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TS 3.3.7, "Diesel Generator (DG) – Undervoltage Start," specifies the loss of voltage start (LOVS) instrumentation functions be operable in MODES 1, 2, 3, 4, and when the associated DG is required to be operable by LCO 3.8.2, AC Sources – Shutdown. TS 3.3.7 is proposed for deletion by the licensee.

TS 3.3.7 provides the LCO and SRs to ensure availability of backup safety-related alternating current (AC) power to the SSCs used to prevent or mitigate postulated accidents resulting in an uncontrolled release of radioactivity of DBAs as analyzed in the SONGS Unit 2 and 3 UFSARs. This TS LCO ensures the operability of instrumentation designed to detect an undervoltage on the safety-related AC electrical busses upon a loss of offsite power and start the emergency diesel generators (EDGs) to supply backup power to the AC busses. Since SONGS Units 2 and 3 are permanently shut down and defueled, SCE has analyzed the remaining DBAs at SONGS Units 2 and 3, and given the significant fuel decay period, found that the radiological consequences will not exceed the EPA's PAGs at the site boundary. The licensee's analysis also demonstrates that the dose consequences, within the CR, of any DBAs are acceptable without relying on SSCs remaining functional for accident mitigation except the passive fuel storage pool structure which will be maintained as a TS for SONGS.) SCE calculated the DBA radiological consequences assuming no credit for control room isolation or recirculation filtration and no credit for any accident mitigation by the auxiliary building ventilation system. Calculated doses at the EAB, LPZ, and CR are within 10 CFR 50.67 and RG 1.183 dose limits. Since the bounding accident analysis for the permanently defueled condition assumed no credit for control room post-accident recirculation system emergency ventilation or filtration for mitigation of radiological releases, the CREACUS is not required (see evaluation of TS 3.7.11 in Section 3.7.13 of this SE). Because CREACUS is not required to function to mitigate a DBA, backup electrical power required to support operation of CREACUS upon a loss of offsite power is unnecessary. Therefore the EDG loss of offsite power start instrumentation is also unnecessary for all postulated DBAs.

The NRC staff determined in Section 3.1 through 3.6 of this SE that with SONGS Units 2 and 3 permanently shut down and defueled and the irradiated fuel having decayed for a significant period, CREACUS is no longer needed or credited in the primary success path of a safety sequence analysis related the remaining DBAs at SONGS Units 2 and 3. Consequently, neither primary nor backup power to support operation of CREACUS is needed. Therefore, actuation instrumentation to start the backup power EDGs is no longer required to satisfy TS Criterion 3 for inclusion in TSs as a support or actuation system that is necessary for items in the primary success path to successfully function. The NRC staff has confirmed that there are no other DBAs analyzed in the SONGS Units 2 and 3 UFSAR that rely on this instrumentation system. Based on the above, the NRC staff finds that the licensee's proposed change to delete TS 3.3.7 is acceptable.

TS 3.3.8, "Containment Purge Isolation Signal (CPIS)," specifies the requirements for instrumentation designed to close the containment purge isolation valves upon a detection of high gaseous radiation in containment. This action isolates the containment atmosphere from the environment to minimize releases of radioactivity in the event of an accident. TS 3.3.8 is applicable in MODES 1, 2, 3, and 4, during core alterations, and during movement of fuel assemblies within containment. TS 3.3.8 is proposed for deletion by the licensee.

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This TS indicates MODES for which the TS is applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for permanently shutdown and defueled reactors, such as SONGS Unit 2 and Unit 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply. The staff also reviewed the non-MODE dependent applicability during core alterations, and during movement of fuel assemblies in containment. Because 10 CFR 50.82(a)(2) prohibits operation of the plant or placing fuel in the reactor vessel, the prohibition on placing fuel in the reactor vessel, it also precludes core alterations and the movement of fuel assemblies within containment.

The NRC staff also evaluated the proposed deletion of TS 3.3.8, to ensure that the LCO no longer satisfies the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff has determined that TS 3.3.8 only addresses specific plant systems, control of process variables, design features, or operating restrictions associated with the containment and are no longer needed or credited in the primary success path of a safety sequence analysis related the remaining DBAs at SONGS Units 2 and 3. Based on the above, the NRC staff finds that the licensee's proposed change to delete TS 3.3.8 is acceptable.

TS 3.3.9, "Control Room Isolation Signal (CRIS)," specifies the requirements to ensure instrumentation (actuation logic, manual trip, and gaseous radiation monitors) necessary to initiate CREACUS is operable. The CRIS terminates the normal supply of outside air to the CR and initiates actuation of the CREACUS to minimize operator radiation exposure. The radiation monitor actuation of the CREACUS in MODES 5 and 6 and during movement of fuel assemblies is the primary means to ensure control room habitability in the event of an FHA. TS 3.3.9 is applicable in MODES 1, 2, 3, 4, 5, 6, and during movement of fuel assemblies within containment and in the fuel storage pool. TS 3.3.9 is proposed for deletion by the licensee.

This TS indicates MODES for which the TS is applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for permanently shutdown and defueled reactors, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply.

The NRC staff evaluated the proposed deletion of TS 3.3.9 to ensure that the LCO no longer satisfies the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The NRC staff also reviewed the non-MODE dependent applicability during movement of fuel assemblies within containment and in the fuel storage pool. As detailed in Sections 3.1 through 3.6 of this SE, the remaining accident analyses applicable to the permanently shutdown and defueled reactors of SONGS Units 2 and 3 show that the dose

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consequences within the control room are acceptable. Furthermore, the analyses do not rely on the functioning of any SSCs to mitigate the postulated DBAs with the exception of the passive fuel storage pool structure.

The NRC staff evaluated the remaining DBAs that credited the CREACUS, and its support systems, that were previously relied upon to mitigate the CR, EAB or LPZ dose consequences during reactor operation. This includes the FHIS, the FHB PACU filtration system, and the CRIS. As discussed in the basis for deleting CREACUS TS 3.7.11, (see Section 3.7.13 of this SE), the CRIS is no longer required for providing airborne radiological protection for the control room operators in the event of a DBA. Since TS 3.3.9 exists solely to support CREACUS Operability, the elimination of the need for the CREACUS also obviates the need for its support systems. The deletion of the CREACUS TS 3.7.11 eliminates the need for the CRIS TS 3.3.9. Therefore, the NRC staff finds the CRIS isolation signal is no longer required and that the licensee's proposed change to delete TS 3.3.9 is acceptable.

### 3.7.10 Section 3.4, Reactor Coolant System

The RCS TSs of Section 3.4, "Reactor Coolant System (RCS)," for SONGS Units 2 and 3 contain the LCOs, Actions, and SRs that provides for appropriate control of process variables, design features, or operating restrictions needed for appropriate functional capability of RCS equipment required for safe operation of the facility. The following TSs are being proposed for deletion.

TS 3.4.1, "RCS DNB [Departure from Nucleate Boiling] (Pressure, Temperature, and Flow) Limits," specifies the process variables requirements for maintaining RCS pressure, temperature, and flow rate within limits assumed in the safety analyses. The limits placed on RCS pressure, temperature, and flow rate ensure that the minimum DNBR will be met for each of the analyzed transients. TS 3.4.1 is applicable in MODE 1.

TS 3.4.2, "RCS Minimum Temperature for Criticality," specifies the requirements for RCS loop cold leg temperature ( $T_c$ ) before the reactor can be made critical and while the reactor is critical. Compliance with the LCO ensures that the reactor will not be made or maintained critical ( $k_{eff} > 1.0$ ) outside a temperature operating range of 522 °F to 558 °F, and to prevent operation in an unanalyzed condition. TS 3.4.2 is applicable in "MODE 1, THERMAL POWER  $\leq$  30% RTP and  $T_c < 535$  °F, and in MODE 2,  $k_{eff} \geq 1.0$  and  $T_c < 535$  °F."

TS 3.4.3, "RCS Pressure and Temperature (P/T) Limits," specifies that the RCS pressure, RCS temperature and RCS heatup and cooldown rates shall be maintained within the limits as specified in the Pressure - Temperature Limits Report (PTLR). The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the RCPB. TS 3.4.3 is applicable at all times. The purpose for TS LCO 3.4.3 during normal operation of the RCS is to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause nonductile failure of the RCPB, an unanalyzed condition. The RCS P/T limits in LCO 3.4.3 provide a definition of acceptable operation for prevention of nonductile failure in accordance with 10 CFR Part 50, Appendix G. Although the P/T limits were developed to provide guidance for operation during heatup, or

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cooldown, or inservice leak and hydrostatic testing, the applicability of these limits is at all times in keeping with the concern for nonductile failure.

TS 3.4.3.1, "Pressurizer Heatup and Cooldown Limits," requires that the pressurizer heatup and cooldown rates shall be maintained within the specified limits. The pressurizer is designed to withstand the effects of cyclic loads due to system temperature and pressure changes. These cyclic loads are introduced by normal load transients, reactor trips, and startup and shutdown operations. During startup and shutdown, the rates of temperature and pressure changes are limited so that the maximum specified heatup and cooldown rates are consistent with the design assumptions and satisfy the stress limits for cyclic operation. Therefore, TS 3.4.3.1 is applicable at all times.

TS 3.4.4, "RCS Loops - MODES 1 and 2," specifies the requirements to ensure heat removal capability of the RCS loops with the reactor in MODES 1 and 2. The primary function of the RCS is removal of the heat generated in the fuel due to the fission process, and transfer of this heat, via the steam generators (SGs), to the secondary plant. The important aspect for this LCO is the reactor coolant forced flow rate, which is represented by the number of RCS loops in service. TS 3.4.4 is applicable in MODES 1 and 2.

TS 3.4.5, "RCS Loops - MODE 3," specifies the requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 3. In MODE 3, the primary function of the reactor coolant is removal of decay heat and transfer of this heat, via the SGs, to the secondary plant fluid. TS 3.4.5 is applicable in MODE 3.

TS 3.4.6, "RCS Loops - MODE 4," specifies the requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 4. In MODE 4, the primary function of the reactor coolant is the removal of decay heat and the transfer of this heat to the SGs or shutdown cooling (SDC) heat exchangers. TS 3.4.6 is applicable in MODE 4.

TS 3.4.7, "RCS Loops - MODE 5, Loops Filled," specifies the requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 5 with the RCS loops filled with coolant. In MODE 5 with the RCS loops filled, the primary function of the reactor coolant is the removal of decay heat and transfer of this heat to the SGs or SDC heat exchangers. While the principal means for decay heat removal is via the SDC heat exchangers, the SGs are specified as a backup means for redundancy. TS 3.4.7 is applicable in MODE 5 with the RCS loops filled.

TS 3.4.8, "RCS Loops - MODE 5, Loops Not Filled," specifies the requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 5 with the RCS loops not filled with reactor coolant. In MODE 5 with the RCS loops not filled, the primary function of the reactor coolant is the removal of decay heat and transfer of this heat to the SDC heat exchangers. The SGs are not available as a heat sink when the loops are not filled. TS 3.4.8 is applicable in MODE 5 with the RCS loops not filled.

TS 3.4.9, "Pressurizer," specifies the OPERABILITY requirements for the RCS pressurizer. The pressurizer provides a point in the RCS where liquid and vapor are maintained in equilibrium



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under saturated conditions for pressure control purposes to prevent bulk boiling in the remainder of the RCS. In MODES 1, 2, and 3, the LCO requirement for a steam bubble is reflected implicitly in the accident analyses. All analyses performed from a critical reactor condition assume the existence of a steam bubble and saturated conditions in the pressurizer. TS 3.4.9 is applicable in MODES 1, 2, and 3.

TS 3.4.10, "Pressurizer Safety Valves," specifies the OPERABILITY and lift setpoint parameters for the pressurizer safety valves. The pressurizer safety valves provide, in conjunction with the reactor protection system, overpressure protection for the RCS. The pressurizer safety valves are designed to prevent the RCS from exceeding the system safety limit of 2750 pounds per square inch absolute (psia) in MODES 1, 2, and 3. In MODES 4, 5, and MODE 6 with the reactor vessel head on, overpressure protection is provided by operating procedures and by meeting the requirements of LCO 3.4.12, Low Temperature Overpressure Protection (LTOP) System. TS 3.4.10 is applicable in MODES 1, 2, and 3.

TS 3.4.12.1, "Low Temperature Overpressure Protection (LTOP) System, RCS Temperature  $\leq$  PTLR Limit," specifies the requirements for controlling RCS pressure at low temperatures so the integrity of the RCPB is not compromised by violating the P/T limits of 10 CFR Part 50, Appendix G. TS LCO 3.4.12.1 provides RCS overpressure protection by minimizing coolant input capability and having adequate pressure relief capacity. In MODES 1, 2, and 3, the pressurizer safety valves will prevent RCS pressure from exceeding limits. In MODE 4 when the temperature of any RCS cold leg is less than or equal to the enable temperature specified in the PTLR, MODE 5, and MODE 6 when the reactor vessel head is on and the RCS is not vented, overpressure prevention falls to the OPERABLE SDC system relief valve or to a depressurized RCS and a sufficient sized RCS vent. When the reactor vessel head is off, overpressurization cannot occur.

TS 3.4.12.2, "Low Temperature Overpressure Protection (LTOP) System, RCS Temperature  $\geq$  PTLR Limit," specifies requirements for controlling RCS pressure at low temperatures so the integrity of the RCPB is not compromised by violating the P/T limits of 10 CFR Part 50, Appendix G. TS LCO 3.4.12.2 provides RCS overpressure protection by having adequate pressure relief capacity. In MODES 1, 2, and 3 the pressurizer safety valves will prevent RCS pressure from exceeding limits. In MODE 4 when the temperature of all RCS cold legs are greater than the enable temperature specified in the PTLR, overpressure prevention falls to the OPERABLE SDC system relief valve or to an OPERABLE pressurizer code safety valve.

TS 3.4.13, "RCS Operational LEAKAGE," specifies the process variable limits and operating restrictions for RCS pressure boundary leakage, unidentified RCS leakage, identified RCS leakage, and primary to secondary leakage. RCS leakage is indicative of material deterioration, possibly of the RCS pressure boundary, which can affect the probability of a design basis event. The primary to secondary leakage limit is based on operating experience with SG tube degradation mechanisms that result in tube leakage. The operational leakage rate criterion in conjunction with the implementation of the Steam Generator Program is an effective measure for minimizing the frequency of steam generator tube ruptures (SGTRs). TS 3.4.13 is applicable in MODES 1, 2, 3, and 4. In MODES 5 and 6, leakage limits are not required because the

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reactor coolant pressure is far lower, resulting in lower stresses and reduced potential for leakage.

TS 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," specifies the process variable limits and operating restrictions for RCS PIV leakage. The regulations in 10 CFR 50.2, 10 CFR 50.55a(c), and 10 CFR Part 50, Appendix A, GDC 55, discuss RCPB valves, which are normally closed valves in series within the RCPB that separate the high pressure RCS from an attached low pressure system. Although this specification provides a limit on allowable PIV leakage rate, its main purpose is to prevent overpressure failure of the low pressure portions of connecting systems (intersystem LOCA). PIVs are provided to isolate the RCS from the following typically connected systems: SDC system; safety injection system; and the chemical and volume control system. The leakage limit is an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. TS 3.4.14 is applicable in MODES 1, 2, 3, and 4. In MODES 5 and 6, leakage limits are not provided because the lower reactor coolant pressure results in a reduced potential for PIV leakage outside the containment.

TS 3.4.15, "RCS Leakage Detection Instrumentation," specifies the OPERABILITY requirements for RCS leakage detection instrumentation. Leakage detection systems are provided to detect significant RCPB degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Thus, they provide an early indication or warning signal to permit proper evaluation of RCS leakage into the containment area. TS LCO 3.4.15 requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition, when RCS leakage indicates possible RCPB degradation. TS 3.4.15 is applicable in MODES 1, 2, 3, and 4.

TS 3.4.16, "RCS Specific Activity," specifies the process variable limits and operating restrictions for Dose Equivalent 1-131 and gross specific activity. The TS LCO limits on the specific activity of the reactor coolant ensure that the resulting offsite doses meet the appropriate RG 1.183 acceptance criteria following a SGTR accident. TS 3.4.16 is applicable in MODES 1, 2, and MODE 3 with RCS average temperature  $\geq 500$  degrees F.

TS 3.4.17, "Steam Generator (SG) Tube Integrity," specifies the requirements to ensure the RCPB integrity function of the SG. The SGTR accident is the limiting design basis event for SG tubes and avoiding an SGTR is the basis for this specification. TS 3.4.17 is applicable in MODES 1, 2, 3, and 4.

The licensee proposed to delete all of Section 3.4 of the SONGS Units 2 and 3, RCS TSs, since all except TS 3.4.3, are only applicable to operating reactor MODES and do not apply to a permanently shutdown and defueled reactor. The NRC staff has reviewed these proposed changes and has determined that these TSs are only needed to provide the LCOs and SRs necessary to maintain functionality and integrity of the RCS pressure boundary. These TSs contain requirements for various RCS parameters such as: thermal limitations for heatup and cooldown rates during plant operation in order to operate within the analyzed requirements for stress intensity and fatigue limits for the reactor vessel; pressurization, which established and maintained an equilibrium under saturated conditions for pressure control to prevent bulk boiling

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in the remainder of the RCS; coolant chemistry, which included limits on RCS activity to limit potential offsite doses due to postulated events and limits on RCS conductivity, chlorides, and pH to prevent stress-corrosion cracking; coolant leakage, which established primary system leakage limits to allow prompt identification and isolation of leaks before the integrity of the RCS pressure boundary was impaired; safety and relief valves, which specifies operability requirements for the safety and relief valves designed to prevent overpressurization of, and damage to, the primary system boundary; and structural integrity, which addresses the inservice inspection requirements of the primary system boundary components. All of these TSs are related to assuring the integrity of the RCS pressure boundary. The RCS TSs are only important for a reactor authorized to operate or retain irradiated fuel in the reactor vessel. However, because 10 CFR 50.82(a)(2) prohibits the licensee from operating the reactors or placing fuel in the reactor vessels at SONGS Units 2 and 3, the RCS is no longer functional or used in any capacity.

Regarding the applicability of TS 3.4.3 and TS 3.4.3.1 at all times, the NRC staff notes that the RCS and pressurizer are drained and vented, to the extent possible, and consequently there is no longer any concern about exceeding the RCS and pressurizer P/T or cyclic limits. The requirements of 10 CFR Part 50, Appendix G, no longer apply to a permanently shutdown and defueled reactor because the RCPB will no longer be used as a fission product barrier. Therefore, TS 3.4.3 is no longer needed and may be deleted. Similarly, operating the unit within the fatigue analysis performed in accordance with the ASME Code Section III requirements no longer applies. Therefore, TS 3.4.3.1 is no longer needed and may also be deleted.

The NRC staff has also reviewed the RCS TSs proposed for deletion (TS 3.4.1, TS 3.4.2, TS 3.4.3, TS 3.4.3.1, TS 3.4.4, TS 3.4.5, TS 3.4.6, TS 3.4.7, TS 3.4.8, TS 3.4.9, TS 3.4.10, TS 3.4.12.1, TS 3.4.12.2, TS 3.4.13, TS 3.4.14, TS 3.4.15, TS 3.4.16, and TS 3.4.17), to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this SE. The staff notes that these TSs indicate MODES for which these TSs are applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for a permanently shutdown and defueled reactor, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2) for SONGS Units 2 and 3, it is prohibited from operating the reactors or placing fuel in the reactor vessels and, therefore, SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply. Furthermore, because irradiated fuel has been permanently removed from the reactor pressure vessels, the RCS is no longer relevant as a fission product barrier.

Therefore, the NRC staff finds that the licensee's proposed change to delete TS Section 3.4, Reactor Coolant System, is acceptable.

### 3.7.11 Section 3.5, Emergency Core Cooling Systems (ECCS)

Section 3.5 of the SONGS Units 2 and 3 TSs, "Emergency Core Cooling Systems (ECCS)," contains LCOs that provide for appropriate functional capability of ECCS equipment required for

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mitigation of DBAs or transients so as to protect the integrity of a fission product barrier. The following TSs are being proposed for deletion.

TS 3.5.1, "Safety Injection Tanks (SITs)," specifies the requirements for the SITs to ensure they are capable of supplying water to the reactor vessel during the blowdown phase of a LOCA, to provide inventory to help accomplish the refill phase that follows thereafter, and to provide RCS makeup for a small-break LOCA. TS 3.5.1 is applicable in MODES 1 and 2, and in MODE 3 with pressurizer pressure  $\geq 715$  psia.

TS 3.5.2, "ECCS - Operating," specifies the requirements for the ECCS trains so as to provide core cooling and negative reactivity to ensure that the reactor core is protected after a LOCA, CEA ejection accident, loss of secondary coolant accident (including uncontrolled steam release), and SGTR. The ECCS consists of the high pressure safety injection (HPSI) and the low pressure safety injection (LPSI) subsystems. TS 3.5.2 is applicable in MODES 1 and 2, and MODE 3 with pressurizer pressure  $\geq 400$  psia.

TS 3.5.3, "ECCS - Shutdown," specifies the requirements for ECCS with the reactor in MODE 3 with pressurizer pressure  $< 400$  psia, and in MODE 4. In these MODES, an ECCS train is composed of a single HPSI subsystem. One OPERABLE ECCS train is acceptable without a single failure consideration, based on the stable reactivity condition of the reactor and the limited core cooling requirements.

TS 3.5.4, "Refueling Water Storage Tank (RWST)," specifies the requirements for RWST OPERABILITY. During accident conditions, the RWST provides a source of borated water to the ECCS and containment spray system pumps. As such, it provides containment cooling and depressurization, core cooling, and replacement inventory and is a source of negative reactivity for reactor shutdown. TS 3.5.4 is applicable in MODES 1, 2, 3, and 4 because RWST OPERABILITY requirements are dictated by ECCS and containment spray system OPERABILITY requirements. Since both the ECCS and the containment spray system must be OPERABLE in MODES 1, 2, 3, and 4, the RWST must also be OPERABLE to support their operation.

TS 3.5.5, "Trisodium Phosphate (TSP) Dodecahydrate," specifies the requirements for TSP crystals to be placed in baskets on the floor of the containment building to ensure that iodine, which may be dissolved in the recirculated reactor cooling water following a LOCA, remains in solution. TSP also helps inhibit stress corrosion cracking (SCC) of austenitic stainless steel components in containment during the recirculation phase following an accident. TS 3.5.5 is applicable in MODES 1, 2, and 3, when the RCS is at elevated temperature and pressure, providing an energy potential for a LOCA.

The NRC staff has reviewed the proposed changes to the ECCS TSs and has determined that these TSs are only needed to provide the LCOs and SRs necessary to maintain functionality of the systems that provide emergency cooling to the reactor core and assure the appropriate functional capability ECCS required for mitigation of DBAs when the reactor is in MODES 1 through 4. These TSs includes multiple LCOs addressing the SITs, HPSI and LPSI subsystems; part of the ECCS, designed to provide adequate emergency cooling capability to



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the reactor in the event of a LOCA; the RWST, designed to supply borated water to the ECCS during accident conditions; and the TSP baskets to help retain iodine in solution. All of these TSs are related to provide cooling for a reactor vessel core. Since SONGS Units 2 and 3 are permanently shut down and defueled, there are no accidents of any kind that would require emergency core cooling and the accidents that these systems and components were designed to mitigate are no longer possible.

The NRC staff also reviewed the ECCS TSs proposed for deletion (TS 3.5.1, TS 3.5.2, TS 3.5.3, TS 3.5.4, and TS 3.5.5), to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff notes that these TSs indicate MODES for which the TSs are applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for a permanently shutdown and defueled reactor, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels, and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply.

Therefore, the NRC staff finds that the licensee's proposed change to delete TS Section 3.5, Emergency Core Cooling Systems, is acceptable.

