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10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: **Docket No. 50-361**
Amendment Application Number 263
Steam Generator Program
San Onofre Nuclear Generating Station, Unit 2

References: (1) Letter from Mr. Elmo E. Collins (USNRC) to Mr. Peter T. Dietrich (SCE), dated March 27, 2012, Confirmatory Action Letter 4-12-001, San Onofre Nuclear Generating Station, Units 2 and 3, Commitments to Address Steam Generator Tube Degradation (ML12087A323)

(2) Letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263)

(3) Letter from Mr. Richard J. St. Onge to NRC, dated March 14, 2013, Operational Assessment for 100% Power Case Regarding Confirmatory Action Letter Response, San Onofre Nuclear Generating Station, Unit 2 (ML13074A793)

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Southern California Edison (SCE) hereby submits license amendment application 263 to operating license NPF-10 for San Onofre Nuclear Generating Station (SONGS) Unit 2. Amendment Application 263 consists of the enclosed Proposed Change Number (PCN-602).

The proposed amendment requests that Technical Specification 5.5.2.11.b.1 be revised to add a footnote to require that compliance with the steam generator structural integrity performance criterion (SIPC) be demonstrated up to 70% Rated Thermal Power (2406.6 megawatts thermal) and that Facility Operating License Condition 2.C(1) "Maximum Power Level" be revised to add a footnote to restrict operation of SONGS Unit 2 to no more than 70% Rated Thermal Power for the SONGS Unit 2, Cycle 17.

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The proposed changes are in support of re-start of SONGS Unit 2 following identification of steam generator tube wear during the SONGS Unit 2, Cycle 17 refueling and steam generator inspection outage. The proposed changes will maintain consistency for Cycle 17 between Technical Specification 5.5.2.11.b and the maximum power level in License Condition 2.C(1). This change does not relieve SCE of any of its obligations to demonstrate and maintain the integrity and operability of the SONGS steam generator tubes for the power level at which the reactor will operate. Separately from this license amendment request, SCE must also demonstrate that its actions are consistent with the NRC Confirmatory Action Letter (CAL) (Reference 1) which provides the necessary actions for re-start.

The Enclosure to this letter provides a technical and regulatory evaluation of the proposed amendment, including a No Significant Hazards Consideration analysis for the proposed amendment. SCE has determined that there are no significant hazards considerations associated with the proposed amendment and that the change is exempt from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9).

In order to support the planned SONGS Unit 2 return to service, SCE requests approval of this License Amendment Request (LAR) no later than May 24, 2013. SCE requests the license amendment be made effective upon NRC issuance.

The LAR applies to SONGS Unit 2 Cycle 17. This will allow SCE to identify long-term corrective actions, including identification of a long-term power level. Prior to Unit 2 Cycle 18 operation, SCE commits to submit and obtain NRC approval of a License Amendment Request for long-term operation of Unit 2. In addition, as discussed in the enclosure, SCE commits for Unit 2 Cycle 17 to revising the time requirement for providing the Technical Specification 5.7.2.c Special Report to 60 days.

On March 14, 2013, SCE submitted an Operational Assessment (OA) for operation of SONGS Unit 2 at 100% power (Reference 3). Due to the time needed for the NRC staff to review the OA for 100% power, it is possible that the staff's review may not be complete prior to May 24, 2013. As a result, SCE is submitting this license amendment request to allow for the timely restart of SONGS Unit 2.

There are two regulatory commitments in this application in addition to those previously made in SCE's response to the CAL (Reference 2).

In accordance with 10 CFR 50.91, SCE is notifying the State of California of this License Amendment Request by transmitting a copy of this letter and its enclosure to the designated State Official.

