December 18, 2003

Mr. Harold B. Ray
Executive Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1 - AMENDMENT APPROVING SINGLE FAILURE PROOF USE OF MODIFIED TURBINE BUILDING GANTRY CRANE AND SUPPORT STRUCTURE AT A RATED CAPACITY OF 105 TONS (TAC. NO. L52098 AND MC0199)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 162 to Facility Operating License No. DPR-13 for San Onofre Nuclear Generating Station, (SONGS) Unit 1. This amendment is in response to your application dated July 25, 2003, as supplemented by letters dated October 3, 2003, and December 3, 2003.

This amendment approves the use of the modified Unit 1 turbine gantry crane and turbine building support structure in a single failure proof application and at a rated capacity of 105 tons for handling of spent fuel casks as documented in the Defueled Safety Analysis Report (DSAR). The DSAR changes approved by this amendment are needed to permit use of the modified turbine gantry crane and turbine building support structure for lifting and handling of the spent fuel casks from the SONGS Unit 1 spent fuel pool to the Independent Spent Fuel Storage Installation (ISFSI). The DSAR changes document the licensing basis for the single failure proof qualification of the turbine gantry crane and includes a description of the specific modifications to the turbine gantry crane, modifications to the turbine building structure, installation of a single-failure-proof trolley on the gantry crane, analyses demonstrating acceptable loading during normal operation and design basis seismic events, and a description of controls applied to the handling of the spent fuel casks.

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

Sincerely,

/RA/

William C. Huffman, Project Manager
Section A
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 50-206
Enclosures: 1. Amendment No. 162 to DPR-13
2. Safety Evaluation

cc: See next page

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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. 162
License No. DPR-13

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 July 25, 2003, as supplemented by letters dated October 3, 2003, and December 3, 2003, 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 be maintained in conformity with the application, as amended, the provisions of the Act, and the applicable 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 applicable portions of 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 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by adding paragraph 2.C(10) to Facility Operating License No. DPR-13 which reads as follows:

2.C(10) Turbine Building Gantry Crane

The licensee is authorized to use the turbine building gantry crane in a single failure proof application at a rated capacity of 105 tons for handling of spent fuel casks in accordance with the licensee's application for amendment dated July 25, 2003, as supplemented by letters dated October 3, 2003, and December 3, 2003.

The licensee may make changes to information referenced above as documented in the Defueled Safety Analysis Report for San Onofre Nuclear Generating Station Unit 1 in accordance with 10 CFR 50.59.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Daniel M. Gillen, Chief
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Date of Issuance: December 18, 2003

SAFETY EVALUATION

RELATED TO AMENDMENT NO. 162 TO FACILITY OPERATING LICENSE NO. DPR-13

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1

DOCKET NO. 50-206

1.0 INTRODUCTION

By letter dated July 25, 2003, as supplemented by letters dated October 3, 2003, and December 3, 2003, Southern California Edison Company (the licensee) requested amendment to the licensing basis of the San Onofre Nuclear Generating Station (SONGS) Unit 1 Facility Operating License regarding the use of the SONGS Unit 1 turbine building gantry crane in support of spent fuel cask lifting and handling from the Unit 1 spent fuel pool to the SONGS Independent Spent Fuel Storage Installation (ISFSI). The licensee is making structural changes to the turbine building and gantry crane and replacing the turbine gantry crane trolley in preparation for using the crane in a single failure proof application at a rated capacity of 105 tons. With the planned modifications, the licensee will be able to satisfy the guidance of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and NUREG-0554. "Single-Failure Proof Cranes for Nuclear Power Plants," in utilizing the crane as necessary to support movement of Unit 1 spent fuel to dry cask storage.

The licensee has requested approval of a proposed revision to the Defueled Safety Analysis Report (DSAR) for SONGS Unit 1 that documents the licensing basis for the crane modifications and spent fuel cask handling. The DSAR changes document the single failure proof qualification of the turbine gantry crane including a description of the specific modifications to the turbine gantry crane, modifications to the turbine building structure, installation of a single-failure-proof trolley on the gantry crane, analyses demonstrating acceptable loading during normal operation and design basis seismic events, and a description of controls applied to the handling of the spent fuel casks.

The information provided in the supplemental letters clarified the previous application and did not expand the scope of the previous application as noticed, nor did it change the staff's previous proposed no significant hazards consideration determination as published in the *Federal Register* on September 18, 2003 (68 FR 54751).

