August 11, 1986

Docket Nos.: 50-361
and 50-362

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Mr. James C. Holcombe
Vice President - Power Supply
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Gentlemen:

Subject: Issuance of Amendment No. 51 to Facility Operating License NPF-10 and Amendment No. 40 to Facility Operating License NPF-15 San Onofre Nuclear Generating Station, Units 2 and 3

The Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 51 to Facility Operating License No. NPF-10 and Amendment No. 40 to Facility Operating License No. NPF-15 for the San Onofre Nuclear Generating Station, Units 2 and 3, located in San Diego County, California. The amendments revise Technical Specification 3/4.6.2.2, "Iodine Removal System, " to require the use of trisodium phosphate rather than NaOH to control the pH of the containment sump following containment spray actuation. The revised TS 3/4.6.2.2 is entitled "Recirculation Flow pH Control."

These amendments were requested by your letter of February 7, 1986, as supplemented by your letters dated March 10 and May 9, 1986, and are covered by Proposed Change Number PCN-210.

A copy of the Safety Evaluation supporting the amendments is also enclosed.

Sincerely,

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Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Enclosures:
1. Amendment No. 51 to NPF-10
2. Amendment No. 40 to NPF-15
3. Safety Evaluation

cc: See next page

PBD7	PBD7	OELD	DIR/PBD7
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8/8/86	6/13/86	6/20/86	8/11/86

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 51
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and The City of Anaheim, California (licensees) dated February 7, 1986, as supplemented by letters dated March 10 and May 9, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 set forth in 10 CFR Chapter I;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   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 changes to the Technical Specifications as indicated in the attachment to this amendment and Paragraph 2.C(2) of Facility Operating License No. NPF-10 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. 51, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The changes in the Technical Specifications are to become effective and be fully implemented on first entry into Mode 3 following installation of the TSP storage baskets. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during changeover shall be minimized.

4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Harry Rood

Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 11, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 51

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

Amendment Pages	Overleaf Pages
3/4 6-16	3/4 6-15
B 3/4 6-4	B 3/4 6-3

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that each spray pump starts automatically on a Safety Injection Actuation test signal.

4. Verifying that each containment spray header riser is filled with water to within 10 feet of the lowest spray ring.

c. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

CONTAINMENT SYSTEMS

RECIRCULATION FLOW PH CONTROL

LIMITING CONDITION FOR OPERATION

3.6.2.2 The recirculation flow pH control system shall be operable with a minimum of 15,400 lbs. (256 cu. ft.) of trisodium phosphate (w/12 hydrates), or equivalent, available in the storage racks in the containment.

APPLICABILITY: Modes 1, 2 and 3

ACTION:

With less than the required amount of trisodium phosphate available, restore the system to the correct amount within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The recirculation flow pH control system shall be demonstrated operable during each refueling outage by:

a. Visually verifying that the TSP storage racks have maintained their integrity and the TSP containers contain a minimum of 15,400 lbs. (256 cu. ft.) of TSP (w/12 hydrates) or equivalent.

b. Verifying that when a sample of less than 3.00 grams of trisodium phosphate (w/12 hydrates) or equivalent, selected at random from one of the storage racks inside of containment, is submerged, without agitation, in at least 1 litre of 120 ± 10 degrees-F borated demineralized water borated to at least 2482 ppm boron, allowed to stand for 4 hours, then decanted and mixed, the pH of the solution is greater than or equal to 7.0.

3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations. The design of the 8-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 L_a leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 RECIRCULATION FLOW PH CONTROL SYSTEM

The operability of the recirculation flow pH control system ensures that there is sufficient trisodium phosphate available in containment to guarantee a sump pH of $\geq$ 7.0 during the recirculation phase of a postulated LOCA. This pH level is required to minimize the potential for chloride stress corrosion of austenitic stainless steel. The specified amount of TSP will result in a recirculation phase pH of 7.2 assuming complete dissolution and maximum allowed boric acid concentrations from the borated water sources. Similarly, surveillance 4.6.2.2 will produce a pH of 7.2. The specified temperature of 120 ± 10 degrees-F for the surveillance is based is consistent with expected long term recirculation phase sump temperature reported in the FSAR.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere and is consistent with the requirements of GDC 54 through 57 of Appendix A to 10 CFR 50. Containment isolation within the time limits specified for those power operated isolation valves designed to close automatically upon a CIAS signal ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. Such valves are listed in Sections A and B of Table 3.6-1 and Surveillance requirements to verify OPERABILITY of these valves are explicitly stated in 4.6.3.1 thru 4.6.3.3. Check valves located inside containment are considered OPERABLE provided their leak rate is within limits when tested pursuant to 10 CFR 50 Appendix J.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the license for San Onofre Nuclear Generating Station, Unit 3 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and The City of Anaheim, California (licensees) dated February 7, 1986, as supplemented by letters dated March 10 and May 9, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 set forth in 10 CFR Chapter I;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   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 changes to the Technical Specifications as indicated in the attachment to this amendment and Paragraph 2.C(2) of Facility Operating License No. NPF-15 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. 40, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The changes in the Technical Specifications are to become effective and be fully implemented on first entry into Mode 3 following installation of the TSP storage baskets. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during changeover shall be minimized.

