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11

12 UNITED STATES OF AMERICA  
13 NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD  
14

15 In the Matter of )  
16 SOUTHERN CALIFORNIA EDISON ) Docket No. 50-361 OL  
COMPANY, et al. )  
17 (San Onofre Nuclear )  
18 Generating Station Unit 2) )  
19

20 MEMORANDUM OF POINTS AND AUTHORITIES  
21 IN SUPPORT OF ALTERNATIVE MOTION FOR AN  
22 OPERATING LICENSE FOR  
23 FUEL LOADING AND LOW-POWER TESTING  
24  
25  
26

1 Southern California Edison Company, San Diego Gas  
2 and Electric Company, and the cities of Riverside and Anaheim  
3 ("Applicants") submit this memorandum of points and authori-  
4 ties in support of their alternative motion for an operating  
5 license for the San Onofre Nuclear Generating Station  
6 ("SONGS") Unit 2, for fuel loading and low-power testing.

7 As the Nuclear Regulatory Commission ("Commission")  
8 has recognized, due to the diversion of resources from  
9 licensing proceedings by the Commission's analysis of the TMI  
10 incident, construction of a number of power reactors will be  
11 completed prior to the issuance of operating licenses for  
12 full-power operations. SONGS Unit 2 is one of the reactors  
13 that will be delayed,<sup>1/</sup> particularly as a result of expansion  
14 of the contentions in this proceeding. Faced with this  
15 situation, the Commission has directed the Licensing Boards  
16 to reduce delays to the maximum extent possible. In  
17 particular, the Commission recently held that Licensing  
18 Boards should rule promptly on motions for fuel loading and  
19 low-power testing. In re Pacific Gas and Electric Co.

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21 \_\_\_\_\_  
22 <sup>1/</sup> The Commission has recognized that "for the first time  
23 the hearings on a number of operating license applications  
24 may not be concluded before construction is completed." 46  
25 Fed. Reg. 28534 (May 27, 1981). The Commission has further  
26 recognized that "If these proceedings are not concluded prior  
to the completion of construction, the cost of such delay  
could reach billions of dollars. The Commission will seek to  
avoid or reduce such delays whenever measures are available  
that do not compromise the Commission's fundamental  
commitment to a fair and thorough hearing process." Id.

1 (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-5,  
2 CCH 130,581 (April 1, 1981) ("In re Pacific Gas and Electric  
3 Co."). Applicants' Unit 2 will be ready for fuel loading and  
4 low-power testing by October 15, 1981. Any delay in  
5 commencement of low-power testing of Unit 2 will mean  
6 substantial unnecessary and additional expenses to  
7 Applicants' ratepayers.

8 Low-power testing will not prejudice intervenors  
9 with respect to any of their contentions in this matter.  
10 Such testing will involve operation of SONGS Unit 2 at an  
11 average output of only 1% of full thermal power, with  
12 temporary periods of operation at up to 5% of full thermal  
13 power. Operation of Unit 2 at such levels will not make  
14 possible any serious accident that would require use of the  
15 emergency response plan contested by intervenors. Seismic  
16 questions will be resolved prior to the issuance of the  
17 requested license. In addition, due to the lack of  
18 significantly irradiated fuel, even in the event of a serious  
19 accident, radioactive material inventories will pose a  
20 substantially diminished risk. Issuance of a license for  
21 fuel loading and low-power testing will serve the public  
22 interest and reduce delays without limiting the rights of  
23 intervenors to pursue their contentions or affecting public  
24 health or safety.

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1 I. THE REQUIREMENTS FOR ISSUANCE OF AN  
2 OPERATING LICENSE AUTHORIZING FUEL  
3 LOADING AND LOW-POWER TESTING ARE  
4 SATISFIED IN THIS CASE.

5 This Board is authorized to issue an operating  
6 license for fuel loading and low-power testing if (1) such  
7 issuance will not prejudice intervenors with respect to  
8 contentions that have been admitted into this proceeding, (2)  
9 all required findings under 10 C.F.R. §50.57(a) can be made  
10 with respect to contested issues and by the Director of  
11 Nuclear Reactor Regulation with respect to uncontested  
12 issues, and (3) those TMI-related requirements in NUREG-0737  
13 relating to fuel loading and low-power testing have been  
14 met. 10 C.F.R. §50.57(a), (c).<sup>2/</sup> As outlined below, each of  
15 these prerequisites to issuance of the requested license are  
16 satisfied in this case.