The LAR incorporates by reference a number of documents. The declaration provided below also applies to the following documents:

- Letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263) including Enclosure 1 and Enclosure 2 (excluding Attachments 1-5)

- Letter from Mr. Richard J. St. Onge to NRC, dated November 28, 2012, Confirmatory Action Letter Response – Proprietary Documents, San Onofre Nuclear Generating Station, Unit 2 (ML12348A287) and Enclosures 5 and 6

- Letter from Mr. Richard J. St. Onge to NRC, dated April 2, 2013, Revised Response to Request for Additional Information (RAI 11), Revision 1, Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2

- Letter from Mr. Richard J. St. Onge to NRC, dated January 18, 2013, Response to Request for Additional Information (RAI 12) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13022A408)

- Letter from Mr. Richard J. St. Onge to NRC, dated April 2, 2013, Response to Request for Additional Information (RAI 13), Revision 1, Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2

- Letter from Mr. Richard J. St. Onge to NRC, dated January 29, 2013, Response to Request for Additional Information (RAI 14) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13032A009)

Should you have any questions, or require additional information, please contact Mr. Mark Morgan, Licensing Lead, at (949) 368-6745.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 04/05/2013
(Date)

Sincerely,

Enclosures:
PCN-602 with Attachments
1- List of Regulatory Commitments
2- Existing Facility Operating License Pages, SONGS Unit 2
3- Retyped Facility Operating License Pages SONGS Unit 2
4- Clean Facility Operating License Pages, SONGS Unit 2

cc: A. T. Howell III, Regional Administrator, NRC Region IV
R. Hall, NRC Project Manager, SONGS Units 2 and 3
B. Benney, NRC Project Manager, SONGS Units 2 and 3
G. G. Warnick, NRC Senior Resident Inspector, SONGS Units 2 and 3
S. Y. Hsu, California Department of Public Health, Radiologic Health Branch

ENCLOSURE

EVALUATION OF THE PROPOSED CHANGE

PCN-602

Steam Generator Program

1.0 SUMMARY DESCRIPTION

Southern California Edison Company (SCE) is proposing a temporary change to the San Onofre Nuclear Generating Station (SONGS) Unit 2 Facility Operating License.

The proposed changes request Technical Specification 5.5.2.11.b.1 be revised to require that compliance with the steam generator structural integrity performance criterion (SIPC) be demonstrated up to 70% Rated Thermal Power (2406.6 megawatts thermal) and that Facility Operating License Condition 2.C(1) "Maximum Power Level" be revised to restrict operation of SONGS Unit 2 to no more than 70% Rated Thermal Power for the SONGS Unit 2 Cycle 17. This is consistent with the power level in Commitment 1 in the SONGS Confirmatory Action Letter response (Reference 6.1).

This change does not relieve SCE of any of its obligations to demonstrate and maintain the integrity and operability of the SONGS steam generator tubes for the power level at which the reactor will be authorized to operate.

2.0 DETAILED DESCRIPTION

Existing Technical Specification 5.5.2.11.b.1 states that steam generator tubes shall retain structural integrity over the "full range of normal operating conditions" including retaining a safety factor of 3.0 against burst under "normal steady state full power operation" primary-to-secondary pressure differential.

SCE proposes the following footnote be added at the end of Technical Specification 5.5.2.11.b.1:

> *For the duration of Unit 2, Cycle 17, the terms "full range of normal operating conditions" and "normal steady state full power operation" shall be based upon the steam generators being operated under conditions associated with reactor core power levels up to 70% of Rated Thermal Power (2406.6 megawatts thermal). During Cycle 17, Unit 2 will not be operated above this power level.

Existing Facility Operating License Condition 2.C(1) states the following:

(1) Maximum Power Level

> 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).

SCE proposes the following footnote be added at the end of Facility Operating License Condition 2.C(1):

> * For the duration of Unit 2, Cycle 17, SCE is authorized to operate the facility at a reactor core power level not in excess of 70% of Rated Thermal Power (2406.6 megawatts thermal).