#### 3.7.12 Section 3.6, Containment Systems

Section 3.6 of SONGS Units 2 and 3 TSs, "Containment Systems," contains the LCOs, Actions, and SRs that provide for appropriate control of process variables, design features, or operating restrictions required to protect the integrity of the containment as a fission product barrier; and appropriate functional capability of ESF equipment required for mitigation of DBAs or transients so as to protect the integrity of containment. The following TSs are being proposed for deletion from this section.

TS 3.6.1, "Containment," specifies the requirements for the containment to ensure it is capable of withstanding the pressures and temperatures of the limiting DBA without exceeding the design leakage rate. The containment steel liner and its penetrations establish the leakage limiting boundary of the containment. This TS provides the operating restrictions required to protect the integrity of the containment as a fission product barrier and limits the leakage of fission product radioactivity from the containment to the environment. TS 3.6.1 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.2, "Containment Air Locks," specifies the requirements for the structural integrity and leak tightness of the containment air locks. As part of the containment pressure boundary, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each containment air lock's structural integrity and leak tightness is essential to the successful mitigation of such an event. TS 3.6.2 is applicable in MODES 1, 2, 3, and 4.

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TS 3.6.3, "Containment Isolation Valves," specifies the requirements for the isolation capability of the containment via the containment isolation valves. Containment isolation valves form a part of the containment boundary and their OPERABILITY supports leak tightness of the containment. TS 3.6.3 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.4, "Containment Pressure," specifies the limitations on internal containment pressure. Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. Maintaining containment pressure at less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the maximum allowed containment internal pressure. Maintaining containment pressure at greater than or equal to the LCO lower pressure limit ensures that the containment will not exceed the design negative differential pressure following the accidental actuation of the Containment Spray System. TS 3.6.4 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.5, "Containment Air Temperature," specifies the limitations on containment average air temperature. Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that required safety-related equipment will continue to perform its function. TS 3.6.5 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.6.1, "Containment Spray and Cooling Systems," specifies the operability requirements for containment atmosphere cooling to limit post-accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a DBA, to within limits. The containment spray system consists of two separate trains. Each train includes a containment spray pump, spray headers, valves and piping. The RWST supplies borated water to the containment spray system during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWST to the containment sump. Two trains of containment cooling, each of sufficient capacity to supply 50 percent of the design cooling requirement, are provided. Two trains with two fan units each are supplied with cooling water from the component cooling water system. All four fans are required to furnish the design cooling capacity. Air is drawn into the coolers through the fans and discharged to the SG compartments and pressurizer compartment. TS 3.6.6.1 is applicable in MODES 1, 2, and 3.

TS 3.6.6.2, "Containment Cooling Systems," specifies the operability requirements for containment atmosphere cooling to limit post-accident pressure and temperature in containment to less than the design values. Reduction of containment pressure reduces the release of fission product radioactivity from containment to the environment, in the event of a DBA, to within limits. Two trains of containment cooling, each of sufficient capacity to supply 50 percent of the design cooling requirement, are provided. Two trains with two fan units each are supplied with cooling water from the component cooling water system. All four fans are required to

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furnish the design cooling capacity. Air is drawn into the coolers through the fans and discharged to the SG compartments and pressurizer compartment. TS 3.6.6.2 is applicable in MODE 4, when a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment cooling trains.

TS 3.6.8, "Containment Dome Air Circulators," specifies the requirements for the containment dome air circulators to reduce the potential for breach of the containment due to a hydrogen oxygen reaction. The dome air circulators accelerate the air mixing process between the upper dome space of the containment atmosphere during LOCA operations. They also prevent any hot spot air pockets during the containment cooling mode and avoid any hydrogen concentration in pocket areas. Two dome air circulator trains are required to be operable. Each train consists of two fans with their own motors and controls and is automatically initiated by a containment cooling actuation signal (CCAS). While each train has two fans, only one operable fan is required for the train to be operable, since each fan can provide the necessary flow rate to adequately mix the containment atmosphere. TS 3.6.8 is applicable in MODES 1 and 2.

The NRC staff has reviewed the licensee's proposed changes for Section 3.6 of the SONGS Units 2 and 3 TSs and has determined that the TSs are only needed to provide the LCOs and SRs necessary to maintain functionality of the containment. These TSs include multiple LCOs addressing containment integrity, which includes: containment pressure, containment air temperature, and containment air locks, which forms part of the containment pressure boundary; and containment isolation valves, designed to isolate the containment in the event of a LOCA to prevent the release of fission products to the atmosphere; containment spray and cooling, which limit post-accident pressure and temperature in containment; and dome air circulators that help reduce the potential hydrogen concentration pockets in containment following a design basis accident. All of these TSs are related to assuring the integrity of the containment as a fission product boundary. The containment TSs are only important for a reactor authorized to operate or retain irradiated fuel in the reactor vessel. However, because 10 CFR 50.82(a)(2) prohibits the licensee from operating the reactors or placing fuel in the reactor vessels at SONGS Units 2 and 3, the containment SSCs are no longer functional or used in any capacity and the associated TSs are no longer meaningful.

The NRC staff also reviewed the containment TSs proposed for deletion (TS 3.6.1, TS 3.6.2, TS 3.6.3, TS 3.6.4, TS 3.6.5, TS 3.6.6.1, TS 3.6.6.2, and TS 3.6.8), to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff notes that these TSs indicate MODES for which the TSs are applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for a permanently shutdown and defueled reactor, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels, and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply.

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Therefore, the NRC staff finds that the licensee's proposed change to delete TS Section 3.6, Containment Systems, is acceptable.

#### 3.7.13 Section 3.7, Plant Systems

Section 3.7 of the SONGS Units 2 and 3 TSs, "Plant Systems," contains the LCOs, Actions, and SRs that provide for appropriate functional capability of balance-of-plant equipment required for safe operation of the facility. This section contains operability requirements related to the steam generators, feedwater system, cooling water, ventilation, and spent fuel storage.

The licensee proposed deletion of the following LCOs in Section 3.7 of the SONGS Units 2 and 3 TSs:

TS 3.7.1, "Main Steam Safety Valves (MSSVs)," specifies the requirements for the MSSVs to ensure they are capable of providing overpressure protection for the secondary system. The MSSVs also provide protection against overpressurizing the RCPB by providing a heat sink for the removal of energy from the RCS, if the preferred heat sink provided by the condenser and circulating water system, is not available. TS 3.7.1 is applicable in MODES 1, 2, and 3.

TS 3.7.2, "Main Steam Isolation Valves (MSIVs)," specifies the requirements for the MSIVs to ensure that they are capable of isolating steam flow from the secondary side of the SGs following a high energy line break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generator. One MSIV is located in each main steam line outside, but close to, containment. The MSIVs are downstream from the MSSVs, atmospheric dump valves, and auxiliary feedwater pump turbine steam supplies to prevent them from being isolated from the SGs by MSIV closure. Closing the MSIVs isolates each SG from the other, and isolates the turbine, steam bypass system, and other auxiliary steam supplies from the steam generators. TS 3.7.2 is applicable in MODES 1, 2, and 3 except when all MSIVs are closed and deactivated.

TS 3.7.3, "Main Feedwater Isolation Valves (MFIVs)," specifies the requirements for MFIVs. The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a HELB. Closure of the MFIVs terminates flow to the steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream of the MFIVs will be mitigated by their closure. Closure of the MFIVs effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FWLBs inside containment, and reducing the cooldown effects for SLBs. TS 3.7.3 is applicable in MODES 1, 2, and 3 except when MFIV is closed and deactivated.

TS 3.7.4, "Atmospheric Dump Valves (ADVs)," specifies the requirements for providing a method for cooling the unit to shutdown cooling system entry conditions, should the preferred heat sink via the steam bypass system to the condenser not be available. This is done in conjunction with the auxiliary feedwater (AFW) system providing cooling water from the condensate storage tank (CST). TS 3.7.4 is applicable in MODES 1, 2, and 3, and in MODE 4 when steam generator is relied upon for heat removal.



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TS 3.7.5, "Auxiliary Feedwater (AFW) System," specifies the requirements to ensure that the AFW system automatically supplies feedwater to the steam generators to remove decay heat from the RCS upon the loss of normal feedwater supply. TS 3.7.5 is applicable in MODES 1, 2, and 3, and in MODE 4 when steam generator is relied upon for heat removal.

TS 3.7.6, "Condensate Storage Tank (CST T-121 and T-120)," specifies the requirements to ensure a safety grade source of water to the SGs for removing decay and sensible heat from the RCS. The CSTs provide a passive flow of water, by gravity, to the AFW System. TS 3.7.6 is applicable in MODES 1, 2, and 3, and in MODE 4 when steam generator is relied upon for heat removal.

TS 3.7.7, "Component Cooling Water (CCW) System," specifies the requirements to ensure that the CCW system provides a heat sink for the removal of process and operating heat from safety-related components during a DBA or transient. During normal operation, the CCW system also provides this function for various nonessential components. The CCW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the salt water cooling system, and thus to the environment. TS 3.7.7 is applicable in MODES 1, 2, 3, and 4.

TS 3.7.7.1, "Component Cooling Water (CCW) Safety Related Makeup System," specifies the requirements to ensure a safety-related CCW makeup system is available to maintain the water inventory in the CCW trains during a 7-day post-accident period. The safety-related makeup system is designed to supply water to the CCW trains following loss of normal CCW makeup from the nuclear service water system. For this purpose, sufficient water inventory is contained in the single primary plant makeup (PPMU) storage tank for both CCW trains. From the PPMU tank, water is transferred to the CCW return heads by two safety-related pumps. TS 3.7.7.1 is applicable in MODES 1, 2, 3, and 4.

TS 3.7.8, "Salt Water Cooling (SWC) System," specifies the requirements to ensure that the SWC system provides a heat sink for the removal of process and operating heat from safety-related components during a DBA or transient. During normal operation, and a normal shutdown, the SWC system also provides this function for various safety-related and nonsafety-related components. The safety-related function is covered by TS 3.7.8. TS 3.7.8 is applicable in MODES 1, 2, 3, and 4.

TS 3.7.10, "Emergency Chilled Water (ECW)," specifies the requirements to ensure that the ECW system provides a heat sink for the removal of process and operating heat from selected safety-related air handling systems during a DBA or transient. The design basis of the ECW system is to remove the post-accident heat load from ESF spaces following a DBA coincident with a loss of offsite power. Each train provides chilled water to the HVAC units at the design temperature and flow rate. TS 3.7.10 is applicable in MODES 1, 2, 3, and 4.

TS 3.7.19, "Secondary Specific Activity," specifies the limit on secondary coolant specific activity during power operation to minimize releases to the environment because of normal operation, AOOs, and accidents. The accident analysis of the main steam line break (MSLB) assumes an

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initial secondary coolant specific activity used for determining the radiological consequences of the postulated accident. The accident analysis, based on this and other assumptions, shows that the radiological consequences of an MSLB do not exceed the TEDE limit. TS 3.7.19 is applicable in MODES 1, 2, 3, and 4.

The NRC staff has reviewed the proposed changes to TSs 3.7.1 through TS 3.7.10, and TS 3.7.19 and has determined that these TSs are only necessary to assure the operability of certain plant systems during reactor operation. These TSs involve: MSSVs, which provide overpressure protection for the secondary system; MSIVs, which isolate steam flow from the secondary side of the steam generator following a MSLB; MFIVs, which isolate main feedwater flow to the secondary side of the steam generators following a HELB; ADVs, which provide a method for cooling the unit should the condenser not be available; AFW system, which supplies feedwater to the steam generators upon the loss of the normal feedwater supply; CSTs, which provide the preferred source of water to the steam generators for removing decay and sensible heat from the RCS; CCW system, CCW safety-related makeup system, and the SWC system, which provide a heat sink for the removal of process and operating heat from safety-related components during a DBA or transient to the ultimate heat sink; the ECW system that removes heat from ESF spaces through safety-related air handling systems; and secondary specific activity, which specifies a limit on secondary coolant specific activity during power operation.

The above TSs were intended to protect the fuel in the reactor from potential operational transients and accidents. However, 10 CFR 50.82(a)(2) prohibits the licensee from operating the reactor or placing fuel in the reactor vessel. Consequently, there are no longer any transient or accident conditions that these systems and components protect against or mitigate. Therefore, the NRC staff finds the deletion of 3.7.1 through 3.7.10, as detailed above, is acceptable. TS 3.7.19 provides the operational limits on secondary coolant specific activity limiting the potential radiological consequences of an accident that could release pressurized steam from the SGs. Since 10 CFR 50.82(a)(2) prohibits the licensee from operating the reactor or placing fuel in the reactor vessel, there is no source of heat available to pressurize the SGs and no source of activity. Therefore, the NRC staff finds the deletion of TS 3.7.19 is acceptable.

The NRC staff has also reviewed Section 3.7 of the SONGS Units 2 and 3, TS 3.7.1, TS 3.7.2, TS 3.7.3, TS 3.7.4, TS 3.7.5, TS 3.7.6, TS 3.7.7, TS 3.7.7.1, TS 3.7.8, TS 3.7.10, and TS 3.7.19 proposed for deletion to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff notes that these TSs indicate MODES for which the TSs are applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for permanently shutdown and defueled reactors, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply.

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Therefore, based on the evaluation above, the NRC staff finds that the licensee's proposed change to delete Plant Systems TS 3.7.1, TS 3.7.2, TS 3.7.3, TS 3.7.4, TS 3.7.5, TS 3.7.6, TS 3.7.7, TS 3.7.7.1, TS 3.7.8, TS 3.7.10 and 3.7.19, is acceptable.

TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACUS)," specifies the requirements to ensure that the CREACUS provides a protected environment from which operators can control SONGS Units 2 and 3, following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The CREACUS consists of two independent, redundant trains that recirculate and filter the air in the control room envelope (CRE) and a CRE boundary that limits the inleakage of unfiltered air. Each CREACUS train consists of an emergency air conditioning unit, emergency ventilation air supply unit, emergency isolation dampers, and cooling coils and two cabinet coolers. Each emergency air conditioning unit includes a prefilter, a high efficiency particulate air (HEPA) filter, an activated carbon adsorber section for removal of gaseous activity (principally iodines), and a fan. A second bank of HEPA filters follows the adsorber section to collect carbon fines. Ductwork, motor-operated dampers, doors, barriers, and instrumentation also form part of the system. Upon receipt of the actuating signal, normal air supply to the CRE is isolated and the stream of ventilation air is recirculated through the system's filter trains. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers.

There are two CREACUS operational modes. Emergency mode is an operational mode when the control room is isolated to protect operational personnel from radioactive exposure through the duration of a DBA. Isolation mode is an operational mode when the CRE is isolated to protect operational personnel from toxic gases and smoke. Actuation of the CREACUS places the system into either of two separate states of operation, depending on the initiation signal. Actuation of the system to either the emergency mode or isolation mode of CREACUS operation closes the unfiltered-outside-air intake and unfiltered exhaust dampers and aligns the system for recirculation of air within the CRE through the redundant trains of HEPA and charcoal filters. The emergency mode also initiates pressurization of the CRE. Outside air is added to the air being recirculated from the CRE. Pressurization of the CRE minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas adjacent to the CRE boundary. The CRE supply and the outside air supply of the normal control room HVAC are monitored by radiation and toxic-gas detectors, respectively. One detector output above the setpoint will cause actuation of the emergency mode or isolation mode as required. The actions of the isolation mode are more restrictive, and will override the actions of the emergency mode of operation. TS 3.7.11 is applicable in MODES 1, 2, 3, 4, 5, and 6 and during movement of fuel assemblies in the containment or fuel storage pool.

When SONGS Units 2 and 3 were authorized to operate, the CREACUS provided a protected environment from which operators could control the units following postulated accidents involving an uncontrolled release of radioactivity, including an FHA. Prior to SONGS Units 2 and 3 permanently shutting down and defueling, the TSs for the CREACUS provided the LCOs and SRs necessary to maintain the control room environment following an accident. Specifically, during irradiated fuel movement, the CREACUS provided a protected environment from which operators can control the unit following a postulated uncontrolled release of radioactivity from an FHA. CRE will remain habitable during and following a DBA. In MODES 5

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and 6, the CREACUS is required to cope with the release from a rupture of a waste gas tank. During movement of fuel assemblies, the CREACUS must be operable to cope with the release from an FHA.

The licensee provided information on the toxic gases isolation of CREACUS in Section 3.2.10.2.3 of the licensee's permanently defueled technical specification amendment request. Specifically, per the NRC's SE associated with the issuance of SONGS License Amendment Nos. 127 and 116 for Units 2 and 3, respectively dated February 9, 1996 (ADAMS Accession No. ML021990684), the toxic gas isolation of CREACUS is not relied on to prevent or mitigate a design basis accident or transient because the plant design includes other means to safely shut down the plant if the control room becomes uninhabitable. As such, the toxic gas isolation instrumentation was relocated from the TS and placed in the Licensee Controlled Specifications with an applicability of MODES 1, 2, 3, 4, 5, and 6. Since an NRC SE has already accepted the removal of toxic gas isolation of CREACUS from the TSs, a new NRC staff determination is not required. The staff concludes that automatic toxic gas isolation of CREACUS is not required during movement of fuel assemblies in the fuel storage pool at the permanently defueled SONGS Units 2 and 3.

With the termination of reactor operations at SONGS Units 2 and 3 and the permanent removal of the fuel from the reactor core in each unit, the postulated accidents involving failure or malfunction of the reactor, RCS, or secondary system are no longer applicable. While there are no transients that continue to apply to SONGS Units 2 and 3, there are still postulated DBAs. As discussed in Sections 3.1 through 3.6 of this SE, the remaining DBAs applicable to the defueled reactors of SONGS Units 2 and 3 show that the dose consequences are acceptable without relying on SSCs remaining functional for accident mitigation during and following the event, with the exception of the SFP structure.

The NRC staff evaluated these accident analyses and confirmed that no ESF system is used to mitigate the CR, EAB, or LPZ dose consequences. This includes no credit for the FHIS, the PACU filtration system, the CRIS and the CREACUS. Since SONGS Units 2 and 3 are permanently shutdown and defueled, and greater than 17 months of decay time has elapsed since permanent shut down, the remaining DBAs applicable to the facility demonstrate that the dose consequences within the CR are acceptable without relying on SSCs remaining functional for accident mitigation, including an FHA in the FHB. (The one exception to this is the continued function of the passive fuel storage pool structure, which will be maintained as a TS for SONGS Units 2 and 3.)

In summary, the radiological consequences of the remaining DBAs for SONGS Units 2 and 3 assume no credit for CR isolation or recirculation filtration and no credit for any accident mitigation by the FHB ventilation system. Calculated doses at the EAB, LPZ, and CR are within 10 CFR Part 50.67 limits, and RG 1.183 dose limits. Since the DBA accident analysis for SONGS Units 2 and 3 assumed no credit for control room post-accident recirculation system emergency ventilation or filtration, the CREACUS is no longer required. Therefore, isolation of the CRE via the CRIS and CREACUS is not necessary for any of the postulated DBAs. As noted before, the intent of Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C) is to capture into TSs those SSCs that are part of the primary success path of a safety sequence analysis. With SONGS



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Units 2 and 3 permanently shutdown and defueled, and the irradiated fuel having decayed for a minimum period of 17 months, the CREACUS is no longer needed or credited in the primary success path of a safety sequence analysis related to an accident. Since the radiological consequences of the accident analyses are within the appropriate acceptance criteria without credit for the CREACUS, the NRC staff finds that the licensee's proposed change to delete TS 3.7.11, is acceptable.

The licensee intends to retain TS 3.7.16, TS 3.7.17, and TS 3.7.18 but revise these TSs to delete the REQUIRED ACTIONS note that states that LCO 3.0.3 is not applicable. LCO 3.0.3 is being deleted from the SONGS Units 2 and 3 TSs and removal of a reference to TS 3.0.3 is a conforming change. In addition, with the deletion of all TSs in Section 3.1 through 3.6, the licensee also proposes to renumber these TSs to 3.1.1 to 3.1.3, respectively

TS 3.7.16, "Fuel Storage Pool Water Level," specifies the requirements to ensure that the minimum water level in the SFP meets the assumptions of iodine decontamination factors following an FHA. The water also provides shielding during the movement of spent fuel. This TS is applicable during movement of irradiated fuel assemblies in the SFP. The licensee has proposed to retain this TS in the permanently defueled TSs essentially unchanged. The Note in Required Action A.1 (LCO 3.0.3 is not applicable), is being deleted to conform to the deletion of TS LCO 3.0.3. The licensee has also proposed to renumber this TS as 3.1.1, based on the proposed deletion of all the preceding TSs.

Criterion 2 of 10 CFR 50.36(c)(2)(ii)(B) states that TS LCOs must be established for a "process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier." The purpose of this criterion is to capture those process variables that have initial values assumed in the DBA. TS 3.7.16, "Fuel Storage Pool Water Level," specifies the TS required LCOs and SRs that ensure the minimum water level in the SFP meets the assumptions of iodine decontamination factors following an FHA or cask drop accident.

SCE's analysis of the postulated FHA or cask drop accident assumes that there is at least 23 feet of water between the top of the damaged fuel assemblies and the fuel pool surface. The gap activity in the damaged rods is assumed to be instantaneously released into the SFP. Radionuclides in the gap release are assumed to be filtered by the 23 feet of water before emerging from the SFP. The activity exhaust rate from the auxiliary building is established to complete the release in 2 hours, as required by RG 1.183, but does not credit the auxiliary building ventilation for any mitigation of the release.

Since the 23-foot water level of the SFP is an initial condition of the FHA and the cask drop DBA, it satisfies Criterion 2 for inclusion in TSs and is being retained for SONGS Units 2 and 3 in their permanently shutdown and defueled condition. The amendment request by SCE does not involve any change to the technical language in the TS. The discussion in this evaluation of the SFP water level TS is provided only for completeness since the SFP water level is an important initial condition in the FHA and cask drop accident analysis and will continue to be part of the SONGS TSs.

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TS 3.7.17, "Fuel Storage Pool Boron Concentration," specifies the requirements to ensure that the SFP boron concentration is  $> 2000$  parts per million (ppm). The specified concentration of dissolved boron in the SFP preserves the assumptions used in the analyses of the potential critical accident scenarios as described in the criticality analysis of record, which is that a minimum of 2000 ppm of boron is needed to ensure that criticality does not occur during the worst case fuel loading accident. This concentration of dissolved boron is the minimum required for fuel assembly storage and movement within the spent fuel pool. This TS is applicable whenever fuel assemblies are stored in the spent fuel pool. This TS is being retained in the permanently defueled TS essentially unchanged. The Note in Required Action A.1 (LCO 3.0.3 is not applicable), is being deleted to conform to the deletion of TS LCO 3.0.3. The licensee has also proposed to renumber this TS as 3.1.2, based on the proposed deletion of all the preceding TSs.

TS 3.7.18, "Spent Fuel Assembly Storage," specifies the restrictions on the placement of fuel assemblies within the SFP, in accordance with Figure 3.1.3-1 through Figure 3.1.3-4 in the accompanying LCO, to ensure the keff of the SFP will always remain  $< 0.95$ , assuming the pool to be flooded with unborated water. This TS applies whenever any fuel assembly is stored in the spent fuel pool. TS 3.7.18 is being retained in the permanently defueled TS essentially unchanged. The Note in Required Action A.1 (LCO 3.0.3 is not applicable), is being deleted to conform to the deletion of TS LCO 3.0.3. The licensee has also proposed to renumber this TS as 3.1.3, based on the proposed deletion of all the preceding TSs.