17 <sup>2/</sup> 10 C.F.R. §50.57(c) provides in relevant part that:

18 An applicant may, in a case where a hearing is held  
19 in connection with a pending proceeding under this  
20 section make a motion in writing, pursuant to this  
21 paragraph (c), for an operating license authorizing  
22 low-power testing (operation at not more than 1% of  
23 full power for the purpose of testing the facility)  
24 and further operations short of full-power  
25 operation. Action on such a motion by the  
26 presiding officer shall be taken with due regard to  
the rights of the parties to the proceedings,  
including the right of any party to be heard to the  
extent that his contentions are relevant to the  
activity to be authorized. Prior to taking any  
action on such a motion which any party opposes,  
the presiding officer shall make findings on the

(footnote continued on next page)

1                   A.   Intervenors Will Not Be Prejudiced  
2                   With Respect to Any of the  
3                   Contentions Admitted in This  
4                   Proceeding.

5                   Section 50.57(c) authorizes consideration, in a  
6                   hearing on a low-power testing application, of those  
7                   contentions which have been presented by intervenors in the  
8                   operating license proceeding, which are related to the  
9                   authorization of low-power testing. In the context of this  
10                   motion, therefore, contentions in the proceeding can be

11                   \_\_\_\_\_

12                   (footnote continued from previous page)

13                   matters specified in paragraph (a) of this section  
14                   as to which there is a controversy, in the form of  
15                   an initial decision with respect to the contested  
16                   activity sought to be authorized. The Director of  
17                   Nuclear Reactor Regulation will make findings on  
18                   all other matters specified in paragraph (a) of  
19                   this section.

20                   The subparagraph (a) findings are as follows:

21                   (1) Construction of the facility has been  
22                   substantially completed, in conformity with the  
23                   construction permit and the application as amended,  
24                   the provisions of the Act, and the rules and  
25                   regulations of the Commission; and

26                   (2) The facility will operate in conformity  
                 with the application as amended, the provisions of  
                 the Act, and the rules and regulations of the  
                 Commission; and

                 (3) There is reasonable assurance (i) that  
                 the activities authorized by the operating license  
                 can be conducted without endangering the health and  
                 safety of the public and (ii) that such activities  
                 will be conducted in compliance with the  
                 regulations in this chapter; and

                 (footnote continued on next page)

1 resolved either (1) through a determination that those  
2 contentions have been satisfied for the purpose of the  
3 proceedings as a whole, (2) on the limited basis that the  
4 contentions are not relevant to low-power operations, or  
5 (3) through a finding that the contentions have been  
6 satisfied to the extent required prior to low-power  
7 operations.

8 The contentions in this proceeding fall into two  
9 general categories of seismic and emergency planning. With  
10 respect to the seismic contentions, Applicants propose that  
11 the record on seismic issues, developed in the first phase of  
12 hearings, form the basis for disposing, through a partial  
13 initial decision, the seismic contentions as they relate to  
14 both full and low-power operations.

15 Due to the addition of the Board's new emergency  
16 planning contention, the record on emergency planning may not  
17 be complete until well after the date on which Applicants  
18 will be prepared to load fuel and commence low-power  
19

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20 (footnote continued from previous page)

21 (4) The applicant is technically and  
22 financially qualified to engage in the activities  
23 authorized by the operating license in accordance  
24 with the regulations in this chapter; and

25 (5) The applicable provisions of Part 140 of  
26 this chapter have been satisfied; and

(6) The issuance of the license will not be  
inimical to the common defense and security or to  
the health and safety of the public.



1 testing. It is not necessary to delay issuance of the  
2 requested low-power license until final determination of the  
3 emergency planning issues, however, because the Commission  
4 has determined that submission of emergency response plans  
5 alone is sufficient to support a fuel load and low-power  
6 operating license. Final plan approval is not required  
7 until a full-power license is issued. This distinction is  
8 based upon the significantly lesser risks presented by  
9 low-power operations. Accordingly, this Board should find  
10 that the emergency planning contentions are not relevant to  
11 low-power testing, or have been satisfied to the extent  
12 required prior to low-power operations.

- 13 1. The Commission has Correctly  
14 Determined that a Fully  
15 Approved Emergency Response  
16 Plan is not Necessary for  
17 Low-Power Testing.

18 The Commission has determined that a fully approved  
19 emergency plan is only necessary for full-power operations.  
20 On April 22, 1981, the Commission unanimously issued a  
21 clarification to NUREG-0737, directly stating that emergency  
22 plans need not be demonstrated before fuel loading.

23 Memorandum from Samuel J. Chilk, Secretary, to William J.  
24 Dircks, Executive Director for Operations, dated April 22,  
25 1981, approving SECY-81-188, dated March 20, 1981  
26 ("SECY-81-188"), revising NUREG-0737 "Clarification of TMI  
Action Plan Requirements" November, 1980. A copy of  
SECY-81-188 is attached hereto as Exhibit A.