3.0 TECHNICAL EVALUATION

3.1 Background

On January 31, 2012, SONGS Unit 2 was in a refueling and steam generator inspection outage, and SONGS Unit 3 was in Mode 1 operating at 100% power. A leak was detected in a SONGS Unit 3 steam generator. SCE operators promptly shut down the unit in accordance with plant operating procedures. The leak resulted in a small radioactive release to the environment that was well below the allowable federal limits. The steam generator tube wear that caused the SONGS Unit 3 steam generator tube leak was the result of tube-to-tube interaction. This type of wear was confirmed to exist in a number of other tubes in the same region in both SONGS Unit 3 steam generators. Subsequent inspections of the SONGS Unit 2 steam generators identified this type of wear also existed in a pair of tubes (one contact location) in SONGS Unit 2 steam generator E-089. On March 27, 2012, the NRC issued a Confirmatory Action Letter (CAL) to SCE describing actions that the NRC and SCE agreed will be completed prior to returning SONGS Units 2 and 3 to service (Reference 6.2).

SCE's response to the CAL, which provides the basis for the conclusion that steam generator tube integrity will be maintained assuming operation up to 70% Rated Thermal Power, is provided in a letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263) (Reference 6.1). That document is being reviewed separately by the NRC as part of the CAL process. Final determination on the adequacy of the actions being taken to support operation at reduced power will be made pursuant to the CAL restart approval process.

The proposed changes maintain consistency for Cycle 17 between Technical Specification 5.5.2.11.b.1 and the maximum power level in License Condition 2.C(1). Following NRC approval of this change, Technical Specification 5.5.2.11 will continue to require that steam generator tube integrity be retained over the range of power levels which the plant will be allowed operate.

On March 14, 2013, SCE submitted an OA for operation of SONGS Unit 2 at 100% power (Reference 6.3). Due to the time needed for the NRC staff to review the OA for 100% power, it is possible that the staff's review may not be complete prior to May 24,

2013. As a result, SCE is submitting this license amendment request to allow for the timely restart of SONGS Unit 2.

3.2 Discussion

The proposed changes require that compliance with the SIPC be demonstrated up to 70% Rated Thermal Power (2406.6 megawatts thermal) for SONGS Unit 2, Cycle 17 and that reactor core thermal power level be limited to 70% Rated Thermal Power during Cycle 17. The duration of one cycle was chosen to allow SCE to identify long term corrective actions, including identification of a long-term maximum power level, and obtain necessary NRC approval for those actions.

3.2.1 Proposed License and Technical Specification Changes

The current Technical Specification 5.5.2.11 requires that steam generator tube structural integrity be retained over the "full range of normal operating conditions" and that a safety factor of 3.0 against burst be retained for primary-to-secondary pressure differential "under normal steady state full power operation." The proposed change provides a footnote that states that for Cycle 17 the terms "full range of normal operating conditions" and "normal steady state full power operation" refer to steam generator conditions associated with operation up to and including 70% Rated Thermal Power.

The proposed change to Facility Operating License Condition 2.C(1) reduces the maximum power level for operation of SONGS Unit 2 for the next refueling cycle (Cycle 17). This proposed change is consistent with the power level commitment in Reference 6.1.

The proposed changes maintain consistency between Technical Specification 5.5.2.11 and the maximum power level in License Condition 2.C(1) for Cycle 17. All other aspects of the Steam Generator Program, including methods and acceptance criteria used to perform operational assessment and demonstrate steam generator tube integrity, are unaffected by the proposed changes.

3.2.2 Impact of Reduced Power Operations on Safety Analysis

The justification for safe operation at 70% Rated Thermal Power is provided in a letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263) (Reference 6.1). As part of the NRC review of SCE's response to the CAL, the NRC has provided several requests for additional information (RAIs). SCE has submitted response to most of those RAIs, including RAIs 11 through 14 that pertain to impact of operation at 70% rated Thermal Power on plant systems and the safety analysis (References 6.4 through 6.7). These RAI responses are being reviewed separately by

the NRC as part of the CAL process and the conclusions are summarized here. These responses are also incorporated by reference into this LAR.