The NRC staff reviewed the proposed deletion of the reference to LCO 3.0.3 in the Required Actions Note in TS 3.7.16, TS 3.7.17, and TS 3.7.18. The staff finds that deletion of the Note, "LCO 3.0.3 is not applicable," in each of these TSs is appropriate and the conforming change to the deletion of TS LCO 3.0.3, as discussed in Section 3.7.6 of this SE. Therefore, the staff finds that the licensee's proposed change to delete the reference to LCO 3.0.3 in TS 3.7.16, TS 3.7.17, and TS 3.7.18 (renumber as TS 3.1.1, TS 3.1.2, and TS 3.1.3, respectively – see below), is acceptable.

The NRC staff also reviewed the proposed change to renumber TS 3.7.16, 3.7.17, and TS 3.7.18, to TS 3.1.1, TS 3.1.2, and TS 3.1.3, respectively, and found the change to be editorial and conforming to the overall changes to the TSs. Therefore, the NRC staff finds that the licensee's proposed renumbering of the TSs is acceptable.

### 3.7.14 Section 3.8, Electrical Power Systems

The licensee proposed to delete SONGS Units 2 and 3 electrical power systems TS 3.8.1, TS 3.8.4, TS 3.8.7, and TS 3.8.9, since these TSs are MODE dependent and only applicable to an operating reactor. Therefore, these TSs do not apply to the permanently shutdown and defueled condition of SONGS Units 2 and 3.

TS 3.8.1, "AC [Alternating Current] Sources - Operating," specifies the requirements to ensure that the offsite power sources (normal preferred and alternate preferred power sources), and the standby power sources (Train A and Train B DGs), provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that

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the fuel, RCS, and containment design limits are not exceeded. TS 3.8.1 is applicable in MODES 1, 2, 3, and 4.

TS 3.8.4, "DC [Direct Current] Sources - Operating," specifies the requirements to ensure that the DC electrical power subsystems (with each subsystem consisting of one battery, the required battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the subsystem) are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it in a safe condition after an AOO or postulated DBA. TS 3.8.4 is applicable in MODES 1, 2, 3, and 4.

TS 3.8.7, "Inverters - Operating," specifies the requirements to ensure that required inverters are OPERABLE such that the redundancy incorporated into the design of the RPS and ESFAS instrumentation and controls is maintained. These requirements include the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the RPS and ESFAS instrumentation and controls so that the fuel, RCS, and containment design limits are not exceeded. TS 3.8.7 is applicable in MODES 1, 2, 3, and 4.

TS 3.8.9, "Distribution Systems - Operating," specifies the requirements to ensure availability of AC, DC, and AC instrument bus electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an AOO or a postulated DBA. The AC, DC, and AC vital electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded. TS 3.8.9 is applicable in MODES 1, 2, 3, and 4.

The NRC staff has reviewed the SONGS Units 2 and 3 electrical power systems LCOs in TS 3.8.1, TS 3.8.4, TS 3.8.7, and TS 3.8.9, which have been proposed for deletion, to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff notes that these TSs indicate MODES for which the TS is applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for the permanently shutdown and defueled reactors, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels. Therefore, SONGS Units 2 and 3 are no longer in a configuration or a condition under which these TS MODES apply. Based on the above, the staff finds the deletion of TS 3.8.1, TS 3.8.4, TS 3.8.7, and TS 3.8.9 from TS Section 3.8, Electrical Systems, is acceptable.

The licensee has also proposed to delete SONGS Units 2 and 3 electrical power systems TS 3.8.2, TS 3.8.3, TS 3.8.5, TS 3.8.6, TS 3.8.8, and TS 3.8.10, based on the MODE dependent applicability of these TSs. However, these TSs are also directly applicable during the movement of irradiated fuel assemblies or are support systems for TSs required during the movement of irradiated fuel assemblies. The following evaluations of these electrical power systems TSs assess the licensee's justification as to why these TSs do not apply to the

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permanently shutdown and defueled condition of SONGS Units 2 and 3 during movement of irradiated fuel assemblies.

TS 3.8.2, "AC Sources - Shutdown," specifies the requirements to ensure that the offsite power sources (normal preferred and alternate preferred power sources), and the standby power sources (Train A and Train B DGs), provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded. TS 3.8.2 is applicable during MODES 5 and 6 and during movement of fuel assemblies in containment or in the fuel storage pool.

TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," provides for proper operation of the DGs, by specifying the parameters and ensuring there will be sufficient quantity and proper quality of the fuel oil, lube oil, and starting air systems. Stored diesel fuel oil is required to have sufficient supply for 7 days of rated load operation for each DG. It is also required to meet specific standards for quality. Additionally, sufficient lubricating oil supply must be available to ensure the capability to operate each DG at rated load for 7 days. Lastly, each DG is equipped with two air start systems, which have adequate capacity for five successive start attempts on the DG without recharging the air start receivers. TS 3.8.3 is applicable whenever the DGs are required to be operable.

TS 3.8.5, "DC Sources Shutdown," specifies the requirements to ensure availability of the DC electrical power system and subsystems (with each subsystem consisting of one battery, required battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the subsystem), in order to provide normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching. TS 3.8.5 is applicable during MODES 5 and 6 and during movement of fuel assemblies in containment or in the fuel storage pool.

TS 3.8.6, "Battery Parameters," specifies the requirements to ensure the limits on battery float current as well as electrolyte temperature, level, and float voltage for the DC power subsystem batteries. Battery parameters are required solely for the support of the associated DC electrical power subsystems (per TS 3.8.4 and TS 3.8.5). Therefore, battery parameter limits are only required (and TS 3.8.6 is only applicable) when the DC electrical power source is required to be operable.

TS 3.8.8, "Inverters – Shutdown," specifies the requirements to ensure stability and reliability of the preferred source of power for the 120 Volt AC vital buses. The inverters can be powered from an internal AC source/rectifier or from the station battery. The inverter provides an uninterruptible power source for the safety-related instrumentation and controls. TS 3.8.8 is applicable during MODES 5 and 6 and during movement of fuel assemblies within containment or in the fuel storage pool.

TS 3.8.10, "Distribution Systems - Shutdown," specifies the requirements for the onsite AC, DC, and AC instrument bus electrical power distribution systems. The TS specifies sufficient capacity, capability, redundancy, and reliability of the distribution system to ensure the availability of necessary power to ESF systems so that the fuel, RCS, and containment design



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limits are not exceeded. TS 3.8.10 is applicable during MODES 5 and 6 and during movement of fuel assemblies within containment or in the fuel storage pool.

The SONGS Unit 2 and 3 TS Basis documents indicates that the shutdown electrical power systems TS 3.8.2, TS 3.8.3, TS 3.8.5, TS 3.8.6, TS 3.8.8, and TS 3.8.10 provide assurance that:

- a. The units can be maintained in the shutdown or refueling condition for extended periods;
- b. Sufficient instrumentation and control capability is available for monitoring and maintaining the units status; and
- c. Adequate AC electrical power is provided to mitigate events postulated during shut down, such as an FHA.

The NRC staff has reviewed the SONGS Units 2 and 3 shutdown electrical power systems TSs (TS 3.8.2, TS 3.8.3, TS 3.8.5, TS 3.8.6, TS 3.8.8, and TS 3.8.10), which have been proposed for deletion, to ensure that these LCOs no longer satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The staff notes that these TSs indicate MODES for which the TS is applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for the permanently shutdown and defueled reactors, such as SONGS Units 2 and 3, has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactors or placing fuel in the reactor vessels and SONGS Units 2 and 3 is no longer in a configuration or a condition under which these TS MODES apply. Based on the above, the NRC staff finds that the licensee's proposed change to delete TS 3.8.2, TS 3.8.3, TS 3.8.5, TS 3.8.6, TS 3.8.8, and TS 3.8.10, from TS Section 3.8, Electrical Systems, for MODES 5 and 6, is acceptable.

The NRC staff also reviewed the non-MODE dependent applicability during movement of fuel assemblies within containment and in the fuel storage pool. Because 10 CFR 50.82(a)(2) prohibits operation of the plant or placing fuel in the reactor vessel, the prohibition on placing fuel in the reactor vessel, it also precludes core alterations and the movement of fuel assemblies within containment. Therefore, these TSs are no longer needed during movement of fuel assemblies within containment.

As detailed in Sections 3.1 through 3.6 of this SE, the remaining accident analyses applicable to the permanently shutdown and defueled reactors of SONGS Units 2 and 3 show that the dose consequences within the control room are acceptable without relying on SSCs remaining functional for accident mitigation during any of the remaining DBAs, including FHAs. (The one exception to this is the continued function of the passive fuel storage pool structure, which will be maintained as a TS for SONGS).

For TS 3.8.2, AC Sources – Shutdown, the FHA is the applicable DBA related to the TS requirement for functional capability of AC sources (offsite power and DGs) during the TS

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specified condition of during movement of fuel assemblies in the fuel storage pool. Because the FHA analysis, and the other DBAs identified for SONGS Units 2 and 3, do not rely on normal or emergency power for accident mitigation (including any need for providing airborne radiological protection), the AC sources are not required during movement of fuel assemblies in the fuel storage pool for mitigation of a potential FHA or any of the other DBAs. Specifically, the accident analyses show that the dose consequences are acceptable without relying on any SSCs to remain functional during and following the postulated events, with the exception of the SFP support structure. Therefore, during movement of fuel assemblies in the fuel storage pool, there are no systems that function or actuate and are credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the DBA. As such, the requirement for AC sources is no longer necessary because there are no design-basis events that rely on AC sources for mitigation. Consequently, AC sources no longer meet the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C) and can be removed from TSs. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.2, during movement of fuel assemblies in the fuel storage pool, is acceptable.

The NRC staff has reviewed the need for TS 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air, during movement of fuel assemblies in the fuel storage pool. Since TS 3.8.3 exists solely to support the DG requirements of TS 3.8.1 and TS 3.8.2, the deletion of these TSs is consistent with the elimination of the need for DGs and also eliminates the need for the DG support systems. The NRC staff has determined that the requirement for DGs and associated supporting TSs are no longer necessary because the remaining DBAs for SONGS Units 2 and 3 do not rely on the DGs for mitigation. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.3, during movement of fuel assemblies in the fuel storage pool, is acceptable.

The NRC staff has reviewed the need for TS 3.8.5, DC Sources – Shutdown, during movement of fuel assemblies in the fuel storage pool. Because the FHA analysis, and the other DBAs identified for SONGS Units 2 and 3, do not rely on safety-related DC sources of electrical power for accident mitigation (including any need for providing airborne radiological protection), the DC sources are not required during movement of fuel assemblies in the fuel storage pool for mitigation of a potential FHA or any of the other DBAs. Specifically, the accident analyses show that the dose consequences are acceptable without relying on any SSCs to remain functional during and following the postulated events. Therefore, during movement of fuel assemblies in the fuel storage pool, there are no systems that function or actuate and are credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the DBA. As such, the requirement for DC sources is no longer necessary because there are no design-basis events that rely on DC sources for mitigation. Consequently, DC sources no longer meet the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C) and can be removed from TSs. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.5, during movement of fuel assemblies in the fuel storage pool, is acceptable.

The NRC staff has reviewed the need for TS 3.8.6, Battery Parameters, during movement of fuel assemblies in the fuel storage pool. Since TS 3.8.6 exists solely to support the DC source requirements of TS 3.8.4 and TS 3.8.5, the deletion of these TSs is consistent with the elimination of the need for DC sources and also obviates the need for the battery support

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systems. The staff has determined that the requirement for DC sources and associated supporting TSs are no longer necessary because the remaining DBAs for SONGS Units 2 and 3 do not rely on the DC sources for mitigation. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.6, battery parameters, during movement of fuel assemblies in the fuel storage pool, is acceptable.

The NRC staff has reviewed the need for TS 3.8.8, Inverters – Shutdown, during movement of fuel assemblies in the fuel storage pool. Because the FHA analysis, and the other DBAs identified for SONGS Units 2 and 3 do not rely on inverters or the safety-related 120 Volt AC electrical power for accident mitigation (including any need for providing airborne radiological protection), the inverters are not required during movement of fuel assemblies in the fuel storage pool for mitigation of a potential FHA or any of the other DBAs. Specifically, the accident analyses show that the dose consequences are acceptable without relying on any SSCs to remain functional during and following the postulated events, with the exception of the SFP support structure. Therefore, during movement of fuel assemblies in the fuel storage pool, there are no systems that function or actuate and are credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the DBA. As such, the requirement for inverters is no longer necessary because there are no design-basis events that rely on inverters for mitigation. Consequently, inverters no longer meet the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C) and can be removed from TSs. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.8, during movement of fuel assemblies in the fuel storage pool, is acceptable.

The NRC staff has reviewed the need for TS 3.8.10, Distribution System – Shutdown, during movement of fuel assemblies in the fuel storage pool. Because the FHA analysis, and the other DBAs identified for SONGS Units 2 and 3, do not rely on the safety-related AC, DC and AC instrument bus electrical distribution systems for accident mitigation (including any need for providing airborne radiological protection), these safety-related distributions systems are not required during movement of fuel assemblies in the fuel storage pool for mitigation of a potential FHA or any of the other DBAs. Specifically, the accident analyses show that the dose consequences are acceptable without relying on any SSCs to remain functional during and following the postulated events, with the exception of the SFP support structure. Therefore, during movement of fuel assemblies in the fuel storage pool, there are no systems that function or actuate and are credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the DBA. As such, the requirement for safety-related AC, DC and AC instrument bus electrical distribution systems is no longer necessary because there are no design-basis events that rely on safety-related AC, DC and AC instrument bus electrical distribution systems for mitigation. Consequently, AC, DC and AC instrument bus electrical distribution systems no longer meet the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C) and can be removed from TSs. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 3.8.10, during movement of fuel assemblies in the fuel storage pool, is acceptable.

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### 3.7.15 Section 3.9, Refueling Operations

Section 3.9 of the SONGS Units 2 and 3 TSs, "Refueling Operations," contains the LCOs, Actions, and SRs related to refueling operations. This section contains the following LCOs:

TS 3.9.1, "Boron Concentration," places limits on the boron concentrations of the RCS and the refueling canal to ensure that the reactor remains subcritical during refueling. Refueling boron concentration is the soluble boron concentration in the coolant in each of these volumes, which have direct access to the reactor core during refueling. The boron concentration limits required by TS LCO 3.9.1 are specified in the COLR. The boron concentration limit specified in the COLR will maintain a  $k_{eff}$  of  $< 0.95$  during fuel handling operations with CEAs and fuel assemblies assumed to be in the most adverse configuration (least negative reactivity) allowed by unit procedures. TS 3.9.1 is applicable in MODE 6.

TS 3.9.2, "Nuclear Instrumentation," requires that two source range monitors (SRMs) to be OPERABLE to ensure that redundant monitoring capability is available to detect changes in core reactivity. The SRMs are required to provide a signal to alert the operator to unexpected changes in core reactivity such as by a boron dilution event or an improperly loaded fuel assembly. TS 3.9.2 is applicable in MODE 6.

TS 3.9.3, "Containment Penetrations," specifies the requirements for containment closure during the conduct of CORE ALTERATIONS and movement of fuel assemblies within containment. The containment penetrations included within TS 3.9.3 are the equipment hatch, personnel airlock doors, and penetrations that provide direct access from the containment atmosphere to the outside atmosphere. TS 3.9.3 limits the consequences of an FHA involving handling fuel within containment by limiting the potential escape paths for fission product radioactivity released within containment. TS 3.9.3 is applicable during CORE ALTERATIONS and during the movement of fuel assemblies within containment.

TS 3.9.4, "Shutdown Cooling (SDC) and Coolant Circulation - High Water Level," specifies requirements for the SDC system in MODE 6 to remove decay heat and sensible heat from the RCS, to provide mixing of borated coolant, to provide sufficient coolant circulation to minimize the effects of a boron dilution accident, and to prevent boron stratification. One loop of the SDC system is required to be OPERABLE and in operation in MODE 6, with the water level  $> 20$  feet above the top of the reactor vessel flange. Only one SDC loop is required to be OPERABLE, because the volume of water above the reactor vessel flange provides backup decay heat removal capability. TS 3.9.4 is applicable in MODE 6, with the water level  $> 20$  feet above the top of the reactor vessel flange.

TS 3.9.5, "Shutdown Cooling (SDC) and Coolant Circulation - Low Water Level," also specifies requirements for the SDC system in MODE 6 to remove decay heat and sensible heat from the RCS, to provide mixing of borated coolant, to provide sufficient coolant circulation to minimize the effects of a boron dilution accident, and to prevent boron stratification. However, with the water level  $< 20$  feet above the top of the reactor vessel flange, both SDC loops must be OPERABLE. Additionally, one loop of SDC must be in operation. TS 3.9.5 is applicable in MODE 6 with the water level  $< 20$  feet above the top of the reactor vessel flange.



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TS 3.9.6, "Refueling Water Level," specifies a minimum water level of 23 feet above the top of the reactor vessel flange during movement of fuel assemblies or CEAs within the reactor pressure vessel, and during movement of fuel assemblies within containment. A minimum refueling cavity water level of 23 feet above the top of the reactor vessel flange is required to ensure that the radiological consequences of a postulated FHA inside containment are within acceptable limits. The requirements of TS LCO 3.9.6, in conjunction with a minimum decay time of 72 hours prior to fuel movement, ensures that the release of fission product radioactivity, subsequent to an FHA, results in doses that are well within the guideline values specified in Regulatory Guide 1.183. TS 3.9.6 is only applicable during movement of fuel assemblies or CEAs within the reactor pressure vessel, and during movement of fuel assemblies within containment.

The licensee proposed to delete Section 3.9 of the SONGS Units 2 and 3 TSs LCOs, since they are only applicable to an operating reactor and do not apply to the permanently shutdown and defueled condition of SONGS Units 2 and 3.

The NRC staff has reviewed the proposed changes and has determined that Section 3.9 TSs are only needed to provide the LCOs and SRs necessary to maintain functionality of plant systems required for refueling operations. These TSs involve: boron concentration, which places limits on the boron concentrations of the RCS and the fuel transfer canal during refueling; nuclear instrumentation, which monitors the core reactivity condition during refueling operations; containment penetrations, which specifies requirements for containment closure during the conduct of refueling operations; residual heat removal and coolant circulation – high and low water level, which removes decay heat and sensible heat from the RCS, provides mixing of boric acid, and prevents boron stratification; and refueling cavity water level, which specifies a minimum water level of 23 feet above the top of the reactor vessel flange during movement of irradiated fuel assemblies within containment. However, 10 CFR 50.82(a)(2) prohibits the licensee from operating the plant or placing fuel in the reactor vessel. Therefore, refueling operations are no longer permitted at SONGS Units 2 and 3, and the LCOs in Section 3.9 TSs are no longer relevant.

The NRC staff has also reviewed the refueling operations TSs proposed for deletion to ensure that these LCOs were no longer required to satisfy the 10 CFR 50.36 criteria for inclusion in TSs, as described in Section 2.1 of this evaluation. The NRC staff notes that these TSs indicate MODES for which each TS is applicable. MODES, as defined in TSs, correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning with fuel in the reactor vessel. The reference to MODES for a permanently shutdown and defueled reactor has no meaning and is not relevant. Because SCE has submitted certifications pursuant to 10 CFR 50.82(a)(2), it is prohibited from operating the reactor or placing fuel in the reactor vessel and SONGS Units 2 and 3 are no longer in a configuration or a condition under which the TS MODES apply.

Based on the above, the NRC staff finds that the licensee's proposed change to delete TS Section 3.9, Refueling Operations, is acceptable.

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### 3.7.16 Section 4.0, Design Features

TS 4.1, "Site" provides a description regarding the location of SONGS. The licensee has proposed to retain this TS section in the permanently defueled SONGS Units 2 and 3 TSs with no changes.

TS 4.2, "Reactor Core," provides a general description of the number of and design material requirements for the fuel and control element assemblies used in the reactor core. The licensee has proposed to delete the design feature descriptions for fuel and control element assemblies, since they are only applicable to an operating reactor and do not apply to the permanently shutdown and defueled condition of SONGS Units 2 and 3.

The NRC staff has reviewed the proposed changes to delete the reactor core fuel and control element assemblies design features from SONGS Units 2 and 3 TSs. Since 10 CFR 50.82(a)(2) prohibits the licensee from operating the reactors or placing fuel in the reactor vessels, the design features related to the reactor core fuel assemblies and control rods are no longer relevant at SONGS Units 2 and 3. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 4.2, reactor core design features, is acceptable.

TS 4.3, "Fuel Storage," provides a description and the requirements regarding prevention of criticality of spent fuel, prevention of SFP drainage and spent fuel capacity limitations. This TS section is being retained in the permanently defueled TSs, with the exception of TS 4.3.1.2, which is the design and maintenance of the new fuel storage racks as discussed below. The licensee has also made editorial changes to the TS references in this section to conform to the proposed renumbering of certain retained TSs.

TS 4.3.1.2 has been proposed to be deleted because new fuel is no longer stored onsite and License Condition 2.B.(3) is being revised to no longer allow receipt of new fuel. The NRC staff has reviewed the proposed changes to remove the new fuel storage rack design features from the TSs. Since the licensee currently has no new fuel stored onsite and since the facility license will no longer allow new fuel to be stored onsite, the requirements for new fuel storage racks are no longer applicable.

Based on the above, the NRC staff finds the proposed changes to delete the new fuel storage rack design features from SONGS Units 2 and 3 TS 4.3.1.2 to be acceptable. The staff also reviewed the proposed renumbering of references in TS 4.3.1, Criticality, and determined that the changes to be conforming and editorial in nature. Therefore, the NRC staff finds that the licensee's proposed changes to TS 4.3, Fuel Storage, is acceptable.

### 3.7.17 Section 5.2, Organization and Section 5.3, Facility Staff Qualifications

SONGS Units 2 and 3 permanently defueled TS 5.1, "Responsibility"; TS 5.2, "Organization"; and TS 5.3, "Facility Staff Qualifications," were previously approved by the NRC staff in License Amendment Nos. 227 and 220 for SONGS Units 2 and 3, respectively, dated September 30, 2014 (ADAMS Accession No. ML14183B240).

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The licensee has proposed several additional changes to TS 5.2, Organization, and TS 5.3, Facility Staff Qualification that were not included in Amendment Nos. 227 and 220. The first change is to capitalize the position of CERTIFIED FUEL HANDLER, consistent with its use as a defined term in TS 1.0, Definitions.

The NRC staff reviewed the proposed change to capitalize the position of CERTIFIED FUEL HANDLER where it is used in TS 5.2 and TS 5.3 and concludes the change is editorial in nature such that the current intent of the affected TS requirements is unchanged. Therefore, the staff finds that the licensee's proposed change to capitalize CERTIFIED FUEL HANDLER in TS 5.2 and TS 5.3, is acceptable.

The licensee has also proposed a change to Facility Staff TS 5.2.2.c (note that this was originally TS 5.2.2.b but was renumbered to TS 5.2.2.c by Amendment Nos. 227 and 220), to clarify that during unexpected absences of on-duty shift crew members, no fuel movement or movement of heavy loads over storage racks containing fuel is permitted. Specifically;

Facility Staff TS 5.2.2.c currently states:

- c. Shift crew composition may be less than the minimum requirement of Table 5.2.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

Revised Facility Staff TS 5.2.2.c would state:

- c. Shift crew composition may be less than the minimum requirement of Table 5.2.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements. During such absences, no fuel movement or movement of heavy loads over storage racks containing fuel is permitted.

The NRC staff has reviewed the proposed revision to TS 5.2.2.c restricting fuel movement or movement of heavy loads over storage racks containing fuel when an unexpected absence of the on-duty shift crew results in a minimum crew composition less than specified in TSs. The staff finds that additional restriction on fuel movement and heavy loads prudent considering the reduced staffing levels at a permanently shutdown and defueled reactor facility. Therefore, the NRC staff finds that the proposed licensee change to TS 5.2.2.c, is acceptable.