1           In its recent decision on a contested motion for  
2 low-power testing by Pacific Gas and Electric Company, the  
3 Board in that case followed the Commission's approval of  
4 SECY-81-188 in stating that "the conclusion is now inescap-  
5 able that the Commission clearly intends that full compliance  
6 with the 16 planning standards in NUREG-0654 and the provi-  
7 sions of Appendix E are not required for fuel loading and  
8 low-power testing . . . . Full compliance with Appendix E  
9 prior to fuel loading and low-power testing is not required."  
10 In re Pacific Gas and Electric Company (Diablo Canyon Nuclear  
11 Plant, Units 1 and 2), Docket Nos. 50-275-OL, 50-323-OL  
12 (Low-Power Test Proceeding), Partial Initial Decision,  
13 July 17, 1981 ("PG&E Low-Power Decision"), at page 23.

14           The Commission's approval of SECY-81-188 is  
15 consistent with the history and purpose of the emergency  
16 planning requirements. In response to the TMI incident, the  
17 Commission began a reevaluation of a broad range of safety  
18 issues. In connection with this effort, in June 1979, the  
19 Commission began formal reconsideration of the role of  
20 emergency planning in ensuring the continued protection of  
21 the public health and safety in areas around nuclear power  
22 facilities.<sup>3/</sup> In June 1980, the Commission issued

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23  
24 <sup>3/</sup> Because of other more pressing safety concerns, the  
25 initial NUREG-0578, "TMI-2 Lessons Learned Task Force Status  
26 Report and Short-Term Recommendations," dated July 1979, did  
not even directly address emergency response planning  
requirements.



1 NUREG-0694, entitled "TMI-Related Requirements for New  
2 Operating Licenses" which addressed the emergency response  
3 requirements for low-power and full-power operations. Under  
4 NUREG-0694, requirements in excess of those imposed on  
5 existing facilities were to be imposed at the low-power  
6 testing stage only

7 when there was a significant advantage to  
8 have the new procedure or equipment in place  
9 during fuel loading or power-ascension  
10 testing. As a general rule, however,  
11 implementation schedules for near-term  
12 operating license requirements were  
established with the intent of providing  
adequate safety improvement without incurring  
significant additional schedule and  
construction delays.

13 NUREG-0694 at p. 5. In order to obtain a low-power license  
14 under NUREG-0694, the Applicants were to:

15 Comply with Appendix E [as amended in 1973],  
16 'Emergency Facilities,' to 10 C.F.R. Part 50,  
Regulatory Guide 1.101, 'Emergency Planning  
17 for Nuclear Power Plants,' and for the offsite  
plans, meet essential elements of NUREG-75/111  
18 (Ref. 28) or have a favorable finding from  
FEMA.

19 NUREG-0694 at p. 19. Appendix E generally addresses only the  
20 submission of emergency response plans, and not the  
21 demonstration of those plans. 10 C.F.R. Part 50, Appendix E  
22 (1977). Under NUREG-0694, full demonstration of the offsite

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1 plan was not required until authorization of full-power  
2 operation.4/

3 On August 19, 1980, the Commission issued its final  
4 emergency planning regulations at 45 Fed. Reg. 55402. The  
5 regulations provide that:

6 No operating license for a nuclear power  
7 reactor will be issued unless a finding is  
8 made by NRC that the state of onsite and  
9 offsite emergency preparedness provides  
reasonable assurance that adequate protective  
measures can and will be taken in the event of  
a radiological emergency.

10 10 C.F.R. Section 50.47(a)(1)(emphasis added). The August 19  
11 regulations stated further that:

12 Failure to meet the standards set forth in  
13 paragraph (b) of this subsection may result

14 4/ The full-power testing requirements read as follows:

15 Provide an emergency response plan in substantial  
16 compliance with NUREG-0654, 'Criteria for  
17 Preparation and Evaluation of Radiological  
18 Emergency Response Plans and Preparedness in  
19 Support of Nuclear Power Plants' (which may be  
20 modified as a result of public comments solicited  
21 in early 1980) except that only a description of  
22 and completion schedule for the means for providing  
23 prompt notification to the population (App. 3), the  
24 staffing for emergencies in addition to that  
25 already required (Table B.1), and an upgraded  
26 meteorological program (App. 2) need be provided  
(Ref. 10). NRC will give substantial weight  
findings on offsite plans in judging the adequacy  
against NUREG-0654. Perform an emergency response  
exercise to test the integrated capability and a  
major portion of the basic elements existing within  
emergency preparedness plans and organizations.

