Buried Utilities Impact**	1	2	2	2	2
11	**Hazards Along Haul Path**	1	2	1	2	2
12	**Security Monitoring Impact**	1	3	2	3	3
13	**Vehicle Barrier System Impacts**	1	3	2	3	3
14	**Environmental Monitoring Program Impact**	1	3	2	3	3
15	**Decommissioning Operations**	2	1	4	3	4
16	**Maximize Shielding for Normal Operation**	1	2	1	2	2
17	**On-site Radiological Impact**	2	1	3	2	2
18	**Controlled Area Boundary**	1	2	1	2	2
19	**Site Preparation**	1	3	2	2	3
20	**Construction Access**	3	1	4	2	2
21	**Construction Impact**	3	1	4	2	2
22	**Availability of Electrical Power and Other Tie-ins**	1	4	2	2	3

	Overall Ranking	**1**	**2**	**4**	**3**	**5**

1.5.4 Alternative Technologies

As discussed above in Section 1.1., the NRC has sole jurisdiction over spent fuel handling and storage. Therefore, the discussion below regarding alternative ISFSI technologies is provided for informational purposes.

In addition to the proposed underground HI-STORM UMAX system, SCE considered two alternative technologies for the ISFSI. It should also be noted that while other dry cask storage technologies are currently being employed internationally, these technologies are not certified by the NRC and, therefore, were not considered as part of this alternatives analysis.

Horizontal (Enclosed) Storage System. The existing SONGS ISFSI dry-cask storage system certified under the NRC is designed as an open rectangular box located on a concrete pad with a prefabricated roof bolted onto the top of the module. This system stores the spent fuel canisters in an aboveground module with inlet air vents located on the ground floor and outlet air vents located near the roof. Spent fuel canisters within this module are located on a pair of rails that are supported by upright steel columns and are stored in a horizontal orientation. Canisters are installed in this module by aligning a hydraulic ram with the openings in the module and pushing the canisters over the rails, which are lubricated to reduce friction. Removing the canisters occurs in a reverse fashion, in which a hydraulic ram pulls the transfer cask from the module.

Vertical Storage System. Another design alternative involves the placement of storage casks in a vertical position on a large concrete pad. This system involves an MPC, which is a welded structure of cylindrical profile with flat ends. Spent fuel is stored within a honeycomb fuel basket that is enclosed by an MPC lid, drain port cover plates, and a closure ring. The MPC is then placed within a cylindrical concrete overpack with steel plates at each end. The overpack is designed to permit air circulation around and over the MPC shell, allowing for passive cooling. The MPC/overpack is then bolted to a concrete pad in a vertical position. This type of aboveground ISFSI system is currently employed at Diablo Canyon power plant. A very similar design, but below ground, ISFSI is employed at Humboldt Bay power plant.

Both systems are certified by the NRC and have proven successful in the storage of spent fuel. The proposed underground HI-STORM UMAX system (Proposed Technology) represents the next generation in spent fuel storage in terms of increased security, greater protection against coastal airborne salinity, reduced visual impacts, increased ventilation in a controlled environment, and increased protection against potential seismic activity.[10] The certification process for this technology will complete in April 2015. Therefore, SCE selected the HI-STORM UMAX system to accommodate the need for additional storage.

1.5.5 Alternative Configuration

In addition to the Proposed Configuration, SCE considered an Alternative Configuration. This alternative, pictured in Figure 8, Alternative Configuration, would be located approximately 180 ft away from the existing seawall on the southern portion of the proposed site, 450 ft from the slopes surrounding the plant and approximately 700 ft from the public access roadways. This alternative would be located adjacent to the southern boundary of the existing ISFSI. As such, this alternative

[10] Holtec International, *Final Safety Analysis Report on the HI-STORM UMAX Canister Storage System*, July 11, 2014.

would require the removal of the existing onsite security building prior to construction of the new ISFSI. The existing security building actively monitors both the Protected Area and the existing ISFSI and contains the access portal to the Protected Area. In order to construct the Alternative Configuration, a temporary security building capable of maintaining site security and Protected Area access without interruption would need to be constructed and be placed in service. This would allow the demolition of the existing security building and construction of the ISFSI expansion, new security building and isolation fencing. Security monitoring would then be transferred to the new security building and the temporary security building could be demolished once spent fuel is transferred to the ISFSI. The Alternative Configuration results in a significant increase in construction activities and expands the impacted area. It further results in significant challenges to maintaining security integrity and access to the Protected Area. In addition, there are no significant environmental benefits of the Alternative Configuration as compared to the Proposed Configuration. Consequently, the Alternative Configuration is not considered feasible and is removed from further consideration.

1.6 TRANSPORT AND LOADING

To transfer the fuel, the MPCs would be brought to the wet storage pools, located in the Protected Area approximately 1,200 ft east of the Project Site. The MPCs would be lowered into the pool, loaded with spent fuel assemblies, and then removed from the pool. Following their removal from the storage pool, the water would be drained from the MPCs, the air inside of them would be replaced with helium, and they would be welded shut. Subsequently, the MPCs would be loaded onto a transfer vehicle that would use an existing road on the power plant to move the MPCs to the Project Site. Once the MPCs have arrived at the Project Site, they would be loaded and stored in the HI-STORM UMAX VVM. Approximately six days are required to complete the transfer of one MPC from the storage pools to its final location within the HI-STORM UMAX VVM; however, more than one MPC system will be loading at any given time. The total duration of the fuel loading transfer effort is approximately 8.5 months. No roadway improvements would be required to facilitate the transfer of the spent fuel to the Project Site.