The licensee has also proposed a change to Facility Staff Qualifications TS 5.3.1 to delete the qualification requirements for multi-discipline supervisors. SCE states that it will no longer be utilizing the position of multi-discipline supervisor. Specifically;

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Facility Staff Qualifications TS 5.3.1 currently states:

- 5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except a) the radiation protection manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and b) multi-discipline supervisors who shall meet or exceed the qualifications listed below.
- a. Education: Minimum of a high school diploma or equivalent.
  - b. Experience: Minimum of four years of related technical experience which shall include three years power plant experience of which one year is at a nuclear plant.
  - c. Training: Complete the multi-discipline supervisor training program.

Revised Facility Staff Qualifications TS 5.3.1 would state:

- 5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except a) the radiation protection manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

The NRC Staff has reviewed the proposed deletion of the qualifications for multi-discipline supervisors from the SONGS Units 2 and 3 TSs and concluded that the qualifications are not necessary since the licensee no longer utilizes multi-discipline supervisors. Therefore, the NRC staff finds that the licensee's proposed change to TS 5.3.1, is acceptable.

#### 3.7.17.1 Section 5.4, Technical Specification (TS) Bases Control

SONGS Units 2 and 3, TS 5.4, "Technical Specifications (TS) Bases Control," is a program that provides the requirements for changing the TS Bases without prior NRC approval. TS 5.4 will remain applicable with the reactor permanently shutdown and defueled. As such, it is being retained and revised, as follows, to reflect a permanently defueled condition.

Currently, the licensee is required to submit changes to the TS Bases to the NRC, which have been implemented without prior NRC approval, within 6 months following every Unit 3 refueling, not to exceed 24 months. The licensee has proposed to revise TS 5.4.4 to be consistent with the submittal of UFSAR updates for the permanently shutdown and defueled status of SONGS Units 2 and 3. The TS Bases changes (that do not require NRC approval) will be submitted to the NRC for information and/or review every 24 months consistent with the UFSAR updates.

The NRC staff has reviewed the proposed change to TS 5.4.4 that aligns the submittal of changes to the TS Bases to every 24 months consistent with the submittal of the UFSAR changes. The NRC staff has determined that the proposed revision to the frequency of submitting the TS Bases Control changes to NRC is administrative in nature. The revised TS



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5.4.4 continues to meet the minimum frequency of the original TS. In addition, the change is consistent with the requirements of 10 CFR 50.71(e) for providing UFSAR updates to the NRC for a permanently shutdown and defueled reactor (i.e., every 24 months). Therefore, the NRC staff finds that the licensee's proposed change to TS 5.4.4, is acceptable.

#### 3.7.17.2 Section 5.5.1, Procedures

TS 5.5.1, "Procedures," addresses procedures, programs and manuals required by the SONGS Units 2 and 3 TSs. The licensee proposes to delete that following procedures from the permanently defueled technical specifications:

TS 5.5.1.1, "Scope," requires that written procedures be established, implemented, and maintained covering certain activities. The licensee has proposed to delete TS 5.5.1.1, paragraphs b and f.

TS 5.5.1.1, paragraph b., currently states:

The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;

NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980 (ADAMS Accession No. ML051400209), and NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability," January 1983 (ADAMS Accession No. ML102560009), as stated in Generic Letter 82-33, "Supplement 1 to NUREG-0737 - Emergency Response Capabilities," dated December 17, 1982 (ADAMS Accession No. ML031080548), incorporated into one document all Three Mile Island (TMI)-related items approved for implementation by the Commission at that time. This included the use of human factored, function oriented, emergency operating procedures to improve human reliability and the ability to mitigate the consequences of a broad range of initiating events for operating reactors, and subsequent multiple failures or operator errors, without the need to diagnose specific events.

The licensee has proposed to delete the requirement of TS 5.5.1.1.b. because the emergency operating procedures discussed therein only pertain to accidents and events resulting from reactor operation. The licensee stated that the referenced procedures are no longer required for a permanently shutdown and defueled reactor.

The NRC staff reviewed the proposed deletion of TS 5.5.1.1.b. and determined that NUREG-0737, as supplemented, implemented programmatic changes to the way reactor operators are trained, instrumentation information is presented, and procedures are structured, using human factors and a function oriented approach to address operating events and accidents. These accidents, and the associated emergency operating procedures to detect, respond to, and mitigate such accidents, concerned malfunctions of the reactor and its supporting systems are not relevant to a permanently shutdown and defueled reactor, which is

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no longer authorized to operate or place fuel in the reactor vessel. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.1.1.b., is acceptable.

TS 5.5.1.1.f., concerns the modification of the core protection calculator (CPC) addressable constants. Software modifications to constants, algorithms, or fuel cycle specific data shall be performed in accordance with the most recent version of "CPC Protection Algorithm Software Change Procedure," (CEN-39(A)-P). The licensee has proposed to delete TS 5.5.1.1.f. because the CPC is no longer required. The CPCs are one of two systems that monitor core power distribution online and derive the LHR and DNBR parameters and associated RPS trips. The TSs that rely on the CPC are TS 3.3.1 RPS Instrumentation - Operating and TS 3.3.3 Control Element Assembly Calculators, and are only applicable in MODES 1 and 2.

The NRC staff has determined that the instrumentation-related TS 3.3.1 and TS 3.3.3 that reference the CPC, as discussed in the Section 3.7.9 of this SE, are no longer required based on the permanent shutdown and defueled condition of SONGS Units 2 and 3. The CPC is part of the RPS to protect the reactor core from damage. Since SONGS Units 2 and 3 are not authorized to operate or emplace fuel in the reactor vessel, protection of the reactor core is no longer relevant, and a control procedure for the modification of the CPC, as required in TS 5.5.1.1.f., is unnecessary. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.1.1.f., is acceptable.

#### 3.7.17.3 Section 5.5.2, Programs and Manuals

TS 5.5.2.4, "Component Cyclic or Transient Limit Program," controls to track cyclic and transient occurrences to ensure that RCS components are monitored for fatigue evaluation based on a conservative estimate of the magnitude and frequency of the temperature and pressure transients resulting from normal operation, normal and abnormal load transients and accident conditions. The licensee proposes to delete this program since the RCS components monitored by this program are no longer used at SONGS Units 2 and 3 considering its permanently shutdown and defueled status.

The NRC staff has determined that deletion of the Component Cyclic or Transient Limit Program from TSs is consistent with the transition to a permanently shutdown and defueled facility. Since, in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the plant or placing fuel in the reactor vessel, the RCS and reactor support systems are no longer in use. Consequently, the component cyclic or transient limit program is not relevant at SONGS Units 2 and 3 since the components monitored by the program are permanently out of service. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.4, appropriately reflects the change in plant status, and is acceptable.

TS 5.5.2.5, "Reactor Coolant Pump Flywheel Inspection Program," provides for the inspection of the reactor coolant pump flywheels. The licensee proposed to delete this program since the reactor coolant pump flywheel is a component only used in support of reactor operation. Inspection of the reactor coolant pump flywheel is not relevant to SONGS Units 2 and 3 since the licensee is no longer authorized to operate the reactor or emplace fuel in the reactor vessel.

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The NRC staff has determined that deletion of the Reactor Coolant Pump Flywheel Inspection Program from TSs is consistent with the transition to a permanently shutdown and defueled facility. Since, in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the plant or placing fuel in the reactor vessel, reactor coolant pumps are no longer used in support of any function at the facility. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.5, appropriately reflects the change in plant status, and is acceptable.

TS 5.5.2.6, "Secondary Water Chemistry Program," provides controls for monitoring secondary water chemistry to inhibit SG tube degradation and low pressure turbine disc stress corrosion cracking. The licensee proposed to delete this program because the components that the program was established to protect, using water chemistry control, are associated with reactor operation. With the licensee's decision to cease reactor operations, these components are no longer in operation and do not need protection from degradation or stress corrosion cracking.

The NRC staff has determined that the deletion of the Secondary Water Chemistry Program is consistent with the transition to a permanently shutdown and defueled facility. Since, in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the plant or placing fuel in the reactor vessel, the SGs and turbine are no longer used in support of any function at the facility. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.6, appropriately reflects the change in plant status, and is acceptable.

TS 5.5.2.7, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," provides controls for potentially explosive gas mixtures in the gaseous radwaste system, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The licensee has proposed to revise the explosive gas and storage tank radioactivity monitoring program to be consistent with the permanently shutdown and defueled condition of the SONGS Units 2 and 3 facility. Paragraphs a. and b. of the program are being deleted because these portions of the explosive gas and storage tank radioactivity monitoring program pertain only to reactor support systems that are no longer needed due to SONGS permanently shutdown and defueled condition. Specifically, there will no longer be any source of explosive or radioactive gases generated from reactor operation. In addition, the licensee states that the gaseous radwaste system and the waste gas decay tank have been vented and removed from service. As such, references to potentially explosive gas mixtures and methods for determining gaseous radioactivity have been deleted. The licensee has proposed to retain the storage tank radioactivity monitoring program as modified below:

TS 5.5.2.7     Storage Tank Radioactivity Monitoring Program

This program provides controls for the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The liquid radwaste quantities shall be determined in accordance with the

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Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures."

The program shall include a surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and do not have tank overflows and surrounding area drains connected to the Liquid Waste Management System is less than the amount that would result in concentrations less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Storage Tank Radioactivity Monitoring Program surveillance frequencies.

The NRC staff has reviewed the proposed revision to the Storage Tank Radioactivity Monitoring Program. The staff finds the proposed changes prudent given the uncertainty in how future radwaste generated by flushing and cutting of radioactive systems will be stored and processed. Therefore, the NRC staff finds that the licensee's proposed change to TS 5.5.2.7, Storage Tank Radioactivity Monitoring Program, is acceptable.

TS 5.5.2.8, "Primary Coolant Sources Outside Containment Program," was established to minimize leakage from portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident. The licensee proposed to delete this program since primary coolant systems have been drained at SONGS Units 2 and 3 and there are no longer any transient or accident conditions associated with primary coolant sources given the permanently shutdown and defueled condition of the plant.

The NRC staff has determined that deletion of TS 5.5.2.8, "Primary Coolant Sources Outside Containment Program," is consistent with the transition to a permanently shutdown and defueled facility. Since the licensee has certified its permanent cessation of operations and defueling in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the reactors or placing fuel in the reactor vessels. Consequently, there are no DBAs involving reactor operation or refueling and there can no longer be any transients or accidents involving primary coolant outside of containment. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.8, appropriately reflects the change in plant status, and is acceptable.

TS 5.5.2.9, "Pre-Stressed Concrete Containment Tendon Surveillance Program," provides controls for monitoring any tendon degradation in the pre-stressed concrete containment. The licensee has proposed to delete this program because the status of the containment is not relevant to the permanently shutdown and defueled reactors at SONGS Units 2 and 3.



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The NRC staff considers that TS 5.5.2.9, "Pre-Stressed Concrete Containment Tendon Surveillance Program," is only applicable to a reactor authorized to operate or retain irradiated fuel in the reactor vessel. Pursuant to the licensee's certifications under 10 CFR 50.82(a)(2), the license is prohibited from operating the reactors or placing fuel in the reactor vessels at SONGS Units 2 and 3. Consequently, there are no DBAs involving reactor operation or refueling and no reliance on the containment to mitigate operating reactor DBAs. Thus, the staff has determined that containment tendon surveillance program TS is no longer applicable. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.9, is acceptable.

TS 5.5.2.10, "Inservice Inspection and Testing Program," establishes the controls for periodic inspection and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves in accordance with the ASME Operation and Maintenance Code. These code classes protect equipment relied upon to prevent and mitigate DBAs. The licensee proposed to delete this program since there is no longer any ASME Code Class 1, 2 or 3 pumps and valves, or Code Class CC or MC components in the SONGS Units 2 and 3 inservice inspection and testing program that continue to operate and perform a specific function in mitigating the consequences of a reactor accident due to the permanently shutdown and defueled status of the plants.

Because the licensee is prohibited from operating the plant or placing fuel in the reactor vessel, in accordance with 10 CFR 50.82(a)(2), there are no longer any ASME Code class pumps and valves that remain in operation and are to be relied upon to mitigate a DBA. As such, the inservice inspection and testing program is no longer relevant to SONGS Units 2 and 3, given the permanently shutdown and defueled status of these facilities. The NRC staff also notes that the licensee shall continue to monitor the performance and condition of all SSCs associated with the storage, control, or maintenance of spent fuel in in a safe condition and with reasonable assurance that these SSCs are capable of fulfilling their intended functions, pursuant to 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.10, Inservice Inspection and Testing Program, appropriately reflects the change in plant status, and is acceptable.

TS 5.5.2.11, "Steam Generator (SG) Program," ensures that the SG tube integrity is maintained. The licensee proposed to delete this program since SONGS Units 2 and 3 are permanently defueled and not authorized to operate; therefore, the SGs are no longer functional and the SG tubes will not be subjected to the temperature and pressure effects that the SG program was put in place to protect against.

The NRC staff has determined that the SG program is only relevant to an operating reactor where the SGs are used for removing heat associated with reactor operation. Since the licensee has certified its permanent cessation of operations and defueling in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the reactors or placing fuel in the reactor vessels. Consequently, the SGs are no longer used in support of any function at the facility. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.11, appropriately reflects the change in plant status, and is acceptable.

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TS 5.5.2.12, "Ventilation Filter Testing Program (VFTP)," establishes the required testing and frequency of the CREACUS high efficiency particulate filters and charcoal adsorbers utilized by the system.

The VFTP is being deleted because it pertains only to reactor support systems that does not apply in a permanently defueled condition. As noted, in part, by the licensee in its license amendment request, dated March 21, 2014, "[t]he accident analysis applicable to the permanently defueled condition does not rely on ventilation filters for accident mitigation."

The NRC staff has determined that reference to the VFTP only appears in SONGS Units 2 and 3 TSs in three places: TS 5.5.2.12; TS 3.7.11 "Control Room Emergency Air Cleanup System (CREACUS)" (SR 3.7.11.2 and SR 3.7.11.4); and TS 5.5.2.16.d of the "Control Room Envelope Habitability Program." The VFTP is used to confirm the function and operability of the CREACUS. The NRC staff has evaluated CREACUS in Section 3.7.13 (TS 3.7.11) and found that CREACUS is no longer required in the SONGS TSs per Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C). Since TS 5.5.2.12 "Ventilation Filter Testing Program" only exists to support the SRs of TS 3.7.11 (i.e. SR 3.7.11.2 and SR 3.7.11.4, respectively) and since the NRC approves that deletion of TS 3.7.11, the NRC staff finds the licensee's proposed change to delete TS 5.5.2.12, is acceptable.

TS 5.5.2.13, "Diesel Fuel Oil Testing Program," pertains to the testing of both new and stored fuel oil used to supply the EDGs. The accident analyses applicable to the permanently shutdown and defueled condition at SONGS no longer rely on EDGs for accident mitigation. The requirement for EDGs, which are supported by the fuel oil being tested per this program, has been proposed for deletion from the TSs.

The NRC staff has reviewed the proposed changes against the requirements in 10 CFR 50.36 and Chapter 15 of the SONGS UFSAR and concluded that the EDG fuel oil and lube oil system are not required. These support systems to the EDGs are not required because there are no active systems or associated support systems credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the FHA DBA. The staff confirmed that there are no other DBAs that rely on EDGs or the EDG support systems. In addition, the NRC staff approves the deletion of TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," in Section 3.7.14 of this SE. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.13, the diesel fuel oil testing program, is acceptable.

TS 5.5.2.15, "Containment Leakage Rate Testing Program," is being proposed for deletion because the containment leakage rate testing program pertains only to verifying the operability of the containment systems. The need for containment or the associated required TSs does not apply in a permanently shutdown and defueled condition. The requirements for containment systems (i.e. TS 3.6.1, TS 3.6.2, TS 3.6.3, TS 3.6.4, TS 3.6.5, TS 3.6.6.1, TS 3.6.6.2, TS 3.6.8 and TS 3.9.3) are being deleted, as described in Section 3.7.12 of this SE.

Primary containment integrity and isolation are only required for post-accident conditions from power operations. However, 10 CFR 50.82(a)(2) prohibits the licensee from operating the plant

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or placing fuel in the reactor vessel. Therefore TS 3.6.1, TS 3.6.2, TS 3.6.3, TS 3.6.4, TS 3.6.5, TS 3.6.6.1, TS 3.6.6.2, TS 3.6.8 and TS 3.9.3, which address primary containment integrity and isolation during power operations and refueling operations, are no longer applicable. The program specified TS 5.5.2.15 requires the implementation of containment leakage rate testing in accordance with 10 CFR Part 50 Appendix J, Option B, "Performance-Based Requirements." The TS 5.5.2.15 program is no longer needed since 10 CFR 50.54(o) excludes permanently defueled units from the requirements of 10 CFR Part 50 Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors." Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.15, Containment Leakage Rate Testing Program, is acceptable.

TS 5.5.2.16, "Control Room Envelope Habitability Program," ensures that adequate radiation protection is provided to permit access and occupancy of the CRE under DBA conditions without personnel receiving radiations exposures above limits. The licensee has proposed this program for deletion because the CRE is not required for providing airborne radiological protection for the control room operators for the remaining DBAs at SONGS Units 2 and 3 based on the permanently shutdown and defueled status of the facility.

The NRC staff evaluated the remaining accident analyses at SONGS Units 2 and 3 and confirmed that no ESF system is credited in the mitigation of the CR, EAB, or LPZ dose consequences, as detailed in Sections 3.2 through 3.6 of this SE. This includes no credit for the FHIS, the fuel handling building PACU filtration system, the CRIS and the CREACUS. The evaluation of the DBAs applicable to the permanently shutdown and defueled facility demonstrate that the dose consequences within the CRE are acceptable without relying on SSCs remaining functional for accident mitigation, including FHAs. (The one exception to this is the continued function of the passive fuel storage pool structure, which will be maintained as a TS for SONGS.)

Reference to the "Control Room Envelope Habitability Program" only appears in the current SONGS Units 2 and 3 TSs in two places: TS 5.5.2.16, "Control Room Envelope Habitability Program" and TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACUS)" (SR 3.7.11.4).

The NRC staff previously determined in its evaluation of TS 3.7.11, "CREACUS," Section 3.7.13 of this SE, that CREACUS no longer satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii)(C). Consequently, the NRC staff has approved the deletion of TS 3.7.11 for SONGS Units 2 and 3. Since the Control Room Envelope Habitability Program only exists to support a surveillance requirement of TS 3.7.11 (i.e. SR 3.7.11.4) and since TS 3.7.11 will be deleted, the NRC staff finds that the licensee's proposed change to delete TS 5.5.2.16, Control Room Envelope Habitability Program, is acceptable.

TS 5.5.2.17, "Battery Monitoring and Maintenance Program," provides controls for safety-related battery maintenance. The licensee proposes deletion of this program consistent with the deletion of the corresponding TS for DC electrical systems and associated batteries. The licensee states that the SONGS accident analyses do not rely on batteries for any accident mitigation.

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The NRC staff has reviewed the proposed changes against the requirements in 10 CFR 50.36 and Chapter 15 of the SONGS UFSAR and concluded that the DC electrical distribution system batteries are not required. The support systems to the DC electrical distribution system, including the batteries, are not required because there are no active systems or associated support systems credited as part of the initial conditions of an analysis or as part of the primary success path for mitigation of the remaining DBAs at SONGS Units 2 and 3. In addition, the NRC staff has approved the deletion of TS 3.8.6, "Battery Parameters," in Section 3.7.14 of this SE. Therefore, the NRC staff finds that the licensee's proposed change to delete the TS 5.5.2.17, the battery monitoring and maintenance program, is acceptable.

#### 3.7.17.4 Section 5.6, Safety Function Determination Program (SFDP)

The SONGS Units 2 and 3, "Safety Function Determination Program (SFDP)," as detailed in TS 5.6.1, TS 5.6.2, TS 5.6.3 and TS 5.6.4, ensures that a loss of safety function is detected and appropriate actions taken. Upon failure to meet two or more LCOs at the same time, an evaluation shall be made to determine if loss of safety function exists. The program implements the requirements of LCO 3.0.6. LCO 3.0.6 directs an evaluation in accordance with the SFDP to determine if a loss of safety function exists based on the status of redundant TS safety systems and associated support systems (systems that support the functionality of the safety system) to ensure the appropriate required actions are taken to maintain overall reactor safety. There are no active SSCs at SONGS Units 2 and 3 that are required for accident mitigation with the permanent cessation of reactor operations and the permanent removal of the fuel from the reactor vessels, as discussed in the evaluation of the remaining DBAs in Sections 3.2 through 3.6 of this SE. Therefore, the requirements of the SFDP, which directs cross-train checks of multiple and redundant safety systems, no longer apply.

Based on the permanently shutdown and defueled status of SONGS Units 2 and 3, all specifications for the active systems from the defueled TSs have been proposed for deletion by this licensing action. Consequently, the SFDP is no longer meaningful. In addition, the SFDP is invoked by LCO 3.0.6, which is being deleted in its entirety, as discussed in Section 3.7.6 of this SE. Therefore, the NRC staff finds that the licensee's proposed change to delete TS Section 5.6, Safety Function Determination Program, is acceptable.

#### 3.7.17.5 Section 5.7, Reporting Requirements

TS 5.7.1.1, "Annual Reports," requires a Reactor Coolant System Specific Activity Report in accordance with TS 5.7.1.1.b. The report gathered data on reactor conditions when the I-131 or gross specific activity of the reactor coolant exceeded limits specified in TS 3.4.16. The licensee has proposed to delete SONGS Units 2 and 3, TS 5.7.1.1.b, "Reactor Coolant System Specific Activity Report," since it is not applicable to a permanently shutdown and defueled reactor.

The NRC staff has reviewed the proposed deletion of TS 5.7.1.1 concerning the Reactor Coolant Specific Activity Report. The facility RCSs have been drained and the activity of the RCS is no longer relevant to the SONGS Units 2 and 3 in their permanently shutdown and



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defueled status. In addition, as noted above, TS 5.7.1.1.b only exists to analyze data related to the exceedance of limits specified in TS 3.4.16. Since RCS activity is not meaningful for SONGS and TS 3.4.16 will be deleted, the NRC staff finds that the licensee's proposed change to delete TS 5.7.1.1, is acceptable.

TS 5.7.1.2, "Annual Radiological Environmental Operating Report," covers summaries, interpretations, and analyses of trends related to the radiological environmental monitoring program, for each unit, during the previous calendar year.

The licensee has proposed to revise the TS description by replacing applicability of the report to the "facility" rather than to each "unit." In addition, the licensee is deleting a Note indicating "a single submittal may be made for a multiple unit station." This note is no longer necessary since the SONGS facility is no longer treated as a multiunit site for the purposes of the annual radiological environmental operating report.

The NRC staff reviewed the proposed revision to TS 5.7.1.2 and concludes that changing the word "unit" to "facility" and the deletion of the multiple unit station note is a clarifying change that is editorial in nature such that the current intent of the requirement is unchanged. Therefore, the NRC staff finds that the licensee's proposed change to TS 5.7.1.2, Annual Radiological Environmental Operating Report, is acceptable.

TS 5.7.1.3, "Radioactive Effluent Release Report," covers "...the operation of the unit during the previous calendar year..." In addition, the report shall summarize the "...effluents released from the unit," and "... radioactive waste shipped from the unit directly..." and "... radioactive waste shipped from the unit's intermediary processor..."

The licensee proposed to revise the TS description by replacing "unit" with "facility" such that the description will state "... the operation of the facility during the previous calendar year ..." and, effluents "... released from the facility" and "... radioactive waste shipped from the facility directly ..." and "... radioactive waste shipped from the facility's intermediary processor...." In addition, the licensee is deleting a Note indicating "a single submittal may be made for a multiple unit station." This note is no longer necessary since the SONGS facility is no longer treated as a multiunit site for the purposes of the radioactive effluent release report.