This requirement shall be met before issuance of a  
full-power license.

NUREG-0694 at p. 25.

1 in the Commission declining to issue an  
2 Operating License; however, the applicant  
3 will have an opportunity to demonstrate to  
4 the satisfaction of the Commission that  
5 deficiencies in the plans are not significant  
6 for the plant in question, that adequate  
7 interim compensating actions have been or  
8 will be taken promptly, or that there are  
9 other compelling reasons to permit plant  
10 operation.

11 10 C.F.R. Section 50.47(c)(1)(emphasis added). Thus, the  
12 regulations clearly require individual tailoring of the  
13 emergency plan requirements to specific facility operations,  
14 including low-power testing.

15 On September 5, 1980, the Commission issued a  
16 preliminary clarification of the TMI Action Plan  
17 requirements, which retains the general requirements of  
18 NUREG-0694, including the distinction between low-power and  
19 full-power operations, and states that upgraded emergency  
20 preparedness will be implemented in two phases. According to  
21 the plan as clarified, compliance with 10 C.F.R. 50,  
22 Appendix E (submission of plans) is to be achieved before  
23 fuel loading; compliance with NUREG-0654 and conduct of the  
24 emergency response plan exercise is to be achieved only  
25 before full-power operations. "Letter to All Licensees of  
26 Operating Plants and Applicants for Operating Licenses and  
27 Holders of Construction Permits," Enclosure 2 at page 9,  
28 September 5, 1980.

29 On October 31, 1980, the Commission issued its  
30 final version of NUREG-0737, "Clarification of TMI Action

1 Plan Requirements." As clarified on April 22, 1981 by  
2 SECY 81-188, NUREG-0737 clearly states that demonstration of  
3 emergency plans is not required for fuel loading and  
4 low-power testing. See Exhibit A.

5 Applicants have submitted and substantially  
6 demonstrated their emergency plan and the requirements  
7 relating to emergency planning have accordingly been met.

8 2. Low-power Operation of SONGS 2  
9 Would Not Create a Risk to  
Public Health and Safety.

10 The Commission's determination that emergency  
11 response plans need not be finally approved prior to fuel  
12 loading and low-power testing is consistent with public  
13 health and safety concerns. Residual decay heat after  
14 low-power testing is substantially less than that resulting  
15 from full-power operations. Thus, worst case low-power core  
16 degradation scenarios are substantially slower than  
17 full-power scenarios. See PG&E Low-Power Decision at pages  
18 19-35. Radioisotope inventories in the core during low-power  
19 testing are also significantly lower, reducing substantially  
20 the potential for significant offsite releases. See  
21 SECY-81-188 at p. 2. Therefore, as the Commission has  
22 determined, final determination of the emergency planning  
23 issues is not necessary prior to issuance of a low-power  
24 license, and would only serve to delay licensing proceedings.

25 Because of the decreased potential risk of  
26 low-power operations, the evidence in this proceeding

1 relating to full-power operations includes that necessary for  
2 issuance of a low-power testing license. The Commission has  
3 stated that "10 C.F.R. 50.57(c) does not generally  
4 contemplate that a new evidentiary record, based on  
5 litigation of new contentions, would be compiled on the  
6 motion for fuel loading and low-power testing." In re  
7 Pacific Gas and Electric Company, supra.

8 3. Adequate Protective Measures  
9 Can and Will Be Taken in the  
10 Event of a Radiological  
Emergency During Low-Power  
Testing.

11 The implementation of Applicants' emergency  
12 response plan is now substantially complete as demonstrated  
13 by Applicants in the current hearings. The Federal Emergency  
14 Management Agency ("FEMA"), on the basis of a full-plan  
15 exercise, found that "State and local government radiological  
16 emergency response plans are minimally acceptable," but that  
17 the capability of State and local jurisdictions to implement  
18 those plans will not be "considered adequate," until  
19 "corrective actions have been taken." Interim Findings and  
20 Determinations Relating to the Status of State and Federal  
21 Emergency Preparedness for the San Onofre Nuclear Generating  
22 Station (Units 2 and 3), dated June 3, 1981. Implementation  
23 of final plan improvements to respond to FEMA's comments and  
24 criticisms is proceeding rapidly. There is now in place a  
25 substantial emergency response capability that will likely be  
26 found to meet all Commission requirements in the very near

1 future. The status of Applicants' emergency response plan  
2 goes far beyond that required for low-power operations.