2.0 BACKGROUND AND REGULATORY EVALUATION

Southern California Edison (SCE) permanently shut down SONGS Unit 1 in 1992 and maintained the facility in a safe storage condition until 1999. In 1999, SCE commenced active decommissioning work on Unit 1 and significant dismantlement has been accomplished to date.

The licensing basis for the permanently shutdown condition and decommissioning activities at SONGS Unit 1 are documented in the DSAR. The DSAR is required for decommissioning reactors under 10 CFR 50.71(f) and maintained in accordance with the guidance of Regulatory Guide 1.184, "Decommissioning of Nuclear Power Reactors." Licensees may make changes to their decommissioning facilities as documented in their DSARs provided that the changes comply with the provisions of 10 CFR 50.59.

SCE is currently preparing to move spent fuel stored in the Unit 1 spent fuel pool to an onsite ISFSI and will need to utilize an existing, but modified, turbine building gantry crane for lifting and handling of a heavy fuel transfer cask used to support spent fuel transfer operations. Use of the Unit 1 turbine gantry crane for this specific application was not considered in the original licensing basis of the facility. Therefore, SCE cannot utilize the modified crane under the provisions of 10 CFR 50.59 and has requested NRC amendment pursuant to 10 CFR 50.90 to approve the use of the modified turbine gantry crane as documented in a proposed revision to the DSAR.

General Design Criterion (GDC) 4, "Environmental and Dynamic Effects Design Bases," of Appendix A to 10 CFR Part 50 specifies, in part, that structures, systems, and components important to safety shall be appropriately protected against dynamic effects, including the effects of missiles, that may result from equipment failures. GDC 2, "Design Bases for Protection Against Natural Phenomena," specifies, in part, that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena, such as earthquakes. Section 9.1.5, "Overhead Heavy Load Handling Systems," of NUREG-0800, "NRC Standard Review Plan," references the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants," for implementation of these criteria in the design of overhead heavy load handling systems.

The basis for the guidelines in NUREG-0612 was to minimize the occurrence of the principal causes of load handling accidents and to provide an adequate level of defense-in-depth for handling of heavy loads near spent fuel and safe shutdown systems. Defense-in-depth is generally defined as a set of successive measures that reduce the probability of accidents and/or the consequences of such accidents. In the area of control of heavy loads, the emphasis is on measures that prevent load drops or other load handling accidents.

In NUREG-0612, the staff provided regulatory guidelines for control of heavy load lifts to assure safe handling of heavy loads in areas where a load drop could impact on stored spent fuel, fuel in the reactor core, or equipment that may be required to achieve safe shutdown or permit continued decay heat removal. In an unnumbered letter dated December 22, 1980, as supplemented by Generic Letter (GL) 81-07, "Control of Heavy Loads," dated February 3, 1981, the NRC requested that all licensees describe the extent to which the guidelines of NUREG-0612 were satisfied at their facility and what additional modifications would be necessary to fully satisfy the guidelines. This request was divided into two phases (Phase I and Phase II) for implementation by licensees. Phase I guidelines address measures for reducing the likelihood of dropping heavy loads and provide criteria for establishing safe load paths; procedures for load handling operations; training of crane operators; design, testing, inspection, and maintenance of cranes and lifting devices; and analyses of the impact of heavy load drops. Phase II guidelines address alternatives to either further reduce the probability of a load handling accident or mitigate the consequences of heavy load drops. These alternatives

include using a single-failure-proof crane for increased handling system reliability, employing electrical interlocks and mechanical stops for restricting crane travel to safe areas, or performing load drops and consequence analyses for assessing the impact of dropped loads on plant safety and operations. Criteria for design of single-failure-proof cranes were included in NUREG-0554. Appendix C to NUREG-0612 provided alternative criteria for upgrading the reliability of existing cranes to single-failure-proof standards.

In a letter dated August 26, 1983, the staff approved Ederer's Generic Licensing Topical Report EDR-1 (P)-A, "Ederer's Nuclear Safety Related eXtra-Safety And Monitoring (X-SAM) Cranes," Revision 3, dated October 8, 1982, as an acceptable method of meeting the guidelines of NUREG-0554 and NUREG-0612.