The NRC staff reviewed the proposed revision to TS 5.7.1.3 and concludes that changing the word "unit" to "facility" and the deletion of the multiple unit station note is a clarifying change that is editorial in nature such that the current intent of the requirement is unchanged. Therefore, the NRC staff finds that the licensee's proposed change to TS 5.7.1.3, Radioactive Effluent Release Report, is acceptable.

TS 5.7.1.5, "Core Operating Limits Report (COLR)," establishes the core operating limits prior to each reload cycle. The licensee proposed to delete this program since it is prohibited from reloading fuel into the SONGS Units 2 and 3 reactor core and the safety limits established by this report no longer apply.

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The NRC staff has determined that the proposed deletion of the COLR would appropriately reflect the permanently shutdown and defueled condition of the facility. The COLR only applies to reactors authorized to operate. Since the licensee is prohibited from operating the SONGS reactors or placing fuel in the reactor vessels, the COLR is no longer necessary. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.7.1.5, is acceptable.

TS 5.7.1.6, "Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR)," documents the pressure and temperature limits for heatup, cooldown, heatup and cooldown rates, low temperature operation, criticality, and hydrostatic testing as referenced in the following TSs:

- TS 3.4.3 RCS Pressure and Temperature (P/T) Limits
- TS 3.4.6 RCS Loops – Mode 4
- TS 3.4.7 RCS Loops – Mode 5, Loops Filled
- TS 3.4.12.1 Low Temperature Overpressure Protection (LTOP) System, RCS Temperature ≤ PTLR Limit
- TS 3.4.12.2 Low Temperature Overpressure Protection (LTOP) System, RCS Temperature > PTLR Limit

The licensee proposes to delete this program since the RCS is no longer used at SONGS Units 2 and 3 in its permanently shutdown and defueled status.

The NRC staff has determined that deletion of the Reactor Coolant System Pressure and Temperature Limits Report from TSs is consistent with the transition to a permanently shutdown and defueled facility. Since, in accordance with 10 CFR 50.82(a)(2), the licensee is prohibited from operating the reactors or placing fuel in the reactor vessels, the RCS and reactor support systems are no longer in use. Consequently, the RCS PTLR is not relevant at SONGS Units 2 and 3 since the RCS is no longer functional. The staff notes that the change is consistent with the deletion of the Section 3.4 RCS TSs that reference the PTLR as discussed in Section 3.7.10 of this SE. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.7.1.6, appropriately reflects the change in the SONGS plant status, and is acceptable.

TS 5.7.1.7, "Hazardous Cargo Traffic Report," requires that SCE monitors the hazardous cargo traffic on Interstate Highway 5 and the railroad line near SONGS and submits the results to the NRC Regional Administrator once every 3 years. This reporting requirement addressed potential changes in use characteristics of these transportation routes over the life of the facility. In the enclosure to the license amendment request dated March 21, 2014, SCE proposed to delete this reporting requirement from the TSs. In the supplement dated February 23, 2015, SCE stated that it would continue to perform the hazardous traffic report in accordance with a licensee-controlled documents.

The requirements of 10 CFR 50.36(c)(5) state that Administrative Controls TSs should include reporting necessary to assure operation of the facility in a safe manner. The reporting requirements included in Section 5.6 of NUREG-1432, "Standard Technical Specifications – Combustion Engineering Plants," Volume 1 (ADAMS Accession No. ML12102A165), include only those reports specified in the LCOs and those required by regulation. The Hazardous

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Cargo Traffic Report does not directly relate to operation of the facility in a safe manner. Rather, it helps identify changes in the site environs that should be periodically assessed to ensure that the scope of events considered in the design-basis remains adequate. Consequently, the report does not significantly contribute to assuring operation in a safe manner. Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.7.1.7, Hazardous Cargo Traffic Report, and implement a similar reporting requirement in a licensee controlled document, is acceptable.

TS 5.7.2, "Special Reports," provides a description and requirements regarding reports related to inspections, tests, and maintenance activities as directed in other SONGS TSs. The listed Special Reports pertain to 1) a pre-planned alternate method of monitoring post-accident instrumentation functions, 2) abnormal degradation of the containment structure detected during tests required by the Pre-Stressed Concrete Containment Tendon Surveillance Program, and 3) a report, following entry into MODE 4, concerning inspections performed in accordance with the SG program. The licensee states that these reports are being deleted because they do not apply in a permanently defueled condition.

The NRC staff concludes that the TS required special report information on inspections, tests, and maintenance activities for safety-related instrumentation, containment, and SGs, apply to SSCs that are no longer relevant at a permanently shutdown and defueled SONGS reactors. In addition, the NRC has approved the deletion of the associated TSs for the SSC that are subject to these special reports from the SONGS Unit 2 and 3 permanently defueled TSs. Specifically:

(1) the special report for a pre-planned alternate method of monitoring post-accident instrumentation functions is no longer necessary since the post-accident monitoring instrumentation in TS 3.3.11 is being deleted from the SONGS defueled TSs, as discussed in Section 3.7.9 of this SE.

(2) the special report on abnormal degradation of the containment structure detected during tests required by the Pre-Stressed Concrete Containment Tendon Surveillance Program is no longer necessary since the tendon surveillance program in TS 5.5.2.9 is being deleted from the SONGS defueled TSs, as discussed in Section 3.7.17.3 of this SE.

(3) the special report, following entry into MODE 4, concerning inspections performed in accordance with the SG program is no longer necessary since the SG program in TS 5.5.2.11 is being deleted from the SONGS defueled TSs, as discussed in Section 3.7.17.3 of this SE.

Therefore, the NRC staff finds that the licensee's proposed change to delete TS 5.7.2, Special Reports, is acceptable.

### 3.8 Changes to Facility Operating License

In SCE's March 21, 2014, license amendment request, as supplemented by a letters dated February 25, 2015, and March 18, 2015, the licensee proposed to remove, modify, and add, several facility operating license conditions, based on the permanently shutdown and defueled status of SONGS Units 2 and 3.

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### 3.8.1 Changes to License Condition 2.B.(2)

Currently License Condition 2.B.(2), for SONGS Units 2 and 3, reads:

- (2) Southern California Edison Company (SCE), pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in San Diego County, California, in accordance with the procedures and limitations set forth in this license.

The licensee is proposing to strike reference in the license condition to "...operate..." the facility.

The revised License Condition 2.B.(2) will read, as follows:

- (2) Southern California Edison Company (SCE), pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess and use the facility at the designated location in San Diego County, California, in accordance with the procedures and limitations set forth in this license.

Pursuant to 10 CFR 50.82(a)(2), as a result of the 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii) certifications submitted by the licensee, the 10 CFR Part 50 licenses for SONGS Units 2 and 3 no longer authorize operation of the reactors. As such, reference to operation of the facility in License Condition 2.B.(2) is inconsistent with the limitation imposed on the licensee by 10 CFR 50.82(a)(2). Therefore, the NRC staff finds the licensee's proposed change to License Condition 2.B.(2) provides consistency with 10 CFR 50.82(a)(2) and, is acceptable.

### 3.8.2 Changes to License Condition 2.B.(3)

Currently License Condition 2.B.(3), for SONGS Units 2 and 3, reads:

- (3) SCE, pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

The licensee is proposing to revise this license condition to read, as follows:

- (3) SCE, pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material that was used as reactor fuel, in accordance with the limitations for storage, as described in the Final Safety Analysis Report, as supplemented and amended;



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The licensee states the proposed revision to this license condition is consistent with the restrictions of 10 CFR 50.82(a)(2) that no longer authorizes operation or emplacement of fuel in the reactor vessels at SONGS Units 2 and 3.

The proposed change removes the authorization for receipt and use of special nuclear material (SNM) as reactor fuel and eliminates the reference to use of the SNM for reactor operations. The proposed change also limits the possession of SNM pursuant to the license condition as being "that was used" as reactor fuel. Pursuant to 10 CFR 50.82(a)(2) the 10 CFR Part 50 licenses for SONGS Units 2 and 3 no longer authorize operation of the reactors. As such, the licensee has no need to receive SNM in the form of reactor fuel and cannot use SNM as reactor fuel for reactor operations. The continued authorization to possess SNM "that was used" as reactor fuel is necessary as the licensee currently possesses the reactor fuel that was used for the past operations of the reactor. Based on the above, the NRC staff finds the licensee's proposed change to License Condition 2.B.(3) is consistent with the permanently shutdown status of SONGS Units 2 and 3 and is, therefore, acceptable.

### 3.8.3 Changes to License Condition 2.B.(4)

Currently License Condition 2.B.(4), for SONGS Units 2 and 3, reads:

- (4) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

The licensee is proposing to revise this license condition to read, as follows:

- (4) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required; and possess any byproduct, source and special material as sealed neutron sources that was used for reactor startup;

The licensee states the proposed revision to this license condition is consistent with the restrictions of 10 CFR 50.82(a)(2) that no longer authorizes operation or emplacement of fuel in the reactor vessels at SONGS Units 2 and 3. The proposed changes remove the authorization for receipt and use of byproduct, source, and SNM as sealed neutron sources for reactor startup but retains authorization to possess such sources previously used for reactor startup. The deletion of the authorization to receive and use sources for reactor startup is consistent with the fact that SONGS Units 2 and 3 are no longer authorized to operate and the continued authorization to possess neutron sources that were used for reactor startup is consistent with the safe storage of byproduct, source, and SNM. As such, the NRC staff finds that the licensee's proposed change to License Condition 2.B.(4), is consistent with the permanently shutdown status of the facilities and is, therefore, acceptable.

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### 3.8.4 Changes to License Condition 2.C.(1)

Current License Condition 2.C.(1), for SONGS Units 2 and 3, reads:

#### Maximum Power Level

- (1) Southern California Edison Company (SCE) is authorized to operate the facility at reactor core power levels not in excess of full power (3438 megawatts thermal).

The licensee is proposing to delete this license condition, which will read:

- (1) Deleted

The licensee states that this license condition can be deleted because SONGS Units 2 and 3 are permanently shut down and defueled in accordance with 10 CFR 50.82(a)(2) and therefore power operation is no longer authorized.

The NRC staff has reviewed the proposed deletion of License Condition 2.C.(1) and determined that power operation is no longer authorized at SONGS Units 2 and 3 based on the licensee's 10 CFR 50.82(a)(2) certifications of being permanently shutdown and defueled. The licensee is not authorized to operate the SONGS Units 2 and 3 at any power. Therefore, the NRC staff finds the licensee's proposed change to delete License Condition 2.C.(1) is appropriate and, is acceptable.

### 3.8.5 Changes to License Condition 2.C.(14) [Unit 2] and License Condition 2.C.(12) [Unit 3]

Current License Condition 2.C.(14) for SONGS Units 2 and License Condition 2.C.(12) for SONGS Unit 3, read:

Fire Protection (Section 9.5.1, SER, SSER #4, SSER #5, Section 1.12, SSER #5; SE dated November 15, 1982; Revision 1 to Updated Fire Hazards Analysis Evaluation dated June 29, 1988)

SCE shall implement and maintain in effect all provisions of the approved fire protection program. This program shall be (1) as described in the Updated Fire Hazards Analysis through Revision 3 as revised by letters to the NRC dated May 31, July 22, and November 20, 1987 and January 21, February 22, and April 21, 1988; and (2) as approved in the NRC staff's Safety Evaluation Report (SER) (NUREG-0712) dated February 1981; Supplements 4 and 5 to the SER, dated January 1982 and February 1982, respectively; and the safety evaluation dated November 15, 1982; as supplemented and amended by the Updated Fire Hazards Analysis Evaluation for San Onofre 2 and 3, Revision 1 dated June 29, 1988. SCE may make changes to the approved fire protection program without prior approval of the Commission

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only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

The licensee is proposing to delete License Condition 2.C.(14) for SONGS Unit 2 and delete License Condition 2.C.(12) for SONGS Unit 3, which will read:

Unit 2

(14) Deleted

Unit 3

(12) Deleted

The licensee states that this license condition is based on maintaining an operational fire protection program in accordance with 10 CFR 50.48, "Fire protection," with the ability to achieve and maintain safe shutdown of the reactor in the event of a fire and is no longer applicable at SONGS Units 2 and 3. However, many of the elements that are applicable for the operating plant fire protection program continue to be applicable during plant decommissioning. During the decommissioning process, a fire protection program is required by 10 CFR 50.48(f) to address the potential for fires that could result in a radiological hazard. However, the regulation is applicable regardless of whether a requirement for a fire protection program is included in the facility license. Therefore, a license condition requiring such a program for a permanently shutdown and defueled plant is not needed.

The NRC staff finds that License Conditions 2.C.(14) and 2.C.(12), "Fire Protection," for SONGS Units 2 and 3, respectively, are based on maintaining fire protection programs that provides reasonable assurance that the ability to achieve and maintain safe shutdown in the event of a fire in accordance with 10 CFR 50.48. Achieving and maintaining safe shutdown in the event of a fire is no longer applicable to the decommissioned fire protection programs at SONGS Units 2 and 3, since units are permanently shutdown and the fuel has been removed from the reactors. However, elements of the fire protection program continue during decommissioning to address fire events that could result in radiological hazards. The regulation in 10 CFR 50.48(f) requires SONGS Units 2 and 3 to address the potential for fires, which could result in a radiological hazard. The licensee has proposed that the rule is sufficient to ensure that a program is maintained and therefore having a license condition that also requires fire protection programs for the permanently shutdown and defueled units is redundant. Basis on the evaluation above, the NRC staff concludes that reliance on 10 CFR 50.48(f) is appropriate and the fire protection license condition is no longer necessary. Therefore, the NRC staff finds that the licensee's proposed change to delete License Condition 2.C.(14) for SONGS Units 2, and License Condition 2.C.(12) for SONGS Unit 3, is acceptable.

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### 3.8.6 Changes to License Condition 2.C.(27) [Unit 2] and License Condition 2.C.(28) [Unit 3]

Current License Condition 2.C.(27) for SONGS Unit 2, and License Condition 2.C.(28) for SONGS Unit 3, read:

Upon implementation of Amendment No. 214 [Unit 2 and Amendment No. 206, Unit 3] adopting TSTF 448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.11.4 in accordance with TS 5.5.2.16.c(i), the assessment of CRE habitability as required by Specification 5.5.2.16.c(ii), and the measurement of CRE pressure as required by Specification 5.5.2.16.d, shall be considered met. Following implementation:

- (a) The first performance of SR 3.7.11.4, in accordance with Specification 5.5.2.16.c(i) shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
- (b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.2.16.c(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004, letter response to Generic Letter 2003-01, or within the next 9 month if the time period since the most recent successful tracer gas is greater than 3 years.
- (c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.2.16.d, shall be within 6 months.

The licensee is proposing to delete License Condition 2.C.(27) for SONGS Unit 2 and License Condition 2.C.(28) for SONGS Unit 3, which will read:

#### Unit 2

(27) Deleted

#### Unit 3

(28) Deleted

The NRC staff evaluated the remaining accident analyses at SONGS Units 2 and 3 and confirmed that no ESF system is used to mitigate the CR, EAB, or LPZ dose consequences, as



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detailed in Sections 3.2 through 3.6 of this SE. This includes no credit for the FHIS, the fuel handling building PACU filtration system, the CRIS and the CREACUS. Since SONGS Units 2 and 3 are permanently shut down and defueled, and greater than 17 months of decay time has elapsed since permanent shut down, the remaining DBAs applicable to the facility demonstrate that the dose consequences within the CRE are acceptable without relying on SSCs remaining functional for accident mitigation, with the exception of the passive fuel storage pool structure. In addition, the staff has determined that related CREACUS TS 3.7.11, and the Control Room Envelope Habitability Program TS 5.5.2.16, are no longer needed, as discussed in Sections 3.7.13 and 3.7.17.3, respectively, of this SE. Based on the discussion above, the NRC staff finds that the licensee's proposed change to delete of SONGS Unit 2 License Condition 2.C.(27), and SONGS Unit 3 License Condition 2.C.(28), is acceptable.

### 3.8.7 New License Condition 2.C.(28) [Unit 2] and License Condition 2.C.(29) [Unit 3]

By letter dated February 25, 2015 (ADAMS Accession No. ML15058A033), the licensee responded to an RAI from the NRC staff regarding the actions that will be taken by SCE to provide reasonable assurance that the passive, long-lived structures and components in the SFP, the fire protection system, and the radiation protection system, will be maintained in a safe condition beyond the normal licensed operating period of 40 years, pursuant to the provisions of 10 CFR 50.51(b). The NRC staff asked the licensee to identify and list the long-live, passive structures and components. In addition, the staff requested a summary of actions that will be taken to monitor and maintain the long-lived, passive structures and components. One of the staff's concerns involved the aging of neutron absorbing materials used for criticality control in SFPs.

SCE responded to the specific concern on the use of neutron absorbing materials in the SFP racks at SONGS. SCE noted that the SONGS SFP racks do contain Boraflex, a neutron-absorbing material. However, no credit is taken in SONGS accident analyses or licensing basis for the existence of the Boraflex. In addition, the NRC previously evaluated and approved borated stainless steel rods that may be placed in fuel assembly guide tubes (GTs) for reactivity control. This feature has not been implemented. If implemented in the future, SONGS will institute a surveillance program where, at 5-year intervals, 1 percent of the GT-Inserts will be inspected for any material degradation. The allowance for GT-Inserts and the commitment to the associated inspection program are described in Section 2.3.3.1.2.4.2 of the SE for Amendment Nos. 213 and 205 for SONGS Units 2 and 3, respectively (ADAMS Accession No. ML072550175).

The licensee stated that its current plans are to have all the spent fuel currently stored in the SFPs transferred to the dry cask storage ISFSI before the operating license for either SONGS Units 2 or 3 expires. However, SCE stated it will develop a list of long-lived, passive structures and components if unforeseen circumstances threaten to extend the period of fuel storage in the SFP beyond the current licensed period. SCE will develop the list and an associated aging-management program for those components if all of the spent fuel has not been removed from the SFP by February 16, 2021.

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The expiration date of the Unit 2 operating license (that is, the end of the initial 40-year period of operation) is February 16, 2022. The expiration date of the Unit 3 operating license is November 15, 2022. All spent fuel onsite is expected to be moved to the ISFSI approximately 3 years prior to the expiration of the initial 40-year period of operation for both Units 2 and 3. Therefore, for the Units 2 and 3 SFPs, there is no anticipated need for long-lived, passive structures and components beyond the 40-year period of operation for Units 2 and 3, nor is there an anticipated need to monitor or maintain such structures and components beyond the licensed 40-year period of operation. Should the transition of fuel to the ISFSI be delayed by unforeseen events, it is possible that spent fuel could remain in the SFPs beyond the expiration of the 40-year operating period. Therefore, SCE proposed new license conditions for SONGS Units 2 and 3.

New License Condition 2.C.(28) for SONGS Unit 2, and License Condition 2.C.(29) for SONGS Unit 3, will read:

Unit 2

- (28) Prior to February 16, 2021, if all spent fuel has not been removed from the Unit 2 spent fuel pool, an aging-management program shall be submitted for NRC approval. The scope of the program shall include those long-lived, passive structures and components that are needed to provide reasonable assurance of the safe condition of the spent fuel in the spent fuel pool. Once approved, the program shall be described in the Updated Final Safety Analysis Report and shall remain in effect for Unit 2 until such time that all spent fuel has been removed from the Unit 2 spent fuel pool.

Unit 3

- (29) Prior to February 16, 2021, if all spent fuel has not been removed from the Unit 3 spent fuel pool, an aging-management program shall be submitted for NRC approval. The scope of the program shall include those long-lived, passive structures and components that are needed to provide reasonable assurance of the safe condition of the spent fuel in the spent fuel pool. Once approved, the program shall be described in the Updated Final Safety Analysis Report and shall remain in effect for Unit 3 until such time that all spent fuel has been removed from the Unit 3 spent fuel pool.

The NRC staff has evaluated the licensee's proposed response to the maintenance of long-lived passive structures and components considering the following applicable NRC regulations:

The regulation in 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 62, "Prevention of criticality in fuel storage and handling," requires the prevention of criticality by physical systems or processes, preferably by use of geometrically safe configurations.

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The regulations in 10 CFR 50.51(b) require licensees that have provided certifications for permanent cessation of power operations and permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii) to take actions necessary to decommission and decontaminate the facility and continue to maintain the facility in a safe condition.

The regulations in 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," require licensees to monitor performance or condition of SSCs to ensure they are capable of fulfilling their intended function. The scope of the monitoring specified in 10 CFR 50.65(a)(1) applies to safety-related SSCs as stated in 10 CFR 50.65(b)(1) and to nonsafety-related SSCs whose failure could prevent safety-related SSCs from fulfilling their intended function as stated in 10 CFR 50.65(b)(2)(ii).

The regulations in 10 CFR 50.68 specify requirements for the prevention of criticality accidents and mitigating the radiological consequences of a criticality accident.

The licensee has proposed aging management related license conditions for both SONGS Units 2 and 3, contingent that all remaining fuel will be removed from the SFP by February 16, 2021. If by this time the fuel is not removed from the SFP, the license condition will require that the licensee submit an aging management program for NRC approval. The scope of the program shall include those long lived, passive structures and components that are needed to provide reasonable assurance of the safe condition of the spent fuel in the SFP. Once approved, the program shall be described in the UFSAR and shall remain in effect until such time that all spent fuel has been removed from the SFP. The NRC staff notes that the proposed changes do not affect the design or use of the existing fuel racks, and therefore no criticality analysis was made in association with the changes. The proposed changes also keep intact the systems for the SFP needed to keep the fuel in a subcritical condition. The staff has reviewed the licensee's response to the staff's aging-management concerns and the proposed license conditions to address the concerns. Given that the licensee expects to have all fuel removed from the SONGS SFPs prior to the expiration of the original operating license, the NRC staff has concluded that the proposed new License Condition 2.C.(28) for SONGS Unit 2 and License Condition 2.C.(29) for SONGS Unit 3, adequately address the staff's concerns regarding the maintenance of passive, long-lived structures and components in a safe condition beyond the normal licensed operating period of 40 years, and therefore, finds that the new license conditions are acceptable.

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### 3.8.8 Deletion of License Condition 2.J and Proposed New License Condition 3

Current License Condition 2.J, reads:

#### Unit 2

- J. This license is effective as of the date of issuance and shall expire at midnight on February 16, 2022.

#### Unit 3

- J. This license is effective as of the date of issuance and shall expire at midnight on November 15, 2022.

Revised License Condition 2.J would state for SONGS Units 2 and 3, will read:

- J. Deleted

SCE stated that this license condition can be deleted because SONGS Units 2 and 3 have permanently ceased operation. 10 CFR 50.82(a)(2) prohibits operation of the SONGS Units 2 and 3 reactor since the certifications described therein have been docketed. SCE has proposed that this license condition be replaced by new License Condition 3, which conforms to 10 CFR 50.51, "Continuation of license," in that the license authorizes ownership and possession of SONGS Units 2 and 3 until the Commission notifies the licensee in writing that the license is terminated. The proposed new license condition for SONGS Units 2 and 3, to be used in place of License Condition 2.J., will be License Condition 3.

New License Condition 3 for SONGS Unit 2, will read:

- 3 On June 12, 2013, Southern California Edison (SCE) certified that operations at San Onofre Nuclear Generating Station Unit 2 would permanently cease in accordance with 10 CFR 50.82(a)(1)(i). On July 22, 2013, SCE certified that the fuel had been permanently removed from the reactor vessel in accordance with 10 CFR 50.82(a)(1)(ii). As a result, the 10 CFR 50 license no longer authorizes operation of the reactor, or the emplacement or retention of fuel in the reactor vessel.

This license is effective as of the date of issuance and authorizes ownership and possession of San Onofre Nuclear Generating Station Unit 2 until the Commission notifies the licensee in writing that the license is terminated. The licensee shall:

- A. Take actions necessary to decommission the plant and continue to maintain the facility, including, where applicable, the storage, control and maintenance of the spent fuel, in a safe condition; and



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- B. Conduct activities in accordance with all other restrictions applicable to the facility in accordance with the NRC regulations and the applicable provisions of the 10 CFR 50 facility license as defined in Section 2 of this license.