The response to RAI 11 (Reference 6.4) evaluates the impacts of operation at 70% Rated Thermal Power on the Unit 2, Cycle 17 core design and reload analysis, including the Updated Final Safety Analysis Report (UFSAR) Chapter 15 safety analyses. Power levels evaluated range from 50% to 100% which bound 70% power operation. The areas evaluated were:

- Safety Analysis Methodology - The NRC approved safety analysis methods, as described in TS 5.7.1.5, are used to establish the core operating limits specified in the Core Operating Limits Report (COLR) which encompass from Mode 6 up to Mode 1 operation at the Rated Thermal Power. Therefore, operating at the 70% Rated Thermal Power level is within the scope of SCE safety analysis methodology. No change to the safety analysis methodology is required for reduced power operation.

- Safety Analysis - All safety and reload analyses were assessed for impact. The reload and safety analyses determined to be impacted by reduced power operation were re-analyzed. The conclusions of the reload analyses, including safety analyses, for reduced power operation are as follows: (1) All safety analyses results meet the established acceptance criteria, and (2) The radiological dose consequences for all safety analyses remain bounded by the dose consequences reported in the UFSAR. This assessment is summarized in Table 1 of RAI 11 (Reference 6.4).

- Technical Specifications - A review has been performed to determine the impact of extended power operation at 70% Rated Thermal Power on SONGS Unit 2 Technical Specifications (TS). The review addressed the Limiting Condition for Operation (LCO), applicability, action statements, and surveillances. With the exception of the proposed change to Technical Specification 5.5.2.11, the review determined that the current TS are applicable to extended power operation at 70% Rated Thermal Power, and that no other TS changes are required.

- Impact Assessment for Technical Specification Surveillance Requirements - The Technical Speciation surveillance requirements were evaluated for the impacts of reduced power operation. Two surveillance procedures related to monitoring Reactor Coolant System (RCS) flow that had been required to be performed only above 85% Rated Thermal Power were revised to require performance at 70% Rated Thermal Power. No other surveillances were identified to be impacted by plant operation at 70% Rated Thermal Power.

This assessment determined operation at reduced power is acceptable with respect to SONGS Unit 2, Cycle 17 reload core design and safety analysis. All Technical Specification LCO's, applicability, action statements, and surveillance requirements under the reactor core design and monitoring program normally performed at or above

70% Rated Thermal Power will be performed with the plant operating at approximately 70% Rated Thermal Power.

It was identified that one Technical Specification reporting requirement is affected by the length of the initial proposed operating period. Technical Specification 5.7.2.c requires that "A report shall be submitted within 180 days after the initial entry into Mode 4 following completion of an inspection performed in accordance with the Specification 5.5.2.11." Given the initial operating period is 150 days and the uncertain length of subsequent operating periods, SCE commits that for Unit 2 Cycle 17 SCE will provide the report required by Technical Specification 5.7.2.c within 60 days after the initial entry into Mode 4 following completion of an inspection performed in accordance with the Specification 5.5.2.11.

The response to RAI 12 (Reference 6.5) evaluates Reactor Coolant System (RCS) flow uncertainty as affected by power operation at 70% Rated Thermal Power. This assessment performed an RCS flow uncertainty analysis for extended operation at 70% Rated Thermal Power. The assessment determined that the increase in secondary calorimetric power uncertainty and RCS flow uncertainties are accounted for in the overall uncertainty analysis required by the reload safety analyses as detailed in the response to RAI 11.