4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Harry Rood

Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 11, 1986

ATTACHMENT TO LICENSE AMENDMENT NO.

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

Amendment Pages	Overleaf Pages
3/4 6-17	3/4 6-18
B 3/4 6-4	B 3/4 6-3

RECIRCULATION FLOW - PH CONTROL

LIMITING CONDITION FOR OPERATION

3.6.2.2 The recirculation flow pH control system shall be operable with a minimum of 15,400 lbs. (256 cu. ft.) of trisodium phosphate (w/12 hydrates), or equivalent, available in the storage racks in the containment.

APPLICABILITY: Modes 1, 2 and 3

ACTION:

With less than the required amount of trisodium phosphate available, restore the system to the correct amount within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The recirculation flow pH control system shall be demonstrated operable during each refueling outage by:

a. Visually verifying that the TSP storage racks have maintained their integrity and the TSP containers contain a minimum of 15,400 lbs. (256 cu. ft.) of TSP (w/12 hydrates) or equivalent.

b. Verifying that when a sample of less than 3.00 grams of trisodium phosphate (w/12 hydrates) or equivalent, selected at random from one of the storage racks inside of containment, is submerged, without agitation, in at least 1 litre of 120 ± 10 degrees-F borated demineralized water borated to at least 2482 ppm boron, allowed to stand for 4 hours, then decanted and mixed, the pH of the solution is greater than or equal to 7.0.

LIMITING CONDITION FOR OPERATION

3.6.2.3 Two independent groups of containment cooling fans shall be OPERABLE with two fan systems to each group.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one group of the above required containment cooling fans inoperable and both containment spray systems OPERABLE, restore the inoperable group of cooling fans to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two groups of the above required containment cooling fans inoperable, and both containment spray systems OPERABLE, restore at least one group of cooling fans to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both above required groups of cooling fans to OPERABLE status within 7 days of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one group of the above required containment cooling fans inoperable and one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the inoperable group of containment cooling fans to OPERABLE status within 7 days of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 Each group of containment cooling fans shall be demonstrated OPERABLE:

a. At least once per 31 days by:

   1. Starting each fan group from the control room and verifying that each fan group operates for at least 15 minutes.

   2. Verifying a cooling water flow rate of greater than or equal to 2000 gpm to each cooler.

b. At least once per 18 months by verifying that each fan group starts automatically on a Containment Cooling Actuation test signal.

3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations. The design of the 8-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 L_a leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 RECIRCULATION FLOW PH CONTROL SYSTEM

The OPERABILITY of the recirculation flow pH control system ensures that there is sufficient trisodium phosphate available in containment to guarantee a sump pH of $\geq$ 7.0 during the recirculation phase of a postulated LOCA. This pH level is required to minimize the potential for chloride stress corrosion of austentitic stainless steel. The specified amount of TSP will result in a recirculation phase pH of 7.2 assuming complete dissolution and maximum allowed boric acid concentrations from the borated water sources. Similarly, surveillance 4.6.2.2 will produce a pH of 7.2. The specified temperature of 120 ± 10 degrees-F for the surveillance is based is consistent with expected long term recirculation phase sump temperature reported in the FSAR.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post-accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out-of-service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out-of-service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 51 TO NPF-10 AND AMENDMENT NO. 40 TO NPF-15

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL

DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

Southern California Edison Company (SCE), on behalf of itself and the other licenses, San Diego Gas and Electric Company, The City of Riverside California, and The City of Anaheim, California, has submitted several applications for license amendments for San Onofre Nuclear Generating Station, Units 2 and 3. One such request, Proposed Change PCN-210, is evaluated herein. This change would revise Technical Specifications (TS) 3.6.2.2 and 4.6.2.2. The proposed change would delete the existing requirement for the sodium hydroxide containment spray chemical additive tank and add a new requirement for trisodium phosphate post-accident sump pH control. The licensees stated that a new analysis utilizing recent changes in NRC methodology, combined with knowledge gained from recent studies on the behavior of iodine in the post-LOCA environment demonstrated that the deletion of the spray additive system and replacement with a sump pH control system does not significantly change the calculated offsite thyroid does. The pH control system provides satisfactory retention of iodine in the sump water. It also provides sufficient pH control to minimize chloride induced stress corrosion cracking of austenitic stainless steel components and prevents hydrogen generation from the corrosion of galvanized surfaces and surfaces coated with zinc-based paints. The staff's evaluation of the proposed change is given below.

2.0 SAFETY EVALUATION

A. System Modifications

By letters dated February 7, March 10 and May 9, 1986, the licensees provided information on the capabilities of the modified containment spray system and demonstrated that this modified system would meet applicable criteria.