New License Condition 3 for SONGS Units 3, will read:

- 3. On June 12, 2013, Southern California Edison (SCE) certified that operations at San Onofre Nuclear Generating Station Unit 3 would permanently cease in accordance with 10 CFR 50.82(a)(1)(i). On June 28, 2013, SCE certified that the fuel had been permanently removed from the reactor vessel in accordance with 10 CFR 50.82(a)(1)(ii). As a result, the 10 CFR 50 license no longer authorizes operation of the reactor, or the emplacement or retention of fuel in the reactor vessel.

This license is effective as of the date of issuance and authorizes ownership and possession of San Onofre Nuclear Generating Station Unit 3 until the Commission notifies the licensee in writing that the license is terminated. The licensee shall:

- A. Take actions necessary to decommission the plant and continue to maintain the facility, including, where applicable, the storage, control and maintenance of the spent fuel, in a safe condition; and
- B. Conduct activities in accordance with all other restrictions applicable to the facility in accordance with the NRC regulations and the applicable provisions of the 10 CFR 50 facility license as defined in Section 2 of this license.

The NRC staff has reviewed the proposed deletion of Licensee Condition 2.J and the proposed new License Condition 3 and determined that License Condition 2.J, which documented the date of the expiration of the license, is no longer meaningful for the permanently shutdown condition of the plant in the process of decommissioning. The proposed new License Condition 3 documents the current condition of the plant and summarizes the actions and requirements applicable to the facility by regulation. The proposed License Condition 3 is consistent with the regulatory requirements applicable to the facility in the permanently shutdown and defueled condition, and consistent with a previously issued license conditions for the permanently shutdown and defueled Millstone Unit 1 and the Kewaunee Power Station. Based on the above, the NRC staff finds that the proposed license condition changes are acceptable.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified on May 28, 2015, of the proposed issuance of the amendments. The State official had no comments.

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## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding as published in the *Federal Register* on September 16, 2014 (79 FR 55513). The amendments also relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## 6.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: M. Chernoff  
D. Nold  
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D. Spaulding-Yeoman  
T. Martinez-Navedo  
D. Cunanan  
E. Dickson  
J. Hickman

Date: July 17, 2015

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T. Palmisano

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Thomas J. Wengert, Senior Project Manager  
Plant Licensing IV-2 and Decommissioning  
Transition Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosures:

1. Amendment No. 230 to NPF-10
2. Amendment No. 223 to NPF-15
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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**ADAMS Accession No.: ML15139A390** \* see previous \*\*concurrence via memo

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NAME	WHuffman*	PBlechman*	UShoop (by JDozier for)	RElliott* (by MChernoff for)	RDennig
DATE	5/21/15	7/13/15	02/13/15	4/2/15	9/30/14
OFFICE	NRR/DSS/SBPB/BC**	NRR/DSS/SRXB/BC**	NRR/DE/EEEB/BC**	NRR/DE/EICB/BC**	OGC/NLO
NAME	GCasto	CJackson	JZimmerman	JThorp	BMizuno*
DATE	3/16/15	3/27/15	6/1/15	2/27/15	7/14/15
OFFICE	NRR/DORL/LPL4-2/BC	NRR/DORL/LPL4-2/PM			
NAME	MKhanna	TWengert			
DATE	7/17/15	7/17/15			

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# **EXHIBIT 10**





**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

November , 2017

Mr. Thomas J. Palmisano  
Vice President and Chief Nuclear Officer  
Southern California Edison Company  
San Onofre Nuclear Generating Station  
P.O. Box 128  
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -  
ISSUANCE OF AMENDMENTS TO REVISE THE PERMANENTLY DEFUELED  
EMERGENCY PLAN (CAC NOS. L53160, L53161, and L53162)

Dear Mr. Palmisano:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 168 to Facility Operating License No. DPR-13, Amendment No. 236 to Facility Operating License No. NPF-10, and Amendment No. 229 to Facility Operating License No. NPF-15 for the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, respectively. The amendments consist of changes to the Permanently Defueled Emergency Plan (PDEP) in response to your application dated December 15, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16355A015), as supplemented by letter dated May 5, 2017 (ADAMS Accession No. ML17160A324). The proposed changes more fully reflect the status of the facility, as well as the reduced scope of potential radiological accidents once all spent fuel has been moved to dry cask storage within the onsite independent spent fuel storage installation (ISFSI), an activity which is currently scheduled for completion in 2019.

The proposed changes replace the SONGS PDEP and associated Emergency Action Level (EAL) Bases Manual (hereafter referred to as the EAL scheme) with an ISFSI-Only Emergency Plan (IOEP) and associated EAL scheme. The NRC staff determined that the proposed SONGS IOEP and associated EAL changes continue to meet the standards in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.47, "Emergency plans," and the requirements in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50, as exempted. As such, the SONGS IOEP and associated EAL changes provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

The NRC staff has determined that its documented safety evaluation does not contain Sensitive Security-Related Information (SUNSI) pursuant to 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

T. Palmisano

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A copy of the related Safety Evaluation is provided in Enclosure 4. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice. If you have any questions, please contact me at 301 -415-3178, or via e-mail at [marlayna.vaaler@nrc.gov](mailto:marlayna.vaaler@nrc.gov).

Sincerely,

Marlayna G. Vaaler, Project Manager  
Reactor Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety and Safeguards

Docket Nos. 50-206, 50-361, and 50-362

Enclosures:

1. Amendment No. 168 to DPR-13
2. Amendment No. 236 to NPF-10
3. Amendment No. 229 to NPF-15
4. Safety Evaluation

cc w/encls: Distribution via Listserv



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

DOCKET NO. 50-206

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 168  
License No. DPR-13

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for a license amendment filed by the Southern California Edison Company and the San Diego Gas and Electric Company (the licensee), dated December 15, 2016, as supplemented by letter dated May 5, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and applicable portions of the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
  - B. Construction of San Onofre Nuclear Generating Station, Unit 1 (the facility) has been completed in conformity with Construction Permit No. CPPR-13 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
  - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the applicable rules and regulations of the Commission;
  - D. There is reasonable assurance (i) that the activities authorized by this amended license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with applicable portions of the Commission's regulations set forth in 10 CFR Chapter I;
  - E. The licensee is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

Enclosure 1

- 2 -

- F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
  - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
  - H. The issuance of this license is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied; and
  - I. The possession of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70.
2. Accordingly, the license is amended by changes to paragraph 2.C(2) of Facility Operating License No. DPR-13, and is hereby amended to read as follows:
- (2) Technical Specifications and Environmental Protection Plan
- The Technical Specifications contained in Appendix A, as revised through Amendment No. 168, are hereby incorporated in the license. Southern California Edison Company shall maintain the facility in accordance with the Technical Specifications.
3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days following SCE's submittal of a written certification to the NRC that all spent nuclear fuel assemblies have been transferred out of the spent fuel pools and placed in storage within the onsite ISFSI.

FOR THE NUCLEAR REGULATORY COMMISSION

Bruce A. Watson, CHP, Chief  
Reactor Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety and Safeguards

Attachment:  
Change to Facility  
Operating License No. DPR-13

Date of Issuance: November , 2017



ATTACHMENT TO LICENSE AMENDMENT NO. 168

TO FACILITY OPERATING LICENSE NO. DPR-13

DOCKET NO. 50-206

Replace the following page of the Facility Operating License No. DPR-13 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Facility Operating License No DPR-13

REMOVE

3

INSERT

3

- 3 -

chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Act and the applicable provisions of the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

- (1) Maximum Power Level

The licensee is not authorized to operate the facility as a nuclear reactor.

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 168, are hereby incorporated in the license. Southern California Edison Company shall maintain the facility in accordance with the Technical.



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 236  
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee), dated December 15, 2016, as supplemented by letter dated May 5, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as supplemented, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

Enclosure 2

- 2 -

2. Accordingly, the license is amended by changes to paragraph 2.C(2) of Facility Operating License No. NPF-10, and is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 236, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days following SCE's submittal of a written certification to the NRC that all spent nuclear fuel assemblies have been transferred out of the spent fuel pools and placed in storage within the onsite ISFSI.

FOR THE NUCLEAR REGULATORY COMMISSION

Bruce A. Watson, CHP, Chief  
Reactor Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety and Safeguards

Attachment:  
Change to Facility  
Operating License No. NPF-10

Date of Issuance: November , 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 236

TO FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following page of the Facility Operating License No. NPF-10 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Facility Operating License No NPF-10

REMOVE

3

INSERT

3



-3-

- (3) SCE, pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material that was used as reactor fuel, in accordance with the limitations for storage, as described in the Final Safety Analysis Report, as supplemented and amended;
  - (4) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required; and possess any byproduct, source and special material as sealed neutron sources that was used for reactor startup;
  - (5) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (6) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of San Onofre Nuclear Generating Station, Units 1 and 2 and by the decommissioning of San Onofre Nuclear Generating Station Unit 1.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Deleted
  - (2) Technical Specifications  

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 236, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 229  
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee), dated December 15, 2016, as supplemented by letter dated May 5, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as supplemented, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

Enclosure 3

- 2 -

2. Accordingly, the license is amended by changes to paragraph 2.C(2) of Facility Operating License No. NPF-15, and is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 229, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days following SCE's submittal of a written certification to the NRC that all spent nuclear fuel assemblies have been transferred out of the spent fuel pools and placed in storage within the onsite ISFSI.

FOR THE NUCLEAR REGULATORY COMMISSION

Bruce A. Watson, CHP, Chief  
Reactor Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety and Safeguards

Attachment:  
Change to Facility  
Operating License No. NPF-15

Date of Issuance: November , 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 229

TO FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following page of the Facility Operating License No. NPF-15 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Facility Operating License No. NPF-15

REMOVE

3

INSERT

3

-3-

- (3) SCE, pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material that was used as reactor fuel, in accordance with the limitations for storage, as described in the Final Safety Analysis Report, as supplemented and amended;
  - (4) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required; and possess any byproduct, source and special material as sealed neutron sources that was used for reactor startup;
  - (5) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (6) SCE, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of San Onofre Nuclear Generating Station, Units 1 and 2 and by the decommissioning of San Onofre Nuclear Generating Station Unit 1.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Deleted
  - (2) Technical Specifications  

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 229, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.





**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF  
NUCLEAR SECURITY AND INCIDENT RESPONSE

RELATED TO AMENDMENT NO. 168 TO FACILITY OPERATING LICENSE NO. DPR-13

AND AMENDMENT NO. 236 TO FACILITY OPERATING LICENSE NO. NPF-10

AND AMENDMENT NO. 229 TO FACILITY OPERATING LICENSE NO. NPF-15

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3

DOCKET NOS. 50-206, 50-361, AND 50-362

1.0 INTRODUCTION

The San Onofre Nuclear Generating Station (SONGS), Units 1, 2 and 3, are decommissioning nuclear power reactor units located in San Diego County, California, approximately 62 miles southeast of Los Angeles, and approximately 51 miles northwest of San Diego, on an 84 acre site located entirely within the Camp Pendleton Marine Corps Base. The licensee, Southern California Edison (SCE), is the holder of Facility Operating License Nos. DPR-13 (Unit 1), NPF-10 (Unit 2) and NPF-15 (Unit 3), which were issued pursuant to the Atomic Energy Act of 1954, as amended, and Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR).

SONGS, Unit 1, was granted its provisional operating license by the U.S. Nuclear Regulatory Commission (NRC) on January 1, 1968 (Reference 1), and ceased operation on November 30, 1992 (Reference 2). The licensee completed defueling on March 6, 1993 (Reference 3), and maintained the unit in SAFSTOR until June 1999, when it initiated active decommissioning and dismantlement, or DECON (Reference 4). On December 28, 1993 (Reference 5), the NRC approved the Permanently Defueled Technical Specifications for SONGS, Unit 1. SCE submitted the proposed Decommissioning Plan for SONGS, Unit 1, on November 3, 1994 (Reference 6). As a result of the 1996 revision to the regulations in 10 CFR 50.82, "Termination of license," the NRC replaced the requirement for a decommissioning plan with a requirement for a Post Shutdown Decommissioning Activities Report (PSDAR). On August 28, 1996, the SONGS, Unit 1, Decommissioning Plan became the

Enclosure 4

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SONGS 1 PSDAR (61 FR 67079; December 19, 1996). On December 15, 1998 (Reference 7), SCE submitted an update to the PSDAR to the NRC, as required by 10 CFR 50.82(a)(7), in order to begin planning for the dismantlement and decommissioning of SONGS, Unit 1. Dismantlement of SONGS, Unit 1, is essentially complete and most of the structures and equipment have been removed and sent to a nuclear waste disposal facility. All of the SONGS, Unit 1, fuel is being stored in the onsite independent spent fuel storage installation (ISFSI).

By letter dated June 12, 2013 (Reference 8), SCE submitted a certification to the NRC indicating its intention to permanently cease power operations at SONGS, Units 2 and 3, as of June 7, 2013, pursuant to 10 CFR 50.82(a)(1)(i). By letters dated June 28, 2013 (Reference 9), and July 22, 2013 (Reference 10), SCE submitted certifications of permanent removal of fuel from the Unit 3 and Unit 2 reactor vessels as of October 5, 2012, and July 18, 2013, respectively, pursuant to 10 CFR 50.82(a)(1)(ii). Upon docketing of these certifications, and pursuant to 10 CFR 50.82(a)(2), the SONGS, Units 2 and 3, facility operating licenses no longer authorize operation of the reactors or emplacement or retention of fuel into the reactor vessels.

By application dated December 15, 2016 (Reference 11), as supplemented by letter dated May 5, 2017 (Reference 12), the licensee requested changes to the SONGS Permanently Defueled Emergency Plan (PDEP) pursuant to 10 CFR 50.54(q), "Emergency plans." The proposed changes replace the SONGS PDEP and associated Emergency Action Level (EAL) Bases Manual (hereafter referred to as the EAL scheme) with an ISFSI-Only Emergency Plan (IOEP) and associated EAL scheme. The NRC staff determined that the proposed SONGS IOEP and associated EAL changes continue to meet the standards in 10 CFR 50.47, "Emergency plans," and the requirements in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50, as exempted. As such, the SONGS IOEP and associated EAL changes provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

The proposed changes more fully reflect the decommissioning status of the facility, as well as the reduced scope of potential radiological accidents once all spent fuel has been moved to dry cask storage within the onsite ISFSI, an activity which is currently scheduled for completion in 2019. The supplement to the current application, dated May 5, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on February 14, 2017 (82 FR 10601).

## 2.0 REGULATORY EVALUATION

This safety evaluation assesses the acceptability of the proposed SONGS ISFSI-Only IOEP and associated EAL scheme. This plan would replace the current SONGS PDEP and associated EAL scheme after all of the SONGS, Units 2 and 3, spent fuel has been transferred from the spent fuel pools (SFPs) to the expanded onsite ISFSI. The regulatory requirements, as exempted by letter dated June 4, 2015 (Reference 13), and associated guidance on which the NRC based its acceptance and evaluation are as follows:

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## 2.1 NRC Regulations

- 10 CFR 50.47(b)(1), as exempted, states, in part: "... each principal response organization has staff to respond and to augment its initial response on a continuous basis;"
- 10 CFR 50.47(b)(2) states, in part: "... adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available ...;"
- 10 CFR 50.47(b)(4), as exempted, states, in part: "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee...;"
- 10 CFR Part 50, Appendix E, Section IV.A, as exempted, states, in part: "The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization...;"
- 10 CFR Part 50, Appendix E, Section IV.C.1, as exempted, states, in part: "The emergency classes defined shall include (1) notification of unusual events, (2) alert...;"
- 10 CFR 72.32, "Emergency Plan," Section (a)(3), states: "A classification system for classifying accidents as 'Alerts';" and
- 10 CFR 72.32(a)(7) states, in part: "A brief description of the responsibilities of licensee personnel should an accident occur...."

## 2.2 Regulatory Guidance

- Revision 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 14), provides a common reference and guidance source for nuclear facility operators to develop radiological emergency response plans.
- Office of Nuclear Security and Incident Response / Division of Preparedness and Response (NSIR/DPR) Interim Staff Guidance (ISG) – 2, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants" (Reference 15), provides guidance for the review of permanently defueled emergency plans for power reactor sites undergoing decommissioning.
- Office of Nuclear Materials Safety and Safeguards / Spent Fuel Project Office (NMSS/SFPO) ISG – 16, "Emergency Planning" (Reference 16), provides emergency plan review guidance applicable to facilities licensed pursuant to the regulatory requirements found at 10 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."

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- Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors" (Reference 17), endorsed by the NRC in a letter dated March 28, 2013 (Reference 18), as generic (non-plant-specific) EAL scheme development guidance.

### 3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed emergency plan changes, as described in the application dated December 15, 2016, as supplemented by letter dated May 5, 2017. The technical evaluation is detailed below.

#### 3.1 Background

SONGS, Unit 1, has been permanently shutdown since November 30, 1992, and the final removal of fuel from its reactor vessel was completed on March 6, 1993. SONGS, Units 2 and 3, have been shutdown since January 2012, and SCE submitted certifications of permanent removal of fuel from the Unit 3 and Unit 2 reactor vessels as of October 5, 2012, and July 18, 2013, respectively. SONGS is authorized to possess and store irradiated nuclear fuel at the permanently shutdown and defueled SONGS facility. The spent fuel from SONGS, Unit 1, is stored in the onsite ISFSI and at the General Electric-Hitachi Nuclear Energy Americas, LLC, Morris Operation facility (Docket No. 72-01) located in Morris, Illinois. After the SONGS, Units 2 and 3, reactors were shutdown, all fuel assemblies were removed from the reactor vessels and placed in the SONGS SFPs.

By letter dated March 31, 2014 (Reference 19), as supplemented by letters dated September 9, 2014 (Reference 20), October 2, 2014 (Reference 21), October 7, 2014 (Reference 22), October 27, 2014 (Reference 23), November 3, 2014 (Reference 24), and December 15, 2014 (Reference 25), SCE requested exemptions for SONGS from (1) certain planning standards in 10 CFR 50.47(b) regarding onsite and offsite radiological emergency plans for nuclear power reactors; (2) certain requirements in 10 CFR 50.47(c)(2) that require establishment of plume exposure and ingestion pathway emergency planning zones for nuclear power reactors, and (3) certain requirements in 10 CFR Part 50, Appendix E, Section IV, regarding the content of emergency plans. The NRC approved the requested exemptions in a letter dated June 4, 2015 (Reference 13).

By letters dated June 5, 2015, the NRC issued Amendment No. 166 to Facility Operating License No. DPR-13, Amendment No. 228 to Facility Operating License No. NPF-10, and Amendment No. 221 to Facility Operating License No. NPF-15 for SONGS, Units 1, 2 and 3, respectively, and the ISFSI, for changes to the EAL scheme (Reference 26), and Amendment No. 167 to Facility Operating License No. DPR-13, Amendment No. 229 to Facility Operating License No. NPF-10, and Amendment No. 222 to Facility Operating License No. NPF-15 for SONGS, Units 1, 2, and 3, respectively, and the ISFSI, for changes to the emergency plan (Reference 27). The PDEP and EAL scheme were fully implemented on July 8, 2015 (Reference 28), in accordance with the above-referenced license amendments.

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### 3.2 Proposed Changes

In its application dated December 15, 2016 (Reference 11), as supplemented by letter dated May 5, 2017 (Reference 12), SCE requested that the NRC review and approve a proposed IOEP, including a proposed ISFSI-Only EAL scheme, that is based on NEI 99-01, Revision 6 (Reference 17). The proposed amendments would replace the existing SONGS PDEP and associated EAL scheme, which currently reflect spent fuel from SONGS, Units 1, 2, and 3, being stored in the SFPs and onsite ISFSI. The major changes that SCE is requesting are: (1) removal of the various emergency actions related to the SFPs; (2) removal of non-ISFSI related emergency event types; (3) replacing the "Shift Manager" title with the "ISFSI Shift Supervisor (ISS)" title as the position that assumes the Emergency Director's responsibilities; and (4) a revision to the SONGS Emergency Response Organization (ERO).

The proposed changes modify the scope of onsite emergency preparedness requirements to reflect the reduced potential radiological accidents with all spent fuel in dry cask storage within the ISFSI. The off-normal events and accidents addressed in the SONGS IOEP are related to the dry storage of spent nuclear fuel at the ISFSI, and include only off-normal, accident, natural phenomena, and hypothetical events and consequences affecting the SONGS ISFSI.

Under the previous facility condition with spent fuel stored within the SONGS SFPs, the most severe postulated beyond-design-basis accident involved a highly unlikely sequence of events that cause a heat-up of the spent fuel, postulated to occur without heat transfer, such that the zircaloy fuel cladding reaches ignition temperature. While highly improbable, the resultant zircaloy fire could lead to the release of large quantities of fission products to the atmosphere. However, after removal of the spent fuel from the SONGS SFPs, the age and configuration of spent fuel stored in dry cask storage precludes the possibility of such a zircaloy fire scenario. After all the spent fuel is transferred to dry cask storage within the SONGS ISFSI, the number and severity of potential radiological accidents is significantly less than when spent fuel was stored in the SFPs. For these reasons, the potential radiological consequences of accidents possible at SONGS after all spent fuel is transferred to the ISFSI are further reduced.

There continues to be no need for formal offsite radiological emergency preparedness (REP) plans under 44 CFR Part 350 at SONGS because no design-basis accident or reasonably credible beyond-design-basis accident can result in radioactive releases that exceed the U.S. Environmental Protection Agency (EPA) Early Phase Protective Action Guides (PAGs) (Reference 29) beyond the exclusion area boundary.

### 3.3 Evaluation

The NRC staff reviewed the changes from the current SONGS PDEP to the proposed IOEP and ISFSI-Only EAL scheme, including the licensee's evaluation of the changes, to verify that the proposed IOEP and EAL scheme continue to meet the standards contained in 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50, as exempted, applicable to the approved 10 CFR Part 50 emergency plan for the long-term defueled conditions at SONGS. The NRC staff also performed a review to ensure that the proposed IOEP would be consistent with the requirements of 10 CFR 72.32 for an ISFSI not located on the site of an operating nuclear power reactor. Although the requirements of 10 CFR 72.32 do not apply to a 10 CFR



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Part 50 licensee, such as SONGS, the NRC uses these regulations as guidance to promote consistency between specifically licensed and generally licensed ISFSIs.

### 3.3.1 *ISFSI EALs and Removal of SFP Initiating Conditions and EALs*

The initiating conditions (ICs) and EALs associated with the emergency classification levels in the current PDEP are based on Appendix C to NEI 99-01, Revision 6 (Reference 17), which addresses a nuclear power reactor that has permanently ceased operations and transferred spent fuel from the reactor vessel to the SFPs (permanently defueled). After all spent fuel has been removed from the SFPs and placed in dry cask storage within the ISFSI, the ICs and EALs in Appendix C to NEI 99-01 that are associated with the SFPs at a decommissioning facility are no longer required. Additionally, certain ICs and EALs whose primary function is not associated with the SFPs are no longer required when administrative controls are established to limit source term accumulation and the offsite consequences of uncontrolled effluent releases.

Examples of administrative controls for radiological source term accumulation limits and methods to control the accidental dispersal of the radiological source are:

- Limits on radioactive materials collected on filter media and resins (dose rate limit);
- Limits on surface or fixed contamination on work areas that may create airborne radioactive material (activity limits), and
- Limiting dispersal mechanisms that may cause a fire (e.g., limits on combustible material loading, use of a fire watch to preclude fires, etc.) or placement of a berm around a radioactive liquid storage tank.