The response to RAI 13 (Reference 6.6) evaluates how the existing Emergency Core Cooling System (ECCS) analysis accounts for the changes to the steam generator heat transfer characteristics resulting from the installation of the new steam generators and operation at 70% Rated Thermal Power. RAI 13 documents that operation at 70% Rated Thermal Power remains bounded by the current SONGS Unit 2 ECCS performance Analyses of Record (AORs) for Large Break Loss-of-Coolant Accident (LBLOCA), Small Break Loss-of-Coolant Accident (SBLOCA), and post Loss-of-Coolant Accident (LOCA) Long Term Cooling (LTC).

The response to RAI 14 (Reference 6.7) dispositions the mechanical and instrumentation and control (I&C) design evaluations performed to support operation at 70% Rated Thermal Power. These evaluations are in addition to the evaluations addressed in RAIs 11, 12 and 13. The mechanical design evaluations assessed the reactor vessel internals (RVI) analyses, reactor coolant system (RCS) structural analyses, loss of coolant accident (LOCA) hydraulic blowdown loads analyses, and RCS natural circulation analyses of record (AORs). The results bound and support the planned operation of Unit 2 at 70% power with approximately 3% Steam Generator Tube Plugging. The I&C design evaluations assessed potentially impacted systems including the main steam, main feedwater, and steam generator blowdown flow instruments, the secondary calorimetric function of the core operating limits supervisory system (COLSS), the steam generator narrow-range (NR) water level instruments, the plant protection system (PPS) setpoints, the steam bypass control system (SBCS), the digital feedwater control system (DFWCS), and the pressurizer level setpoint and RCS reference temperature (T_{REF}) programs. The results and conclusions of the evaluations

were that power operation at 70% Rated Thermal Power did not significantly affect the systems and programs.

3.2.3 Steam Generator Tube Integrity

The proposed changes will maintain consistency between the power level referenced in Technical Specification 5.5.2.11 for assessments of steam generator tube integrity and the maximum power level in License Condition 2.C(1) for Cycle 17. The proposed changes will ensure that steam generator tube integrity is demonstrated for the maximum power level specified in License Condition 2.C(1).

The impact of operation at 70% Rated Thermal Power on steam generator tube integrity was provided in Reference 6.1 (ADAMS Package No. 122850320) . The Operational Assessments provided in Reference 1 demonstrate that limiting SONGS Unit 2 power to 70% eliminates the thermal hydraulic conditions that cause fluid elastic instability (FEI) in the SONGS Unit 2 steam generators by reducing the steam velocity and void fraction. Further, at 70% Rated Thermal Power the SONGS Unit 2 steam generators will operate within an envelope of steam velocity and void fraction that has proven successful in the operation of similar steam generators. Operational Assessments also demonstrate that limiting power to 70% provides assurance that loss of tube integrity due to FEI will not occur. The impact of operation at 70% Rated Thermal Power on steam generator tube integrity is being reviewed separately as part of the CAL process.

3.2.4 Risk Insights

Based on a review of the evaluations performed by station personnel on the potential operational, engineering analyses, and system impacts of operating at 70% versus 100% Rated Thermal Power, SCE has concluded that reduced power operations would have no quantifiable adverse impact on plant systems performance, operations response, or the frequencies of initiating events. Therefore, no quantifiable adverse impact on plant risk was identified in terms of the core damage frequency (CDF) or large early release frequency (LERF) if the plant is operating at 70% versus 100% Rated Thermal Power for the operating cycle.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

There are no General Design Criteria (GDC) in 10 CFR Part 50 Appendix A that directly address maximum power level. GDC 10, 11, 12, 13, and 14, of 10 CFR Part 50, Appendix A, define requirements for reactivity and power control. The evaluations discussed in Section 3.2 above demonstrate compliance with these GDC over the expected range of operating conditions, including the entire proposed power operating range. Therefore, the proposed change to Facility Operating License Condition 2.C(1)

to limit power operation to 70% Rated Thermal Power does not affect the ability of SONGS Unit 2 to comply with these GDC.