The original containment spray system included a chemical additive tank containing 1456 gallons of 40 to 44 w/o sodium hydroxide solution. The main purpose of this additive system was to ensure that in the event of a LOCA, a sufficient amount of sodium hydroxide would be added to the containment spray to raise its pH to between 8 and 9 during the initial phase of the spray. The effects of the

increased pH levels were to increase iodine removal capability of the spray and to improve iodine retention in the sump. An additional function of the sodium hydroxide additive was to control pH in the sump during the long term recirculation phase in order to minimize the potential for chloride induced stress corrosion cracking of austenitic stainless steel components in essential shutdown systems and to prevent generation of hydrogen from corrosion of galvanized surfaces and surfaces coated with zinc-based paints in contact with the water. However, this sodium hydroxide additive system proved to be very burdensome and its maintenance required considerable effort on the part of plant personnel. The licensees decided, therefore, to abandon it in favor of a system where pH control of the sump water was accomplished by addition of trisodium phosphate. In its letter of March 10, 1986, the licensees provided an analysis demonstrating that the proposed changes will not significantly impact the original plant licensing design basis. The analysis includes determination of offsite thyroid doses for the modified system, iodine retention, and corrosion effects of the sump water.

(1) Offsite Thyroid Doses

The offsite thyroid doses were calculated using the Westinghouse TITAN computer code. Most of the input data to the code were taken from the FSAR for San Onofre 2 and 3, the Standard Review Plan and Regulatory Guide 1.109. In the calculations, several conservative assumptions were made including no credit for removal of elemental iodine by the containment spray. With these assumptions the licensees determined that the 0-2 hour thyroid dose at the exclusion area boundary was about 11 percent lower and the 0-30 day thyroid dose at the low population zone was six percent higher than the corresponding values determined previously for the containment spray system with sodium hydroxide additive. However, in both cases the doses were well below the 10 CFR 100 acceptance limits.

(2) pH Control of Sump Water

In the modified system, the pH of the sump water will be controlled after an accident (LOCA) by dissolved trisodium phosphate. A minimum of 15,400 lbs. of hydrated trisodium phosphate will be placed in racks in the containment sump. These racks will be suitably located in the sump to assure that the containment spray and safety injection water will dissolve most of the salt and form a solution with uniform concentration. The amount of trisodium phosphate in the racks will be periodically verified by visual inspection. The licensee calculated that with this amount of trisodium phosphate, a pH in the range of 7 to 7.5 could be maintained in the spray water. This pH range assures that the sump water will possess sufficient alkalinity to prevent chloride

induced stress corrosion cracking of austenitic steel, and at the same time will be low enough not to cause corrosion of aluminum. Also, this pH will assure that corrosion of galvanized surfaces and surfaces painted with zinc-based paints will be minimized, and the information of hydrogen in the containment will be impeded. The alkalinity of the sump water will also cause retention of iodine absorbed by the water. Further, the change from sodium hydroxide to trisodium phosphate will not affect the equipment exposed to the sump solution since the new environment will be more benign than the environment to which this equipment was exposed during its qualification tests. We have reviewed the above information presented by the licensee and find that it provides sufficient basis for acceptance of the proposed system modifications.

B. Technical Specification Change

The licensees have proposed revised technical specifications which reflect the above system modifications. In technical specfication 3.6.2.2 the previous requirement for a sodium hydroxide spray additive tank was deleted and a new requirement for a minimum of 15,400 lbs of hydrated trisodium phosphate in the containment sump was added. This requirement applies to plant operating modes 1, 2 and 3. In addition, the surveillance requirements of technical specification 4.6.2.2 were revised to include periodic visual inspection of the racks containing the trisodium phosphate and solubility analysis to assure that under post-accident conditions enough trisodium phosphate will be dissolved to produce a pH of greater than or equal to 7. We have reviewed these proposed revised technical specifications and find that they adequately control operation of the modified containment spray and sump pH control system.

C. Summary of Safety Evaluation

Based on the considerations discussed above, we conclude that the modifications to the San Onofre Units 2 and 3 post-accident fission product control system proposed by the licensees meet the requirements of General Design Criterion (GDC) 41 for providing a satisfactory means of post-LOCA containment atmosphere cleanup. We further conclude that the proposed revised technical specifications for surveillance of the trisodium phosphate meet the requirements of GDC 42 for inspection of the containment atmosphere cleanup systems. We, therefore, find the proposed deletion of the sodium hydroxide containment spray chemical additive tank and addition of a trisodium phosphate pH control system to be acceptable, as are the proposed technical specifications.

3.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Chief of the Radiological Health Branch, State Department of Health Services, State of California, of the proposed determination of no significant hazards consideration. No comments were received.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendments involve no significant increase in the amounts of any effluents that may be released offsite and that there is no significant increase in individual or cummulative occupation radiation exposure. The Commission has previously issued proposed findings that the amendments involve no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

The 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed changes are acceptable, and are hereby incorporated into the San Onofre 2 and 3 Technical Specifications.

Dated: August 11, 1986

ISSUANCE OF AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NPF-10
AND AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NPF-15
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

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