In GL 85-11, "Completion of Phase II of Control of Heavy Loads at Nuclear Power Plants, NUREG-0612," dated June 28, 1985, the NRC staff dismissed the need for the NRC to review the Phase II responses received from licensees, based on the improvements observed during review of the Phase I responses. However, GL 85-11 encouraged licensees to implement actions they perceived to be appropriate to provide adequate safety.

In NRC Bulletin 96-02, "Movement of Heavy Loads over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment," dated April 11, 1996, the staff addressed specific instances of heavy load handling concerns and requested licensees to provide specific information detailing their extent of compliance with the guidelines and their licensing basis.

The turbine gantry crane at SONGS Unit 1 was designed for a capacity of 115 tons and was rated for a capacity of 100 tons for normal plant operations. The gantry runway is located above three turbine building structures, the south extension, the turbine pedestal, and the north extension. The gantry crane has a center span of 40 feet and the bridge girders extend beyond the sides of the turbine building structure. This configuration allows the gantry crane to handle spent fuel casks within the spent fuel transfer pool and the cask decontamination area on the west side of the turbine building, transfer the spent fuel casks over the north extension of the turbine building, and handle the spent fuel casks over the cask transfer trailer on the east side of the turbine building.

The potential damage to spent fuel or safe shutdown systems resulting from a postulated drop of a spent fuel cask is limited to damage to the spent fuel. Since SONGS Unit 1 is permanently defueled, there are no systems essential for safe shutdown. The configuration of the gantry crane and the fuel storage building does not allow the crane to handle the spent fuel cask over the spent fuel storage pool. The transfer pool is separated from the spent fuel storage pool by the 3-foot thick concrete wall of the transfer pool. This wall ensures that potential damage to the transfer pool would not drain the storage pool to the extent that fuel could become uncovered because the wall is above the top of the stored fuel.

Damage to the spent fuel within the cask is a credible outcome of a postulated cask drop because the cask will be handled at heights greater than its design drop height of 80 inches and the cask will be handled in configurations other than the configuration evaluated for the 80-inch drop. Therefore, the licensee proposed a highly reliable handling system designed to single-failure-proof standards as specified in NUREG-0554 and NUREG-0612. The staff has accepted that the probability of a load drop from this type of handling system is sufficiently low that it provides adequate defense against the potential consequences of a load drop.

The licensee implemented the installation of a single-failure-proof Ederer X-SAM trolley and structural modifications to the turbine building structure and the turbine gantry crane under the authority of 10 CFR 50.59. Therefore, the conformance of specific features of these structures and components to NRC guidance is outside the scope of this safety evaluation. However, these features may be subject to inspection to verify that these structures and components are consistent with the information in the license amendment request and the acceptance criteria defined in applicable NRC guidance documents, including Ederer's Generic Licensing Topical Report EDR-1 (P)-A, Revision 3; the associated NRC safety evaluation; NUREG-0554; and Appendix C to NUREG-0612.

3.0 TECHNICAL EVALUATION

3.1 Control of Heavy Loads

The proposed changes to the DSAR describe an increase in the capacity of the turbine gantry crane from 100 tons to 105 tons, and a concurrent upgrade of the crane to a single-failure-proof design that satisfies the guidelines of NUREG-0612 and NUREG-0554. The upgraded crane will utilize a modified crane runway and box girder bridge assembly to support a new trolley. The trolley will house an Ederer X-SAM hoist, which is a single-failure-proof design. The increase in capacity is necessary to lift the spent fuel cask assembly planned for use at SONGS Unit 1. For a single-failure-proof crane, the guidelines of NUREG-0612 for control of heavy loads are satisfied without additional actions beyond implementation of the general measures specified in Section 5.1.1 of NUREG-0612 and the single-failure-proof handling system guidelines specified in Section 5.1.6 of NUREG-0612.

In the Attachment to the application dated July 25, 2003, SCE summarized how the objectives and general guidelines in Section 5.1.1 of NUREG-0612 would be satisfied following installation of the upgraded crane. The attachment presented proposed DSAR changes including implementation of the general guidelines with regard to: (1) establishment of safe load paths; (2) development of procedures; (3) training and qualification of crane operators; (4) selection of special lifting devices; (5) selection and use of slings; (6) inspection, testing and maintenance of cranes; and (7) application of standards to crane design. The staff compared these measures with the criteria in Section 5.1.1 of NUREG-0612 and found the measures acceptable.