General Design Criteria (GDC) 30, 31 and 32 of 10 CFR Part 50, Appendix A define requirements for the reactor coolant pressure boundary (RCPB) with respect to structural integrity. Steam generator tubes and associated components, such as plugs, must be capable of maintaining reactor coolant inventory and pressure. Technical Specification requirements for steam generator tubes and associated components ensure that these GDC are met by ensuring steam generator tube integrity.

The proposed amendment requests that Technical Specification 5.5.2.11.b.1 be revised to require that compliance with the steam generator tube structural integrity performance criterion (SIPC) be demonstrated up to 70% Rated Thermal Power (2406.6 megawatts thermal) for SONGS Unit 2, Cycle 17, and requests that License Condition 2.C(1) be revised to limit reactor core thermal power level to 70% Rated Thermal Power during Cycle 17. Thus, steam generator tube integrity will be required to be assessed at the maximum power level specified in License Condition 2.C(1).

The operational assessments that demonstrate steam generator tube integrity at 70% Rated Thermal Power are provided in a letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263) (Reference 6.1) and are being reviewed separately by the NRC as part of the NRC's review of the Confirmatory Action Letter (CAL) response. Those documents are incorporated by reference.

Therefore, the proposed changes to License Condition 2.C(1) and Technical Specification 5.5.2.11.b.1 will not adversely affect compliance with the GDC on the RCPB.

4.2 No Significant Hazards Consideration

The proposed amendment requires that compliance with the steam generator structural integrity performance criterion (SIPC) be demonstrated up to 70% Rated Thermal Power (2406.6 megawatts thermal) for SONGS Unit 2 Cycle 17 and amends License Condition 2.C(1) to specify a maximum power level of SONGS Unit 2 to 70% during Cycle 17.

The proposed changes are in support of re-start of SONGS Unit 2 following corrective actions taken to address steam generator tube wear identified during the SONGS Unit 2 Cycle 17 refueling and steam generator inspection outage. The proposed changes maintain consistency between Technical Specification 5.5.2.11 and the maximum power level in License Condition 2.C(1), in that steam generator tube integrity must be demonstrated assuming operation up to the maximum power level specified in the license.

The basis for operation of SONGS at 70% Rated Thermal Power, which is already authorized by the SONGS Unit 2 operating license, is provided in a letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263)[1]. The impact on steam generator tube integrity is evaluated in the operational assessments provided in that letter and is being reviewed separately by the NRC.

SCE has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment", as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change would reduce the power level for San Onofre Nuclear Generating Station (SONGS) Unit 2 for Cycle 17.

The proposed changes do not affect the probability of any accident initiators because there is no adverse effect on plant operations or plant conditions. The proposed revisions will require that tube integrity will be demonstrated up to 70% Rated Thermal Power and that operation of the SONGS Unit 2 steam generators will be limited to a maximum reactor power level of 70%. As a result, the change will continue to ensure that tube integrity is retained over the range of power levels at which the plant will operate. The proposed change to reduce the power level will not affect the probability of any accident initiators because the only effect on plant operations is to lower the allowable power level. Operation at reduced power is acceptable under the current licensing basis and operation of the plant will remain bounded by the assumptions of the analyses of accidents previously evaluated in the UFSAR.

The proposed changes do not create any new mode of plant operation. The proposed changes do not result in a change to any design function nor do the proposed changes affect any analysis that verifies the capability of a system, structure or component to perform a design function.

The proposed changes maintain consistency between the conditions for which the structural integrity performance criteria (SIPC) must be demonstrated with the maximum power levels at which SONGS Unit 2 will be authorized to operate. SCE will be required to perform operational assessments for steam generator tube integrity as required by the current Technical Specifications for the range of power levels within which SONGS Unit 2 will operate during Cycle 17. The proposed changes do not affect the tube performance criteria for those assessments with the exception that they will be applied over a range of

conditions up to and including 70% Rated Thermal Power. Therefore the proposed changes do not involve a significant increase in the probability or consequences of a steam generator tube failure under normal or postulated accident conditions.