Other ICs proposed for deletion include those associated with the mitigative strategies contained in certain SCE license conditions, as well as response procedures for potential or actual aircraft attacks. These will be eliminated after all spent fuel is removed from the SFPs and stored in the onsite SONGS ISFSI. The ICs listed in Table 1 below are being deleted, either partially or in their entirety as indicated, from the PDEP and EAL scheme for SONGS. The ICs being deleted are either associated only with SFP operation or are ICs for which administrative controls to limit possible effluent releases have been established.

**Table 1: Initiating Conditions to be Deleted or Modified**

<b>ALERT</b>	<b>UNUSUAL EVENT</b>
<p><b><u>PD-AA1 (all EALs)</u></b></p> <p>Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 millirems (mrem) total effective dose equivalent (TEDE) or 50 mrem committed dose equivalent (CDE).</p>	<p><b><u>PD-AU1 (all EALs)</u></b></p> <p>Release of gaseous or liquid radioactivity greater than 2 times the Offsite Dose Calculation Manual (ODCM) limit for 60 minutes or longer.</p>

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<b><u>PD-AA2 (all EALs)</u></b>  UNPLANNED rise in plant radiation levels that impedes plant access required to maintain spent fuel integrity.	<b><u>PD-AU2 (all EALs)</u></b>  UNPLANNED rise in plant radiation levels.
<b><u>PD-HA1*</u></b>  HOSTILE ACTION within the Vehicle Barrier System (VBS) boundary <del>or airborne attack threat within 30 minutes.</del>	<b><u>PD-SU1 (all EALs)</u></b>  UNPLANNED spent fuel pool temperature rise.
<b><u>PD-HA1.2</u></b>  A validated notification from the NRC of an aircraft attack threat within 30 minutes of the site.	<b><u>PD-HU1.3</u></b>  A validated notification from the NRC providing information of an aircraft attack threat.
	<b><u>PD-HU2 (all EALs)**</u></b>  Hazardous event affecting SAFETY SYSTEM equipment necessary for spent fuel cooling.

\* Only the strike-through portion is being deleted.

\*\* For an ISFSI-only facility, the condition addressed by PD-HU2 remains fully addressed by IC EU1.1 (which is being retained in the SONGS emergency plan).

The currently existing SONGS ICs and EALs not listed in Table 1 are being retained. The EAL ICs being deleted include all ICs associated with the categories of abnormal radioactivity release and system malfunction. These two categories apply only to SFP operation. The EAL ICs being retained in the SONGS IOEP are appropriate to address the condition of an ISFSI-only facility (i.e., no fuel stored in the spent fuel pools).

The SONGS ICs and EALs to be retained are listed in Table 2, and include one new EAL being proposed in IC E-HU1, "Damage to a loaded cask CONFINEMENT BOUNDARY," which bounds the deleted ICs. In addition, the new EAL E-HU1.2 provides threshold values for the AREVA ISFSI and the new HOLTEC ISFSI at SONGS, based on the generic AREVA and HOLTEC Technical Specification values provided in the respective Certificates of Compliance.

**Table 2: Initiating Conditions to be Maintained or Added**

<b>ALERT</b>	<b>UNUSUAL EVENT</b>
<b>Independent Spent Fuel Storage Installation (ISFSI)</b>	
<b>PD-HA1</b> HOSTILE ACTION within the VBS boundary.	<b>PD-HU1</b> Confirmed SECURITY CONDITION or threat.

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<p><b>PD-HA1.1</b> A HOSTILE ACTION is occurring or has occurred within the VBS boundary as reported by the SSS [Security Shift Supervisor].</p>	<p><b>PD-HU1.1</b> A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the SSS.</p> <p><b>PD-HU1.2</b> Notification of a credible security threat directed at the site.</p>
<p><b>PD-HA3</b> Other conditions exist which in the judgement of the ISS/ED [Emergency Director] warrant declaration of an ALERT.</p> <p><b>PD-HA3.1</b> Other conditions exist which in the judgment of the ISS/ED indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life threatening risk to site personnel or damage to ISFSI equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guide exposure levels.</p>	<p><b>PD-HU3</b> Other conditions exist which in the judgment of the ISS/ED warrant declaration of an UNUSUAL EVENT.</p> <p><b>PD-HU3.1</b> Other conditions exist which in the judgment of the ISS/ED indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI or indicate a security threat to the ISFSI has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation occurs.</p>
	<p><b>E-HU1</b> Damage to a loaded canister CONFINEMENT BOUNDARY.</p> <p><b>E-HU1.1</b> Damage to a loaded Transnuclear canister CONFINEMENT BOUNDARY as indicated by dose rates greater than EITHER of the following:</p> <ul style="list-style-type: none"> <li>• 520 milliroentgen per hour (mR/hr) (gamma) 3 feet from the surface at the top centerline.</li> <li>• 190 mR/hr (gamma) 3 feet from the surface of the neutron shield at the mid-height centerline.</li> </ul> <p><b>E-HU1.2</b> Damage to a loaded Holtec canister CONFINEMENT BOUNDARY as indicated by dose rates greater than EITHER of the following:</p> <ul style="list-style-type: none"> <li>• 60 mR/hr (gamma + neutron) on the top of the closure lid of a VVM [Vertical Ventilated Module], measured in accordance with the EAL Technical Basis.</li> </ul>

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	<ul style="list-style-type: none"> <li>• 7000 mR/hr (gamma + neutron) on the side of a TRANSFER CASK, measured in accordance with the EAL Technical Basis.</li> </ul>
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The most severe beyond-design-basis accident postulated for SONGS with spent fuel stored within the SFPs involved a highly unlikely sequence of events that cause heat-up of the spent fuel, postulated to occur without heat transfer, such that the zircaloy fuel cladding reaches ignition temperature. Because this limiting, beyond-design-basis scenario is no longer possible due to the transfer of spent fuel from the SFPs to dry cask storage in the onsite ISFSI, SCE assessed the following design-basis accidents associated with the performance of decommissioning activities with all irradiated fuel stored in the SONGS ISFSI: (1) cask drop accident (fuel related accident); (2) radioactive material handling accident (non-fuel related), and (3) accidents initiated by external events. For design-basis accident scenarios (1) and (2), the results of the assessment indicate that the projected radiological doses at the exclusion area boundary are less than the EPA PAGs. The effects of external events, such as fires, floods, wind (including tornados), earthquakes, lightning, and physical security breaches on the SONGS ISFSI that could affect the confinement boundary of the ISFSI remain unchanged from the effects that were considered under the existing PDEP.

As discussed in the June 4, 2015, exemption from certain emergency preparedness requirements (Reference 13), an analysis of the potential radiological impacts of a design-basis accident at SONGS in a permanently defueled condition indicated that any releases beyond the exclusion area boundary were below the EPA PAG exposure levels. The basis for these exemptions has not changed and remains in effect for the proposed emergency plan changes.

Because of the very low risk of consequences to public health and safety resulting from the postulated accidents related to the SONGS ISFSI, no potential emergencies are classified as higher than an Alert, in accordance with the requirements of 10 CFR Part 50, Appendix E, Section IV.C.1, as exempted. Classification of emergencies as no higher than an Alert also maintains consistency with the regulations in 10 CFR 72.32(a)(3), "Classification of accidents."

Based on the NRC staff's review of the SONGS IOEP and associated EAL scheme, as described above, the NRC staff concludes that the planning standard of 10 CFR 50.47(b)(4), as exempted, pertaining to a standard emergency classification and action level scheme, is addressed in an acceptable manner in the SONGS IOEP, considering the permanently shutdown and defueled status of the facility, and the proposed transfer of all remaining spent fuel from the SONGS SFPs to the ISFSI by 2019.

### 3.3.2 SONGS Emergency Response Organization Revision

The existing SONGS PDEP provides for two (2) ERO augmented positions – a Duty ERO Coordinator and a Radiation Control Coordinator. The proposed SONGS IOEP would replace these positions with a Resource Manager. The Resource Manager will assist in assessing the event and coordinating required resources, including public information interface. The Resource Manager will be in contact with the Emergency Director within two hours of classification of an Unusual Event or an Alert. The Resource Manager does not need to physically report to SONGS to perform their responsibilities. In addition, SCE proposes that, for

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a declared emergency involving radiological consequences (E-HU1), a minimum of one person trained in radiological monitoring and assessment will report to the SONGS ISFSI within four hours of the emergency declaration. Supplemental personnel shall report at the discretion of the Emergency Director and/or Resource Manager.

In its evaluation of the proposed changes to the SONGS ERO, the NRC staff considered the accident analyses referenced in the previous section related to the deletion of EALs, either partially or in their entirety, as indicated, as they relate to SFP operation. Specifically, the NRC staff considered the postulated accidents that could occur with all spent fuel moved into the SONGS ISFSI, which pose a very low risk to public health and safety. The staff notes that SCE also continues to commit to maintain the appropriate level of augmented response to an emergency, to include an event involving radiological consequences.

In the Statement of Considerations for the Final Rule for Emergency Planning Licensing Requirements for Independent Spent Fuel Storage Facilities and Monitored Retrievable Storage Facilities (MRS) (60 FR 32430; June 22, 1995), the Commission stated, in part:

For there to be a significant environmental impact resulting from an accident involving the dry storage of spent nuclear fuel, a significant amount of the radioactive material contained within a cask must escape its packaging and enter the biosphere. There are two primary factors that protect the public health and safety from this event. The first is the design requirements for the cask that are imposed by regulation.

These general design criteria place an upper bound on the energy a cask can absorb before the fuel is damaged. No credible dynamic events have been identified that could impart such significant amounts of energy to a storage cask after that cask is placed at the ISFSI.

Additionally, there is a second factor which does not rely upon the cask itself but considers the age of the spent fuel and the lack of dispersal mechanisms. There exists no significant dispersal mechanism for the radioactive material contained within a storage cask.

...

Based on the design limitations, the majority of spent fuel is cooled greater than 5 years. At this age, spent fuel has a heat generation rate that is too low to cause significant particulate dispersal in the unlikely event of a cask confinement boundary failure.

Although the SONGS spent fuel analysis has not been able to identify any design-basis accident that would result in a failure of the confinement barrier for the dry storage casks or the irradiated fuel itself, the SONGS IOEP nonetheless requires augmentation of one person trained in radiological monitoring and assessment, who will report to the station within four hours of the emergency declaration for an event involving radiological consequences.



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The proposed SONGS IOEP also provides that additional personnel resources may be directed to report to the plant to provide support, as needed, to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The supplemental personnel are available from SONGS staff and SCE, and can also be requested from various contractors.

Based on the NRC staff's review of the SONGS IOEP, as described above, the NRC staff concludes that the planning standard of 10 CFR 50.47(b)(2), pertaining to timely augmentation of response capabilities, is addressed in an acceptable manner in the SONGS IOEP, considering the permanently shutdown and defueled status of the facility, and the proposed transfer of all remaining spent fuel from the SFPs to the ISFSI by 2019.

### 3.3.3 *Replacement of the "Shift Manager" Title with the "ISFSI Shift Supervisor" Title*

SCE revised Section 2.1, "On-Shift Positions," in the SONGS IOEP to reassign the following Emergency Director responsibilities from the Shift Manager to the ISFSI Shift Supervisor:

- Event classification and emergency declaration;
- Decision to notify offsite agencies;
- Authorization for the use of EPA-400 emergency exposure controls (emergency worker dose limits that exceed 10 CFR Part 20 occupational exposure limits);
- Management of available station resources;
- Initiation of assessment and mitigative / corrective actions;
- Initiation of onsite protective actions;
- Decision to call for offsite law enforcement, firefighting, or ambulance assistance;
- Augmentation of the emergency response organization as deemed necessary;
- Notification of SCE corporate officers and the SCE corporate communications department, and
- Notification of offsite agencies (State and local government agencies, Marine Corps Base Camp Pendleton and the NRC).

The NRC staff evaluation verified that the retitled position of ISFSI Shift Supervisor is on-shift at the SONGS site 24-hours a day / 7 days a week, and also serves as the senior management position during off-hours. This position assumes overall command and control of event response as the Emergency Director, and is responsible for monitoring conditions and approving all onsite activities. The SONGS IOEP clearly identifies non-delegable responsibilities, along with other designated tasks, for the ISFSI Shift Supervisor. The NRC staff considers this retitling activity to be an administrative change that will not impact the timing or performance of existing emergency response duties.

Based on the NRC staff's review of the SONGS IOEP, as described above, the NRC staff concludes that the requirements of 10 CFR Part 50, Appendix E, Section IV.A, as exempted, pertaining to responsibilities and duties of individuals assigned to the licensee's emergency organization, are addressed in a satisfactory manner, considering the permanently shutdown and defueled status of the facility, and the proposed transfer of all remaining spent fuel from the SONGS SFPs to the ISFSI by 2019.

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#### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments include changes to requirements with respect to installation or use of a facility component located within the protected area and changes to recordkeeping, reporting, or administrative procedures or requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there have been no public comment on such finding, which was published in the *Federal Register* on February 14, 2017 (82 FR 10601). Accordingly, the amendments meet the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10)(ii). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 5.0 STATE CONSULTATION

On November 5, 2017, the NRC staff notified the California State officials, Mr. Ira Schneider, Senior Health Physicist, Medical, Academic and Pharmacy Licensing, Radiologic Health Branch, California Department of Public Health; and Mr. Robert Weisenmiller, California State Liaison Officer, Commissioner, California Energy Commission, regarding the proposed change to approve the SONGS IOEP and associated EAL scheme to reflect the transfer of all spent fuel into dry cas storage at the onsite ISFSI. The California State officials responded on XXXXX XX, 2017, and XXXXX XX, 2017, with no comments.

#### 6.0 CONCLUSION

Based on the its review of the proposed SONGS IOEP and associated EAL scheme, the NRC staff finds that the proposed changes continue to meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50, as exempted. The staff finds continued reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the SONGS facility. In addition, the NRC staff concludes that the SONGS IOEP will be consistent with the emergency planning requirements in 10 CFR Part 72 for an ISFSI not located on the site of an operating reactor. Therefore, the NRC staff concludes that the licensee's proposed changes to the SONGS IOEP and associated EAL scheme in its letter dated December 15, 2016, as supplemented by letter dated May 5, 2017, are acceptable.

The NRC staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there continues to be reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

#### 7.0 REFERENCES

1. Letter from the U.S. Nuclear Regulatory Commission, "Southern California Edison Company, et al, Docket No. 50-206, Issuance of Facility Operating License No.

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DPR-13," dated September 26, 1991 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13309A138).

2. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-206, Request for Exemption from Full Funding Requirements of 10 CFR 50.75(e)(1)(ii), San Onofre Nuclear Generating Station, Unit 1," dated November 30, 1992 (ADAMS Accession No. ML13319B040).
3. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-206, Certification of Permanently Defueled Status, San Onofre Nuclear Generating Station, Unit 1," dated March 8, 1993 (ADAMS Accession No. ML13319B055).
4. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-206, Post Shutdown Decommissioning Activities Report, San Onofre Nuclear Generating Station, Unit 1," dated December 15, 1998 (ADAMS Accession No. ML13319B111).
5. Letter from the U.S. Nuclear Regulatory Commission to Southern California Edison, "Issuance of Amendment No. 155 for Facility Operating License No. DPR-13, San Onofre Nuclear Generating Station, Unit No. 1, Permanently Defueled Technical Specifications (TAC No. M86377)," dated December 28, 1993 (ADAMS Accession No. ML13319B059).
6. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-206, Proposed Decommissioning Plan, San Onofre Nuclear Generating Station, Unit 1," dated November 3, 1994 (ADAMS Accession No. ML13319B073).
7. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-206, Post Shutdown Decommissioning Activities Report, San Onofre Nuclear Generating Station, Unit 1," dated December 15, 1998 (ADAMS Accession No. ML13184A353).
8. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-361 and 50-362, Certification of Permanent Cessation of Power Operations, San Onofre Nuclear Generating Station, Units 2 and 3," dated June 12, 2013 (ADAMS Accession No. ML131640201).
9. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-362, Permanent Removal of Fuel from the Reactor Vessel, San Onofre Nuclear Generating Station, Unit 3," dated June 28, 2013 (ADAMS Accession No. ML13183A391).
10. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket No. 50-361, Permanent Removal of Fuel from the Reactor Vessel, San Onofre Nuclear Generating Station, Unit 2," dated July 22, 2013 (ADAMS Accession No. ML13204A304).

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11. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-361, 50-362, and 50-206, Amendment Applications 226, 273, and 258, Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP) and ISFSI-Only Emergency Action Level Scheme (IOEAL), San Onofre Nuclear Generating Station, Units 1, 2, and 3," dated December 15, 2016 (ADAMS Accession No. ML16355A015).
12. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-361, 50-362, and 50-206, Response to a Request for Additional Information Regarding the License Amendment Request to Change the Emergency Plan and Emergency Action level Scheme to Reflect an ISFSI-Only Configuration, San Onofre Nuclear Generating Station, Units 1, 2, and 3," dated May 5, 2017 (ADAMS Accession No. ML17160A324).
13. Letter from the U.S. Nuclear Regulatory Commission to Southern California Edison, "San Onofre Nuclear Generating Station, Units 1, 2 and 3, and the Independent Spent Fuel Storage Installation – Exemptions From Certain Emergency Planning Requirements (TAC Nos. MF3835, MF3836, and MF3837)," dated June 4, 2015 (ADAMS Accession No. ML15082A143).
14. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, Revision 1, dated November 1980 (ADAMS Accession No. ML040420012).
15. NSIR/DRP-ISG-2, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants," dated May 11, 2015 (ADAMS Accession No. ML14106A057).
16. NMSS/SFST-ISG-16, "Emergency Planning," dated June 14, 2000 (ADAMS Accession No. ML003724570).
17. NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6, dated November 2012 (ADAMS Accession No. ML12326A805).
18. Letter from the U.S. Nuclear Regulatory Commission to NEI, "Technical Evaluation for the Endorsement of NEI 99-01, Revision 6," dated March 28, 2013 (ADAMS Accession No. ML12346A463).
19. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-206, 50-361, 50-362, and 72-041, Emergency Planning Exemption Request, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation," dated March 31, 2014 (ADAMS Accession No. ML14092A332).
20. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-206, 50-361, 50-362, and 72-041, Response to Request for Additional Information Regarding Emergency Planning Exemption Request, San Onofre Nuclear

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Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated September 9, 2014 (ADAMS Accession No. ML14258A003).

21. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, “Docket Nos. 50-206, 50-361, 50-362, and 72-041, Response to Request for Additional Information Regarding Emergency Planning Exemption Request, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated October 2, 2014 (ADAMS Accession No. ML14280A265).
22. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, “Docket Nos. 50-206, 50-361, 50-362, and 72-041, Response to Request for Additional Information Regarding Emergency Planning Exemption Request, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated October 7, 2014 (ADAMS Accession No. ML14287A228).
23. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, “Docket Nos. 50-206, 50-361, 50-362, and 72-041, Response to Requests for Clarification of October 6, 2014, RAI Responses Concerning Emergency Planning Exemption Request, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated October 27, 2014 (ADAMS Accession No. ML14303A257).
24. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, “Docket Nos. 50-206, 50-361, 50-362, and 72-041, Response to Request for Additional Information Regarding Emergency Planning Exemption Request, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated November 3, 2014 (ADAMS Accession No. ML14309A195).
25. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, “Docket Nos. 50-206, 50-361, 50-362, and 72-041, Redacted Version of Response to Request for Additional Information, Proposed Exemptions from Certain Portions of 10 CFR 50.47 and Appendix E, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation,” dated December 15, 2014 (ADAMS Accession No. ML14351A078).
26. Letter from the U.S. Nuclear Regulatory Commission to Southern California Edison, “San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation – Issuance of Amendments Re: Changes to the Emergency Action Level Scheme (TAC Nos. MF3838, MF3839, and MF3840),” dated June 5, 2015 (ADAMS Accession No. ML15105A349).
27. Letter from the U.S. Nuclear Regulatory Commission to Southern California Edison, “San Onofre Nuclear Generating Station, Units 1, 2, and 3, and Independent Spent Fuel Storage Installation – Issuance of Amendments Re: Changes to the Emergency Plan (TAC Nos. MF3841, MF3842, and MF3843),” dated June 5, 2015 (ADAMS Accession No. ML 15126A461).



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28. Letter from Southern California Edison to the U.S. Nuclear Regulatory Commission, "Docket Nos. 50-206, 50-361, 50-362, and 72-41, Revisions 0 and 1 to the Permanently Defueled Emergency Plan and Revisions to the Emergency Plan Implementing Procedures, San Onofre Nuclear Generating Station, Units 1, 2, and 3, and the Independent Spent Fuel Storage Installation," dated July 8, 2015 (ADAMS Accession No. ML15191A391).
29. U.S. Environmental Protection Agency PAG Manual, "Protective Action Guides and Planning Guidance for Radiological Incidents," dated January 2017 (ADAMS Accession No. ML17044A073).

Principal Contributor: Rick Kinard, NSIR

Dated: November , 2017

# **EXHIBIT 11**

[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 50-206, 50-361, and 50-362; NRC-2018-0004]**

**Southern California Edison Company**

**San Onofre Nuclear Generating Station, Units 1, 2, and 3**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Exemption; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing an exemption from the requirement to maintain a specified level of onsite property damage insurance in response to an October 22, 2015, request from the Southern California Edison Company (the licensee). Specifically, the licensee requested that the San Onofre Nuclear Generating Station, Units 1, 2, and 3, be granted an exemption to permit the licensee to reduce its onsite property damage insurance from \$1.06 billion to \$50 million.

**ADDRESSES:** Please refer to Docket ID **NRC-2018-0004** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2018-0004**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System**

**(ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Marlayna Vaaler, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-3178; e-mail: [Marlayna.Vaaler@nrc.gov](mailto:Marlayna.Vaaler@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

The San Onofre Nuclear Generating Station, Units 1, 2, and 3 (SONGS), operated by the Southern California Edison Company (SCE) is located approximately 4 miles south of San Clemente, California. The SONGS, Unit 1, Docket No. 50-206, was a Westinghouse 456 megawatt electric (MWe) pressurized water reactor which was granted Facility Operating License No. DPR-13 on January 1, 1968 (ADAMS Accession

No. ML13309A138), and ceased operation on November 30, 1992 (ADAMS Accession No. ML13319B040). The licensee completed defueling on March 6, 1993 (ADAMS Accession No. ML13319B055), and maintained the unit in SAFSTOR until June 1999, when it initiated decommissioning (ADAMS Accession No. ML13319B111). On December 28, 1993 (ADAMS Accession No. ML13319B059), the NRC approved the Permanently Defueled Technical Specifications for SONGS, Unit 1.

The SCE submitted the proposed Decommissioning Plan for SONGS, Unit 1, on November 3, 1994 (ADAMS Accession No. ML13319B073). As a result of the 1996 revision to the regulations in section 50.82 of title 10 of the *Code of Federal Regulations* (10 CFR), the NRC replaced the requirement for a decommissioning plan with a requirement for a Post Shutdown Decommissioning Activities Report (PSDAR). On August 28, 1996, the SONGS, Unit 1, Decommissioning Plan became the SONGS 1 PSDAR (61 FR 67079; December 19, 1996). On December 15, 1998 (ADAMS Accession No. ML13184A353), SCE submitted an update to the PSDAR to the NRC, as required by 10 CFR 50.82(a)(7), in order to begin planning for the dismantlement and decommissioning of SONGS, Unit 1.

The SONGS, Units 2 and 3, Docket Nos. 50-361 and 50-362, are Combustion Engineering 1127 MWe pressurized water reactors, which were granted Facility Operating Licenses NPF-10 on February 16, 1982, and NPF-15 on November 15, 1982, respectively. In June 2013, pursuant to 10 CFR 50.82(a)(1)(i), the licensee certified to the NRC that as of June 7, 2013, operations had ceased at SONGS, Units 2 and 3 (ADAMS Accession No. ML131640201). The licensee subsequently certified, pursuant to 10 CFR 50.82(a)(1)(ii), that all fuel had been removed from the reactor vessels of both units, and committed to maintaining the units in a permanently defueled status (ADAMS Accession Nos. ML13204A304 and ML13183A391 for Unit 2 and Unit 3, respectively).