Section 5.1.6 of NUREG-0612 refers to Appendix C, "Modification of Existing Cranes," for guidelines on implementing NUREG-0554 at facilities with existing cranes. Appendix C summarizes the guidelines of NUREG-0554 as follows:

(1) The allowable stress limits should be identified and be conservative enough to prevent permanent deformation of the individual load members when exposed to maximum load lifts.

(2) The minimum operating temperature of the crane should be determined from the toughness properties of the structural materials that are stressed by the lifting of the load.

(3) The crane should be capable of stopping and holding the load during a seismic event equal to the safe shutdown earthquake applicable to that facility.

(4) Automatic controls and limiting devices should be designed so that component or system malfunction will not prevent the crane from stopping and holding the load safely.

(5) Design of the wire rope reeving system should include dual wire ropes.

(6) Sensing devices should be included in the hoisting system to detect such items as overspeed, overload, and overtravel and cause the hoisting action to stop when the limits are exceeded.

(7) The reeving system should be designed against the destructive effects of "two-blocking."

(8) The hoisting drum(s) should be protected against dropping should its shafts or bearings fail.

(9) Safety devices such as limit switches provided to reduce the likelihood of a malfunction should be in addition to those normally provided for control of maloperation or operator error.

(10) The crane system should be given a cold proof test if material properties are not known.

The first and third guidelines address allowable stress limits and evaluation of stress under maximum load, including the effects of seismic events. The staff review of structural evaluations addressing these guidelines is contained in Section 3.2 of this safety evaluation.

The second and tenth guidelines address verification of material toughness for the crane structure. In supplemental information provided by letter dated December 3, 2003, SCE stated that the Unit 1 Gantry Crane will undergo a 125% "cold proof" load test at completion of all structural modifications to the crane. The load test will be performed at a time when the ambient temperature is relatively cold, although likely to be well above 32°F. The ambient temperature at the time of load testing will be recorded and established as the minimum operating temperature of the crane for all spent fuel transfer cask lifts. Prior to conducting the cold proof load test, a visual inspection of critical structural locations of the gantry crane will be performed. Upon completion of load testing, these same locations will be inspected again to ensure that no structural damage or non-conformance with design requirements were introduced as a result of performing the load test. Inspections will be conducted by qualified and certified personnel in accordance with the San Onofre Quality Assurance Program. A record will be made of the inspection and testing results. These actions are consistent with the guidelines of Section 2.4 of NUREG-0554, and are acceptable.

The ninth guideline addresses safety features used to control load motion, including bridge and trolley motion limits. In supplemental information provided by letter dated December 3, 2002, SCE stated that safety devices are included in the handling system design to ensure that the X-SAM trolley and the gantry crane are located within the analyzed limits of the North Extension Structure. The gantry bridge design includes end of travel limit switches and mechanical end stops for the X-SAM trolley. Gantry crane movement in the north direction is restricted by an existing mechanical end stop at column line "A". Gantry movement in the south direction is

restricted by a seismic bumper attached above the equalizer pin which will impact with a support member on the seismic restraint structure. These stops and limit switches satisfy the guidelines of Section 5.2 of NUREG-0554, and are acceptable.

The remaining guidelines are specific to equipment associated with the crane trolley, such as the wire rope reeving system and control and sensing devices. Therefore, these items are outside the scope of this safety evaluation because the trolley was installed under the provisions of 10 CFR 50.59.

Section 5.1.6(1) of NUREG-0612 specifies guidelines for the special lifting devices used for cask handling. In the Attachment to the application dated July 25, 2003, SCE identified that the special lifting devices to be used for cask handling have been designed with twice the normal stress design factor as an alternative to a dual load path with the normal stress design factor of 5. This is consistent with NUREG-0612 guidelines, and is acceptable.

3.2 Evaluation of Structural Impacts

The licensee states that the SONGS Unit 1 design basis response spectra were used in the seismic analysis. The allowable stress limits are consistent with NUREG-0554 paragraph 2.5, and are maintained below yield strength to prevent permanent deformation of structural members when exposed to maximum load lifts during a design basis seismic event. The maximum interaction ratios (calculated stresses/allowable stress) for the pertinent locations are provided in Table 3.2-5 of the application, and the allowable stresses are in accordance with SONGS Unit 1 design criteria. Specifically these are 0.96 Sy for tensile and compressive stresses, where Sy is the yield strength at room temperature. The allowable stress-for-shear stress is 0.57Sy. Column and plate buckling are evaluated and allowable limits are based on American Institute of Steel Construction (AISC) and Crane Manufacturers Association of America (CMAA) requirements respectively. The staff finds the allowable stress limits acceptable because they are in conformance with accepted guidelines of pertinent codes and standards.