As part of the NRC review of SCE's response to the CAL[1], the NRC provided several Requests for Additional Information (RAIs). The response to RAI 11[2] assessed safety analysis methods, analysis acceptance criteria, radiological dose consequences, applicability of Technical Specifications Limiting Conditions for Operation, applicability, action statements, surveillances and impact on performance of Surveillance Requirements. The assessment determined operation at reduced power is acceptable with respect to SONGS Unit 2, Cycle 17 reload core design and safety analysis.

The assessment that evaluated how Reactor Coolant System (RCS) flow uncertainty is affected by operation at 70% Rated Thermal Power was provided in the response to RAI 12[3]. This assessment determined that the increase in secondary calorimetric power uncertainty and RCS flow uncertainties are accounted for in the overall uncertainty analysis required by the reload safety analyses as detailed in the response to RAI 11.

The assessment that evaluated how the existing Emergency Core Cooling System (ECCS) analysis accounts for the changes to the steam generator heat transfer characteristics resulting from the installation of the new steam generators was provided in the response to RAI 13[4]. The results and conclusions of this evaluation was that operation at 70% Rated Thermal Power remains bounded by the current SONGS Unit 2 ECCS performance Analyses of Record (AOR) for Large Break Loss- of-Coolant Accident (LBLOCA), Small Break Loss- of-Coolant Accident (SBLOCA), and post Loss-of-Coolant Accident (LOCA) Long Term Cooling (LTC).

The assessment that evaluated how the mechanical and instrumentation and control (I&C) design evaluations performed to support operation at 70% Rated Thermal Power was provided in the response to RAI 14[5]. These evaluations are in addition to the evaluations addressed in RAIs 11, 12 and 13. The results and conclusions of the RAI 14 evaluations were that power operation at 70% Rated Thermal Power will either remain bounded or will not significantly affect the associated systems and programs.

As a result, operation at 70% Rated Thermal Power does not result in a significant increase in the probability or consequences of a previously evaluated accident.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed changes do not require a change in any plant systems, structures or components or the method of operating the plant other than to reduce power for the duration of Cycle 17. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not adversely affect the method of operation of the steam generators nor introduce any changes to existing design functions of systems, structures or components that could create the possibility of a new or different kind of accident from any previously evaluated. Also, the proposed change will not introduce any significant changes to postulated accidents resulting from potential tube degradation. Because SONGS Unit 2 will operate at or below 70% Rated Thermal Power, the change will continue to ensure that tube integrity is demonstrated over the range of power levels at which the plant will operate. Therefore, there is no significant increase in the probability that the tubes will fail or leak during the period.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change to reduce the power level during SONGS Unit 2, Cycle 17, will not reduce any margins of safety.

The effect of operation at 70% Rated Thermal Power does not result in SONGS Unit 2 being operated outside of any currently allowable regulatory or licensing limits. SONGS Unit 2 will operate within its current design and licensing basis. Therefore, this change has no significant impact on any parameter that would affect a design basis limit for a fission product barrier, and there would be no significant impact on any margin of safety associated with such barriers.

The proposed changes will maintain consistency between the power level for the steam generator operational assessments in Technical Specification 5.5.2.11 and the maximum power level specified in License Condition 2.C(1). The tube performance criteria, including the margins of safety specified in Technical Specification 5.5.2.11 are not being changed. The changes will ensure that tube

integrity is demonstrated against the unchanged performance criteria over the range of power levels at which the plant will be licensed to operate.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, SCE concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(1) Letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263)

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(3) Letter from Mr. Richard J. St Onge to NRC, dated January 18, 2013, Response to Request for Additional Information (RAI 12) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13022A408)

(4) Letter from Mr. Richard J. St Onge to NRC, dated April 2, 2013, Response to Request for Additional Information (RAI 13), Revision 1, Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2

(5) Letter from Mr. Richard J. St Onge to NRC, dated January 29, 2013, Response to Request for Additional Information (RAI 14) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13032A009)

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) 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

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component, the steam generators, located within the restricted area, as defined in 10 CFR 20. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.