When another facility becomes available for spent fuel storage (e.g., a federal repository, federal interim storage site, or a private storage site) the MPCs to be stored in the proposed ISFSI would be removed from the underground enclosure and set up in transport casks for safe and efficient transport.

1.7 TRAFFIC, ACCESS, AND NOISE

Attachment B addresses specific environmental and land use issues raised in the California Coastal Act. However, potential traffic, access, and noise impacts are addressed below because these are additional issues evaluated by the CCC.

Access to the Project Site is provided via Old Pacific Coast Highway. The San Onofre State Beach provides the nearest access to coastal waters and recreation activities west and south of the project site. Public access to these beach areas is currently provided via well-developed paths and roads in close proximity to the western and southern SONGS boundaries. Further, there is an existing pedestrian pathway bordering the western and southwestern boundaries of the SONGS Site. As previously stated, the land on which the SONGS facility is located is subject to an easement granted to SCE from the Navy. As such, the NRC enforces strict security requirements prohibiting public access to the Project Site. Access to the Project Site is prohibited by a series of gates bordering the site and is regulated by a private security force maintained by SCE.

During project construction, there will be limited periods of time (12 to 16 hours) that could require the continuous placement of concrete, thereby resulting in truck trips to and from the Project Site during nighttime hours. In addition, the Proposed Project is anticipated to require an average number of 25 employees on the Project Site during project construction, with a peak number of 37 employees during more intensive construction phases. Trucks and employees traveling to and from the Project Site could result in potential delays along Old Pacific Coast Highway; however, these trips would occur during off-peak-hours (peak hours are from 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.), would be temporary in nature, and would cease upon construction completion. As such, the Proposed Project would not interfere with traffic and would not interfere with the ability of visitors to the area to access San Onofre State Beach. Therefore, the Proposed Project would not result in adverse impacts to traffic and public access (refer to Attachment B, Section 1.1.3, Public Access and Recreation, for further discussion related to the project's impacts related to public access and recreation).

Construction activities will generate noise, including delivery trucks. The Project Site is relatively isolated from residential sensitive receptors that may be affected by the Proposed Project's construction activities. The Project Site is located approximately 750 ft south of Old Coast Highway and 1,000 ft south of the I-5 Freeway. The pad elevation of the Project Site is approximately 75 ft below Old Pacific Coast Highway and the adjacent bluffs, and approximately 85 ft below the I-5 Freeway.

The closest sensitive receptors to the Project Site include San Onofre State Beach recreational users directly south of the construction site. Assuming several pieces of construction equipment would be operating at the same time, the worst-case combined intermittent noise level would be 90 dBA L_{max} at a distance of 50 ft.[11] Due to the approximately 15 ft high seawall along the southern border of the Project Site and 15 ft change in elevation between the Project Site and the potential beach users (noise sensitive receptors) it is anticipated construction noise will be attenuated by approximately 20 dBA on average, thereby reducing construction noise impacts to nearby sensitive receptors at San Onofre State Beach to approximately 70 dBA L_{max}. [12]

It is possible that some construction activities (e.g., continual concrete placement) will take place in the evening hours. In addition to the on-site construction activities, delivery trucks traveling on the I-5 Freeway will access the site off of the Basilone Road/I-5 Interchange. Any noise emanating from these delivery trucks (averaging approximately 87 dBA Lmax at a distance of 50 ft) will blend into the current ambient noise levels.

As such, potential noise impacts from the construction of the Proposed Project will be less than significant and will cease upon completion. Therefore, the Proposed Project would not result in significant adverse impacts affecting nearby sensitive receptors.

[11] A noise level at 50 ft was utilized for this analysis based on guidelines outlined in the 2006 Federal Highway Administration (FHWA) Highway Construction Noise Handbook. Noise levels at 50 ft are considered "source noise levels" and are used to establish a baseline to project noise levels at different distances beyond 50 ft.

[12] 70 dBA is considered a moderate noise level and is comparable to ambient noise generated by automobiles traveling along a highway.

1.8 PROJECT CONSTRUCTION

The Proposed Project is anticipated to be constructed in a single phase, with planning and engineering commencing in January 2015, and field work commencing in January 2016. Construction activities would continue for approximately 12 months (i.e., includes construction of the new security building, fencing, lighting, etc.), with 6 to 7 months needed for the construction of the ISFSI pad. The following Table A-2, Construction Schedule, provides an estimated optimal construction schedule.[13]

Table A-2: Construction Schedule

Construction Activities	Duration
Mobilization and Move-on	20 days
Site Preparation (i.e., building removal, etc.)	10 days
Grading, Excavation, and Material Placement	60 days
Base Concrete Pad Placement	40 days
MPC Storage Cavities	20 days
CLSM Fill between Cavities	20 days
Top Pad Placement	35 days

Note: Construction activities are generally sequential.

In addition, as illustrated by Figure 9, Structures to Be Removed, project construction would involve the removal of several on-site structures, most of which include temporary facilities currently storing non-radioactive remnants from Unit 1. Project construction would also include utility extensions to existing water, sewer, electric, and telephone lines to accommodate operational activities at the proposed security building.

[13] For purposes of calculating air quality impacts, a “worst case” scenario of a 12-month construction schedule was utilized.