SONGS 1 is shutdown and undergoing decommissioning. Plant systems such as main steam piping are physically removed and only the turbine building's steel frame structure remains. In addition, NUREG-0554 states that the crane structure is only required to maintain structural integrity during a safe shutdown earthquake which is the SONGS 1 design basis seismic event. The licensee has also provided an assessment of the stresses resulting from an operating basis earthquake (OBE) in Reference 2. The results indicate compliance with the applicable allowable limits, with adequate margins.

The licensee developed a finite element model of the gantry crane and the supporting north end turbine building structure. The two models were dynamically coupled during the analysis. An initial analysis was performed to determine the maximum stresses in the various structural elements. Based on the results of this analysis, both the crane and the turbine building structures were structurally reinforced and modified to reduce the stress levels at the critical locations and bring them within allowable limits. A second finite element analysis was performed to verify that the stresses at all critical locations are within allowable limits.

The geometry used in the finite element analysis is in accordance with the design drawings after field inspection verified the as-built dimensions. The finite element mode utilized beam

elements to represent the gantry, concentrated masses to represent the trolley and live loads, and plate elements to represent the turbine deck. The crane cable is modeled as a spring with the approximate stiffness value that simulated the cable action. The modal response spectra analysis with 5% damping was used in accordance with Regulatory Guide 1.61. To achieve the coupling effect between the rails, and the wheels of the trolley and the gantry, seismic hold down restraints are designed and added in the vertical direction. The resulting reaction loads were used to assess the stress levels. Additionally, a detailed finite element analysis of the gantry was performed using the ANSYS computer code, to check local stresses and plate buckling within the gantry members. The live load effect is used to maximize the down load component, but discounted during upward movements to maximize the uplift load component. The analysis includes 14 hook and trolley positions, covering the complete load path, that the transfer cask will follow. In general, the GT STRUDL computer program was used for global stress analysis and the ANSYS program was used to perform local stress analysis.

The analysis methodology and design criteria for the turbine building are the same as those for the gantry crane discussed earlier. Analytical results for the turbine building member interaction ratios are provided in Table 3.6-1 of Reference 1. The methodology for evaluating the building used a coupled model approach of the building together with the turbine gantry crane. The analysis results are derived from the same model of the gantry to building coupled configuration. The SAP2000 computer program was used for global stress analysis. The staff finds the licensee's analytical methodology acceptable because the finite element computer programs used in the analytical modeling and analysis has been benchmarked, widely used and previously accepted by the staff for similar applications.

Gantry Crane Modifications

As stated earlier, the initial finite element analysis identified several structural deficiencies. Modifications were performed to reduce the stress levels at the over-stressed locations. These modifications included the following. The bridge box girder cross section was stiffened with wing plates stitch welded at each corner of the box girder section. The bridge to leg connection was strengthened with new vertical stiffener plates. Gantry leg member cross section was increased with new plates, which were added to the north and south side of the box section. The 135 pound trolley runway gantrex clip sets are reinforced by additional gantrex clip sets. Finally, a seismic bumper was installed above the east side of each gantry truck. The seismic bumper is approximately one and one-half feet long, extends one foot from the face of the gantry structure, and includes additional plate stiffening above each leg equalizer pin. All the gantry crane modifications are shown on Figure 3.2-19 of Reference 1. The gantry reinforcements resulted in acceptable stresses everywhere within the crane, as indicated in Table 3.2-5 of Reference 1, for the maximum gantry member stress interaction ratios.

Turbine Building Modifications

The turbine building consists of three individual structural systems, which surround the turbine pedestal. These are the turbine building north and south extensions and the west heater platform.