Therefore, pursuant to 10 CFR 50.82(a)(2), SCE's 10 CFR part 50 licenses no longer authorize operation of SONGS or emplacement or retention of fuel into the reactor vessels. The licensee is still authorized to possess and store irradiated nuclear fuel. Irradiated fuel is currently being stored onsite in spent fuel pools (SFPs) and in dry casks at an Independent Spent Fuel Storage Installation (ISFSI).

The PSDAR for SONGS, Units 2 and 3, was submitted on September 23, 2014 (ADAMS Accession No. ML14272A121), and the associated public meeting was held on October 27, 2014, in Carlsbad, California (ADAMS Accession No. ML14352A063). The NRC confirmed its review of the SONGS, Units 2 and 3, PSDAR and addressed public comments in a letter dated August 20, 2015 (ADAMS Accession No. ML15204A383). On July 17, 2015, the NRC approved the Permanently Defueled Technical Specifications for SONGS, Units 2 and 3 (ADAMS Accession No. ML15139A390).

## **II. Request/Action**

Pursuant to 10 CFR 50.12, "Specific exemptions," SCE requested an exemption from 10 CFR 50.54(w)(1), by letter dated October 22, 2015 (ADAMS Accession No. ML15299A220). The exemption from the requirements of 10 CFR 50.54(w)(1) would permit the licensee to reduce the required level of onsite property damage insurance from \$1.06 billion to \$50 million.

The regulation at 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance to stabilize and decontaminate the reactor and reactor site in the event of an accident. The onsite insurance coverage must be either \$1.06 billion or whatever amount of insurance is generally available from private sources (whichever is less).

The licensee states that the risk of an incident at a permanently shutdown and defueled reactor is much less than the risk from an operating power reactor. In addition, since reactor operation is no longer authorized at SONGS, there are no events that would require the stabilization of reactor conditions after an accident. Similarly, the risk of an accident that that would result in significant onsite contamination at SONGS is also much lower than the risk of such an event at operating reactors. Therefore, SCE is requesting an exemption from 10 CFR 50.54(w)(1) to reduce its onsite property damage insurance from \$1.06 billion to \$50 million, commensurate with the reduced risk of an incident at the permanently shutdown and defueled SONGS site.

### **III. Discussion**

Under 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) any of the special circumstances listed in 10 CFR 50.12(a)(2) are present.

The financial protection limits of 10 CFR 50.54(w)(1) were established after the Three Mile Island accident out of concern that licensees may be unable to financially cover onsite cleanup costs in the event of a major nuclear accident. The specified \$1.06 billion coverage amount requirement was developed based on an analysis of an accident at a nuclear reactor operating at power, resulting in a large fission product release and requiring significant resource expenditures to stabilize the reactor and ultimately decontaminate and cleanup the site.

These cost estimates were developed based on the spectrum of postulated accidents for an operating nuclear reactor. Those costs were derived from the

consequences of a release of radioactive material from the reactor. Although the risk of an accident at an operating reactor is very low, the consequences onsite and offsite can be significant. In an operating plant, the high temperature and pressure of the reactor coolant system (RCS), as well as the inventory of relatively short-lived radionuclides, contribute to both the risk and consequences of an accident. With the permanent cessation of reactor operations at SONGS and the permanent removal of the fuel from the reactor cores, such accidents are no longer possible. As a result, the reactors, RCS, and supporting systems no longer operate and have no function related to the storage of the irradiated fuel. Therefore, postulated accidents involving failure or malfunction of the reactors, RCS, or supporting systems are no longer applicable.

As described in the PSDAR, SONGS, Unit 1, is being returned to a condition suitable for unrestricted use. According to SCE, there are no structures, systems, or components (SSCs) classified as safety-related remaining at SONGS, Unit 1. Plant dismantlement is complete and nearly all of the SSCs have been shipped offsite for disposal. Only the spent fuel, reactor vessel, and the below-grade portions of some buildings remain onsite. The principal remaining decommissioning activities are soil remediation, compaction, and grading. This is to be completed in conjunction with the future decommissioning of the ISFSI subsequent to shipment offsite of the SONGS stored spent fuel.

The licensee also stated that decommissioning of SONGS, Units 2 and 3, has begun and the nuclear reactors and essentially all associated SSCs in the nuclear steam supply system and balance of plant that supported the generation of power have been retired in place and are being prepared for removal. The SSCs that remain operable are associated with the SFPs and the spent fuel building, are needed to meet other regulatory requirements, or are needed to support other site facilities (e.g., radioactive

waste handling, ventilation and air conditioning, etc.). No remaining active SSCs are classified as safety-related.

During reactor decommissioning, the largest radiological risks are associated with the storage of spent fuel onsite. In its October 22, 2015, exemption request, SCE discusses both design-basis and beyond design-basis events involving irradiated fuel stored in the SFPs. The licensee determined that there are no possible design-basis events at SONGS that could result in an offsite radiological release exceeding the limits established by the U.S. Environmental Protection Agency's (EPA) early-phase Protective Action Guidelines (PAGs) of 1 rem (roentgen equivalent man) at the exclusion area boundary, as a way to demonstrate that any possible radiological releases would be minimal and not require precautionary protective actions (e.g., sheltering in place or evacuation). The staff evaluated the radiological consequences associated with various decommissioning activities, and design basis accidents at SONGS, in consideration of SONGS's permanently shut down and defueled status. The possible design-basis accident scenarios at SONGS have greatly reduced radiological consequences. Based on its review, the staff concluded that no reasonably conceivable design-basis accident exists that could cause an offsite release greater than the EPA PAGs.

The only incident that might lead to a significant radiological release at a decommissioning reactor is a zirconium fire. The zirconium fire scenario is a postulated, but highly unlikely, beyond design-basis accident scenario that involves loss of water inventory from the SFP, resulting in a significant heat-up of the spent fuel, and culminating in substantial zirconium cladding oxidation and fuel damage. The probability of a zirconium fire scenario is related to the decay heat of the irradiated fuel stored in the SFP. Therefore, the risks from a zirconium fire scenario continue to decrease as a function of the time that SONGS has been permanently shut down. The licensee

provided a detailed analysis of hypothetical beyond-design-basis accidents that could result in a radiological release at SONGS in its March 31, 2014, submittal to the NRC (ADAMS Accession No. ML14092A332), as supplemented by letters dated September 9, October 2, October 7, October 27, November 3, and December 15, 2014 (ADAMS Accession Nos. ML14258A003, ML14280A265, ML14287A228, ML14303A257, ML14309A195, and ML14351A078, respectively). One of these beyond design-basis accidents involves a complete loss of SFP water inventory, where cooling of the spent fuel would be primarily accomplished by natural circulation of air through the uncovered spent fuel assemblies. The licensee's analysis of this accident shows that by August 31, 2014, air-cooling of the spent fuel assemblies will be sufficient to keep the fuel within a safe temperature range indefinitely without fuel damage or offsite radiological release.

The Commission has previously authorized a lesser amount of onsite financial protection, based on this analysis of the zirconium fire risk. In SECY-96-256, "Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w)(1) and 10 CFR 140.11," dated December 17, 1996 (ADAMS Accession No. ML15062A483), the staff recommended changes to the power reactor financial protection regulations that would allow licensees to lower onsite insurance levels to \$50 million upon demonstration that the fuel stored in the SFP can be air-cooled. In its Staff Requirements Memorandum to SECY-96-256, dated January 28, 1997 (ADAMS Accession No. ML15062A454), the Commission supported the staff's recommendation that, among other things, would allow permanently shutdown power reactor licensees to reduce commercial onsite property damage insurance coverage to \$50 million when the licensee was able to demonstrate the technical criterion that the spent fuel could be air-cooled if the spent fuel pool was drained of water. The staff has used this technical criterion to grant similar exemptions to other decommissioning



reactors (e.g., Maine Yankee Atomic Power Station, published in the *Federal Register* on January 19, 1999 (64 FR 2920); and Zion Nuclear Power Station, published in the *Federal Register* on December 28, 1999 (64 FR 72700)). These prior exemptions were based on these licensees demonstrating that the SFP could be air-cooled, consistent with the technical criterion discussed above.

In SECY-00-0145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000, and SECY-01-0100, "Policy Issues Related to Safeguards, Insurance, and Emergency Preparedness Regulations at Decommissioning Nuclear Power Plants Storing Fuel in the Spent Fuel Pool," dated June 4, 2001 (ADAMS Accession Nos. ML003721626 and ML011450420, respectively), the NRC staff discussed additional information concerning SFP zirconium fire risks at decommissioning reactors and associated implications for onsite property damage insurance. Providing an analysis of when the spent fuel stored in the SFP is capable of air-cooling is one measure that can be used to demonstrate that the probability of a zirconium fire is exceedingly low. However, the staff has more recently used an additional analysis that bounds an incomplete drain down of the SFP water, or some other catastrophic event (such as a complete drainage of the SFP with rearrangement of spent fuel rack geometry and/or the addition of rubble to the SFP). The analysis postulates that decay heat transfer from the spent fuel via conduction, convection, or radiation would be impeded. This analysis is often referred to as an adiabatic heatup.

The licensee's analyses referenced in its exemption request demonstrates that under conditions where the SFP water inventory has drained completely and only air-cooling of the stored irradiated fuel is available, there is reasonable assurance that after August 2014, the SONGS spent fuel will remain at temperatures far below those associated with a significant radiological release. However, a portion of the air-cooling

analyses credits operation of the normal fuel building ventilation systems because the fuel building structures are robust and offer little potential for natural air exchange with the environment for cooling. Because the normal fuel building ventilation could become unavailable during an initiating event that would lead to complete SFP drainage (i.e., a seismic event), the NRC staff also relied upon the additional time that the fuel in the SONGS SFPs has had to cool since the plant was permanently shutdown in June 2013 during its evaluation of the licensee's exemption request. As discussed in the staff response to a question in SECY-00-0145, "the staff believes that full insurance coverage must be maintained for 5 years or until a licensee can show by analysis that its spent fuel pool is no longer vulnerable to such [a zirconium] fire."

Although the official certifications for permanent cessation of power operations and permanent removal of fuel from the reactor vessel were not submitted until June 2013, the staff notes that SONGS was in an extended outage to address steam generator issues, and neither SONGS, Units 2 nor 3, have produced power since January 2012. This additional storage time for the fuel in the SONGS SFPs has allowed it to cool for greater than the 5 years suggested in SECY-00-0145, which supports the conclusion that zirconium fire risks from the irradiated fuel stored in the SFPs is of negligible concern and exemption from the requested requirements is warranted.

In addition to the air-cooling scenario, the licensee's adiabatic heat-up analyses demonstrate that as of October 12, 2014, there would be at least 17 hours after the loss of all means of cooling (both air and/or water), before the spent fuel cladding would reach a temperature where the potential for a significant offsite radiological release could occur. The licensee states that for this loss of all cooling scenario, 10 hours is sufficient

time for personnel to respond with additional resources, equipment, and capability to restore cooling to the SFPs, even after a non-credible, catastrophic event.

As provided in SCE's letters dated October 7 and December 15, 2014, the licensee furnished information concerning its makeup strategies, in the event of a loss of SFP coolant inventory. The multiple strategies for providing makeup to the SFPs include: using existing plant systems for inventory makeup; an internal strategy that relies on installed fire water pumps and service water or fire water storage tanks; or an external strategy that uses portable pumps to initiate makeup flow into the SFPs through a seismic standpipe and standard fire hoses routed to the SFPs or to a spray nozzle. These strategies will be maintained by a license condition until such time as all fuel has been moved to dry storage in an onsite ISFSI. The licensee states that the equipment needed to perform these actions are located onsite, and that the external makeup strategy (using portable pumps) is capable of being deployed within 2 hours. The licensee also stated that, considering the very low-probability of beyond design-basis accidents affecting the SFPs, these diverse strategies provide defense-in-depth and time to mitigate and prevent a zirconium fire, using makeup or spray into the SFPs before the onset of zirconium cladding rapid oxidation.

In the safety evaluation of the licensee's request for exemptions from certain emergency planning requirements dated June 4, 2015 (ADAMS Accession No. ML15082A204), the NRC staff assessed the SCE accident analyses associated with the radiological risks from a zirconium fire at the permanently shutdown and defueled SONGS site. The NRC staff has confirmed that under conditions where cooling air flow can develop, suitably conservative calculations indicate that by the end of August 2014, the fuel would remain at temperatures where the cladding would be undamaged for an unlimited period. The staff also finds that the additional cooling time provided

for the fuel between January 2012 and the issuance of this exemption provides reasonable assurance that zirconium fire risks from the irradiated fuel stored in the SFPs is of negligible concern. For the very unlikely beyond design-basis accident scenario, where the SFP coolant inventory is lost in such a manner that all methods of heat removal from the spent fuel are no longer available, there will be a minimum of 10 hours from the initiation of the accident until the cladding reaches a temperature where offsite radiological release might occur. The staff finds that 10 hours is sufficient time to support deployment of mitigation equipment, consistent with plant conditions, to prevent the zirconium cladding from reaching a point of rapid oxidation.

The staff's basis as to why it considers \$50 million to be an adequate level of onsite property damage insurance for a decommissioning reactor, once the spent fuel in the SFP is no longer susceptible to a zirconium fire, is provided in SECY-96-256. The staff has postulated that there is still a potential for other radiological incidents at a decommissioning reactor that could result in significant onsite contamination besides a zirconium fire. In SECY-96-256, the NRC staff cited the rupture of a large (~450,000 gallon) liquid radioactive waste storage tank containing slightly radioactive water, causing soil contamination and potential groundwater contamination, as the most costly postulated event to decontaminate and remediate (other than a SFP zirconium fire). The postulated large liquid radwaste storage tank rupture event was determined to have a bounding onsite cleanup cost of approximately \$50 million.

The NRC staff has determined that the licensee's proposed reduction in onsite property damage insurance coverage to a level of \$50 million is consistent with SECY-96-256 and subsequent insurance considerations, resulting from additional zirconium fire risks, as discussed in SECY-00-0145 and SECY-01-0100. In addition, the NRC staff notes that similar exemptions have been granted to other permanently shutdown and

defueled power reactors, upon demonstration that the criterion of the zirconium fire risks from the irradiated fuel stored in the SFP is of negligible concern. As previously stated, the staff concluded that as of October 12, 2014, sufficient irradiated fuel decay time has elapsed at SONGS to decrease the probability of an onsite radiological release from a postulated zirconium fire accident to negligible levels. In addition, the licensee's proposal to reduce onsite insurance to a level of \$50 million is consistent with the maximum estimated cleanup costs for the recovery from the rupture of a large liquid radwaste storage tank. Finally, the staff notes that in accordance with the SONGS PSDAR, all spent fuel will be removed from the SFPs and moved into dry storage at an onsite independent spent fuel storage installation (ISFSI) by the end of 2019, and the probability of an initiating event that would threaten pool integrity occurring before that time is extremely low, which further supports the conclusion that the zirconium fire risk is negligible.

*The Exemption is Authorized by Law*

In accordance with 10 CFR 50.12, the Commission may grant exemptions from the regulations in 10 CFR part 50 as the Commission determines are authorized by law. The NRC staff has determined that granting the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, Section 170, as amended, other laws, or the Commission's regulations, which require licensees to maintain adequate financial protection. Therefore, the proposed exemption for SONGS from the onsite property damage insurance requirements of 10 CFR 50.54(w)(1) is authorized by law.

*The Exemption Will Not Present an Undue Risk to Public Health and Safety*

The onsite property damage insurance requirements of 10 CFR 50.54(w)(1) were established to provide financial assurance that following a significant nuclear incident,



onsite conditions could be stabilized and the site decontaminated. The requirements of 10 CFR 50.54(w)(1) and the existing level of onsite insurance coverage for SONGS are predicated on the assumption that the reactor is operating. However, SONGS is a permanently shutdown and defueled facility. The permanently defueled status of the facility has resulted in a significant reduction in the number and severity of potential accidents, and correspondingly, a significant reduction in the potential for and severity of onsite property damage. The proposed reduction in the amount of onsite insurance coverage does not impact the probability or consequences of potential accidents. The proposed level of insurance coverage is commensurate with the reduced risk and reduced cost consequences of potential nuclear accidents at SONGS. Therefore, the NRC staff concludes that granting the requested exemption will not present an undue risk to the health and safety of the public.

*The Exemption is Consistent with the Common Defense and Security*

The proposed exemption would not eliminate any requirements associated with physical protection of the site and would not adversely affect SCE's ability to physically secure the site or protect special nuclear material. Physical security measures at SONGS are not affected by the requested exemption. Therefore, the proposed exemption is consistent with the common defense and security.

*Special Circumstances*

Under 10 CFR 50.12(a)(2)(ii), special circumstances are present if the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of 10 CFR 50.54(w)(1) is to provide reasonable assurance that adequate funds will be available to stabilize conditions and cover onsite cleanup costs

associated with site decontamination, following an accident that results in the release of a significant amount of radiological material. Because SONGS is permanently shut down and defueled, it is no longer possible for the radiological consequences of design-basis accidents or other credible events at SONGS to exceed the limits of the EPA PAGs at the exclusion area boundary. The licensee has performed site-specific analyses of highly unlikely, beyond-design-basis zirconium fire accidents involving the stored irradiated fuel in the SFPs. The analyses show that after October 12, 2014, the probabilities of such an accident are minimal. The NRC staff's evaluation of the licensee's analyses confirm this conclusion.

The NRC staff also finds that the licensee's proposed \$50 million level of onsite insurance is consistent with the bounding cleanup and decontamination cost, as discussed in SECY-96-256, to account for hypothetical rupture of a large liquid radwaste tank at the SONGS site, should such an event occur. The staff notes that the SONGS technical specifications provide controls for unprotected outdoor liquid storage tanks to limit the quantity of radioactivity contained in these tanks, in the event of an uncontrolled release of the contents of these tanks. Therefore, the staff concludes that the application of the current requirements in 10 CFR 50.54(w)(1) to maintain \$1.06 billion in onsite insurance coverage is not necessary to achieve the underlying purpose of the rule for the permanently shutdown and defueled SONGS reactors.

Under 10 CFR 50.12(a)(2)(iii), special circumstances are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. The NRC staff concludes that if the licensee was required to continue to maintain an onsite insurance level of \$1.06 billion, the associated insurance premiums would be in excess of those necessary and

commensurate with the radiological contamination risks posed by the SONGS site now that it has entered decommissioning. In addition, such insurance levels would be significantly in excess of other decommissioning reactor facilities that have been granted similar exemptions by the NRC.

The NRC staff finds that compliance with the existing rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted and are significantly in excess of those incurred by others similarly situated. Therefore, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist for the proposed exemption from the onsite property damage insurance requirements of 10 CFR 50.54(w)(1).

#### *Environmental Considerations*

The NRC approval of an exemption to insurance or indemnity requirements belongs to a category of actions that the Commission, by rule or regulation, has declared to be a categorical exclusion, after first finding that the category of actions does not individually or cumulatively have a significant effect on the human environment. Specifically, the exemption is categorically excluded from further analysis under 10 CFR 51.22(c)(25). Pursuant to 10 CFR 51.22(c)(25), the granting of an exemption from the requirements of any regulation in Chapter I of 10 CFR is a categorical exclusion provided that (i) there is no significant hazards consideration; (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological

accidents; and (vi) the requirements from which an exemption is sought are among those identified in 10 CFR 51.22(c)(25)(vi).

The NRC staff has determined that approval of the exemption request involves no significant hazards consideration because reducing the licensee's onsite property damage insurance at the decommissioning San Onofre Nuclear Generating Station, Units 1, 2, and 3, does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. The exempted financial protection regulation is unrelated to the operation of SONGS.

Accordingly, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and no significant increase in individual or cumulative public or occupational radiation exposure. The exempted regulation is not associated with construction, so there is no significant construction impact. The exempted regulation does not concern the source term (i.e., potential amount of radiation involved an accident) or accident mitigation; therefore, there is no significant increase in the potential for, or consequences from, a radiological accident. In addition, there would be no significant impacts to biota, water resources, historic properties, cultural resources, or socioeconomic conditions in the region. The requirement for onsite property damage insurance may be viewed as involving surety, insurance, or indemnity matters in accordance with 10 CFR 51.22(c)(25)(vi).

Therefore, pursuant to 10 CFR 51.22(b) and 10 CFR 51.22(c)(25), no environmental impact statement or environmental assessment need be prepared in connection with the approval of this exemption request.

#### **IV. Conclusions**

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption from 10 CFR 50.54(w)(1) is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. In addition, special circumstances are present. Therefore, the Commission hereby grants SCE an exemption from the requirements of 10 CFR 50.54(w)(1), to permit the licensee to reduce its onsite property damage insurance to a level of \$50 million.

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 5<sup>th</sup> day of January, 2018.

For the Nuclear Regulatory Commission.

***/RA/***

Gregory Suber, Deputy Division Director,  
Division of Decommissioning, Uranium Recovery  
and Waste Programs,  
Office of Nuclear Material Safety and Safeguards.



**SUBJECT: EXEMPTION FROM THE REQUIREMENTS IN SECTION 54(w)(1) OF  
TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* (10  
CFR), CONCERNING ONSITE PROPERTY DAMAGE INSURANCE  
(CAC NOS. L53097, L53098, AND L53099)**

**[DOCUMENT DATE] January 5, 2017 (FRN)**

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# **EXHIBIT 12**



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# **NRC Webinar**

## **San Onofre Nuclear Generating Station**

### **Final Enforcement Action**

#### **and Follow-up Inspection Preliminary Results**

**March 25, 2019**  
**NRC Region IV, Arlington, TX**

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## **NRC Region IV Presenters**

- Linda Howell, Deputy Director  
Division of Nuclear Materials Safety
- Lee Brookhart, Senior Inspector, Team Leader  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

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## Agenda

Topic	Participants
Opening Remarks	Linda Howell
Final Enforcement Action	Linda Howell
NRC Follow up Inspection Activities	Lee Brookhart
Path Forward	Linda Howell
Questions and Answers/Discussion	All Webinar Participants Michael Bloodgood, Facilitator
Closing Remarks	Linda Howell

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- Only in the event of technical difficulties with the webinar, a telephone bridge line will be used:
    - Bridge Number: (800) 369-1771
    - Passcode: 7382934
    - Link to NRC Spotlight web page:  
<https://www.nrc.gov/reactors/operating/ops-experience/songs-spec-insp-activities-cask-loading-misalignment.html>
-

## **Predecisional Enforcement Conference**

- Held on January 24, 2019
- Discussed two apparent violations, safety significance, root causes, and corrective actions

## **SIGNIFICANCE = “Severity Level”**

**SEVERITY LEVEL – I**  
(most significant regulatory concern)

**SEVERITY LEVEL – II**  
(very significant regulatory concern)

**SEVERITY LEVEL – III**  
(significant regulatory concern)



**SEVERITY LEVEL – IV**  
(less significant concern, but more than minor)

## Civil Penalty Assessment

- NRC Enforcement Policy Considers:
  - Enforcement history
  - Whether the licensee identified the issue
  - Adequacy of corrective actions

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## **Violation No. 1**

### **Loss of Redundant Drop Protection Features**

10 CFR 72.212(b)(3) requires, in part, that each cask used by the general licensee conforms to the terms, conditions, and specifications of a Certificate of Compliance. The spent fuel storage system's Certificate of Compliance requires that the canister be lifted and carried with redundant drop protection features to prevent uncontrolled lowering of the load.

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## **Violation No. 1**

### **Loss of Redundant Drop Protection Features**

- Safety Level Violation
- \$116,000 Penalty