6.0 REFERENCES

6.1. Letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter - Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2 (ML12285A263)

6.2. Letter from Mr. Elmo E. Collins (USNRC) to Mr. Peter T. Dietrich (SCE), dated March 27, 2012, Confirmatory Action Letter 4-12-001, San Onofre Nuclear Generating Station, Units 2 and 3, Commitments to Address Steam Generator Tube Degradation (ML12087A323)

6.3. Letter from Mr. Richard J. St Onge to NRC, dated March 14, 2013, Operational Assessment for 100% Power Case Regarding Confirmatory Action Letter Response, San Onofre Nuclear Generating Station, Unit 2 (ML13074A793)

6.4. Letter from Mr. Richard J. St Onge to NRC, dated April 2, 2013, Revised Response to Request for Additional Information (RAI 11), Revision 1, Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2

6.5. Letter from Mr. Richard J. St Onge to NRC, dated January 18, 2013, Response to Request for Additional Information (RAI 12) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13022A408)

6.6. Letter from Mr. Richard J. St Onge to NRC, dated April 2, 2013, Response to Request for Additional Information (RAI 13), Revision 1, Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2

6.7. Letter from Mr. Richard J. St Onge to NRC, dated January 29, 2013, Response to Request for Additional Information (RAI 14) Regarding Confirmatory Action Letter Response (TAC No. ME 9727), San Onofre Nuclear Generating Station, Unit 2 (ML13032A009)

Attachment 1

List of Regulatory Commitments

Commitment #	One-Time Only	Sustainable	Due Date
Submit and obtain NRC approval of a License Amendment Request for long term operation of Unit 2 beyond Cycle 17.	X		Prior to Mode 4 entry for Unit 2 Cycle 18 operation
For Unit 2 Cycle 17, provide the report required by Technical Specification 5.7.2.c.		X	Within 60 days after the initial entry into Mode 4 following completion of an inspection performed in accordance with the Specification 5.5.2.11, Steam Generator Program

Attachment 2

Existing Facility Operating Pages, Unit 2

(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;

(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;

(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) Maximum Power Level

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).

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 226, 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.

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.5 gpm per SG and 1 gpm through both SGs.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

(continued)

(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;

(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;

(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) Maximum Power Level

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).*

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. , 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.

*For the duration of Unit 2, Cycle 17, SCE is authorized to operate the facility at a reactor core power level not in excess of 70% of Rated Thermal Power (2406.6 megawatts thermal).

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.*

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.5 gpm per SG and 1 gpm through both SGs.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

*For the duration of Unit 2, Cycle 17, the terms "full range of normal operating conditions" and "normal steady state full power operation" shall be based upon the steam generators being operated under conditions associated with reactor core power levels up to 70% of Rated Thermal Power (2406.6 megawatts thermal). During Cycle 17, Unit 2 will not be operated above this power level.

(continued)

Attachment 4

Clean Facility Operating Pages, Unit 2

(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;

(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;

(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) Maximum Power Level

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).*

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. , 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.

*For the duration of Unit 2, Cycle 17, SCE is authorized to operate the facility at a reactor core power level not in excess of 70% of Rated Thermal Power (2406.6 megawatts thermal).

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.*

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.5 gpm per SG and 1 gpm through both SGs.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

*For the duration of Unit 2, Cycle 17, the terms "full range of normal operating conditions" and "normal steady state full power operation" shall be based upon the steam generators being operated under conditions associated with reactor core power levels up to 70% of Rated Thermal Power (2406.6 megawatts thermal). During Cycle 17, Unit 2 will not be operated above this power level.

(continued)