The turbine building north extension is a one-story structural steel frame building with a mezzanine. It has approximate plan dimensions of 40 feet by 50 feet with an 8-1/2 inch thick prestressed concrete slab, and a steel grating platform. The west side of the turbine building

north extension is adjacent to the fuel storage building. Doors in the east wall of the fuel storage building provide personnel and fuel shipment access to the spent fuel pool area from the turbine building north extension. Expansion joints are provided at the junctures between the turbine building north extension and other buildings, including the fuel storage building. These buildings are therefore isolated from the interaction loading effects during crane lifting and seismic events.

The North Extension Building is dynamically coupled with the gantry crane and needed to be structurally modified to qualify the building for a design basis seismic event with a loaded turbine gantry crane. The structural modifications included the addition of two columns, two brace members, connection upgrades, and seismic restraints. The seismic restraints provide overturning stability for the turbine gantry crane.

The turbine gantry crane runway is supported by the North Extension steel frame structure. The building stress deficiencies in the steel frame structure resulted in the addition of two new columns and braces below the crane girders

The North Extension Building Modifications are shown in Figure 3.6-1 of Reference 1. The finite element seismic analysis identified an uplift condition at the gantry runway. This condition required the addition of seismic restraints, which prevent the gantry wheels from rising above the gantry runway. The addition of seismic restraints required some additional modifications to the North Extension structure. These included the demolition of part of an existing prestressed slab modification to a gantry seismic bumper.

The north extension structural design is capable of adequately transferring design basis seismic stresses from the turbine gantry crane to the foundations with the gantry supporting a 105 ton load applied to the hook.

Based on the discussions above, the staff finds that the licensee's analyses demonstrate that the gantry crane operating with lifted loads and the turbine building structure will not be stressed beyond applicable allowable limits during normal operation and design basis seismic events. The staff has also reviewed the licensee's analytical methodology and allowable stress limits and finds that they are in conformance with accepted guidelines of applicable codes and standards.

3.3 Technical Conclusion

In consideration of preceding evaluations, the NRC staff finds that the proposed upgrade of the existing turbine gantry crane to a single-failure-proof design in accordance with the guidelines of NUREG-0612 with a rated capacity of 105 tons is acceptable. The staff finds that use of the proposed crane, with special lifting devices meeting the specified design criteria, will enable the licensee to handle spent fuel casks with a very low potential for damage to irradiated fuel stored in the spent fuel casks. The design and operating features of the crane essential to handling of the spent fuel casks consistent with NUREG-0612 guidelines are adequately described in the proposed revision to the DSAR and, therefore, the proposed DSAR revision is acceptable.

4.0 REFERENCES

1. Letter dated July 25, 2003, from Southern California Edison to NRC requesting amendment to facility license, DPR-13, San Onofre Unit 1 Amendment Application No. 219. Accession No.: ML032180325

2. Letter dated Oct. 3, 2003, from Southern California Edison to NRC relating to assessment of operating basis earthquake for the San Onofre Unit 1 turbine gantry crane modification. Accession No.: ML032810427

3. Letter dated December 3, 2003, from Southern California Edison to NRC relating to cold proof testing and crane stops for the San Onofre Unit 1 turbine gantry crane modification. Accession No.: ML033421354

4. NUREG-0612, Control of Heavy Loads at Nuclear Power Plants, dated July 1980

5. NUREG-0554, Single-Failure Proof Cranes for Nuclear Power Plants, dated May 1979

5.0 STATE CONSULTATION

In accordance with NRC regulations, the California State official was notified of the proposed issuance of the amendment. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The licensee's proposal involves the issuance of an amendment to the SONGS Unit 1 Facility Operating License pursuant to 10 CFR Part 50 which changes the requirements related to the use of a facility component (i.e., turbine building gantry crane) within the restricted area as defined in 10 CFR Part 20. The proposed amendment involves (i) no significant hazards consideration as documented in the Commission's *Federal Register* notice 68 FR 54751 dated September 18, 2003. There have been no public comments on the Commission's proposed no significant hazards consideration finding. The proposed amendment (ii) does not involve significant change in the types or significant increase in the amounts of any effluent that may be released offsite. Movement of the fuel from the spent fuel pool to the ISFSI using the modified turbine building gantry crane does not result in the generation of any radioactive effluents. The proposed amendment (iii) does not change the individual or cumulative occupational radiation exposure. Movement of the fuel using the turbine building gantry crane is similar to refueling during plant operation and will be performed using existing programs that keep doses ALARA and well within regulatory limits. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

The Commission 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) 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.

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Date: December 18, 2003