3 Certain elements of Applicants' emergency response  
4 plan are unnecessary for low-power operations. For example,  
5 in the context of an extended accident sequence at low power,  
6 public notification within 15 minutes would be unnecessary.  
7 Moreover, the rigid chain of command requested by FEMA in  
8 order to produce such a short response time would not be  
9 applicable because ample time would be available for  
10 emergency decisions. Any deficiencies in the emergency plans  
11 are not significant for SONGS 2 in the context of low-power  
12 operations. 10 C.F.R. §50.47(c)(1), supra.

13 It is clear from the current status of Applicants'  
14 emergency response plan that adequate protective measures can  
15 and will be taken in the event of a radiological emergency  
16 during low-power testing at SONGS 2.

17 B. All Required Findings Under  
18 10 C.F.R. §50.57(a) and (c) Can Be  
19 Made in This Case.

20 This Licensing Board is to make findings under  
21 10 C.F.R. §50.57(a) and (c) with respect to those matters as  
22 to which there is a controversy in this proceeding. As  
23 discussed above, findings on the seismic contentions will be  
24 made with the benefit of a full hearing record. The  
25 Commission has determined that final emergency plan approval  
26 is not required prior to the issuance of an operating license  
for fuel loading and low-power testing.



1           As to those matters not in controversy, the  
2 Director of Nuclear Reactor Regulation is to make findings  
3 under 10 C.F.R. §50.57(a) and (c). See fn. 1, supra. Each  
4 of these findings can appropriately be made.

5           C.   The Requirements Contained in  
6                NUREG-0737 Have Been Met By  
7                Applicants.

8           On October 31, 1980, the Commission issued its  
9 final version of NUREG-0737, "Clarification of TMI Action  
10 Plan Requirements." In the absence of significant new  
11 TMI-related evidence indicating that an NRC safety regulation  
12 would be violated by plant operation, NUREG-0737 sets forth, inter  
13 alia, a listing of emergency preparedness requirements that must be  
14 considered in acting on a low-power license. In Re Pacific Gas and  
15 Electric Co., supra. These requirements (NUREG 0737, III.A.2) will  
16 have been met before low-power testing is undertaken.

17           II.   CONCLUSION

18           Applicants' Unit 2 will be ready for fuel loading  
19 and low-power testing by October 15, 1981. Any delay in  
20 commencement of low power testing of Unit 2 will mean  
21 substantial unnecessary and additional expenses to  
22 Applicants' ratepayers. Low-power testing will involve  
23 operation of SONGS Unit 2 at an average output of only 1% of  
24 full thermal power, with temporary periods of operation at 5%  
25 of full thermal power. Operation at such levels will not  
26 make possible any serious accident that would require use of  
a fully implemented emergency response plan. In addition,

1 due to the lack of significantly irradiated fuel, even in the  
2 event of a serious accident, radioactive material inventories  
3 and potential releases would be much less. A full record on  
4 the seismic issues raised by intervenors has been developed.  
5 All of the requirements contained in NUREG-0737 have been met  
6 and the findings required under 10 C.F.R. §50.57 relating to  
7 intervenor's contentions can appropriately be made by this  
8 Licensing Board.

9 Applicants accordingly request that the Licensing  
10 Board issue an operating license for fuel loading and  
11 low-power testing to permit the program described in  
12 Attachment 1 to Applicants' motion.

13 Dated: August 31, 1981

14 Respectfully submitted,

15 DAVID R. PIGOTT  
16 EDWARD B. ROGIN  
17 ALAN C. WALTNER  
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20  
21 by \_\_\_\_\_  
22 David R. Pigott  
23 Attorneys for Applicants  
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3 UNITED STATES OF AMERICA  
4 NUCLEAR REGULATORY COMMISSION  
5 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD  
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8 In the Matter of )  
9 SOUTHERN CALIFORNIA EDISON ) Docket No. 50-361 OL  
10 COMPANY, et al. )  
11 (San Onofre Nuclear ) ORDER (Proposed)  
12 Generating Station Unit 2) )  
13

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14 The Board finds that the filings in this  
15 proceeding, the depositions, the answers to interrogatories,  
16 and the evidence developed in hearings before this Board  
17 support the following findings:

18 1. As the result of ground motion analysis  
19 techniques developed subsequent to issuance of the  
20 construction permit or data gathered from earthquakes which  
21 occurred subsequent to issuance of the construction permit,  
22 the seismic design basis for SONGS 2 & 3 is not inadequate to  
23 protect the public health and safety.

24 2. Neither characterization of certain offshore  
25 geologic features as a zone of deformation; referred to as  
26 the Cristianitos Zone of Deformation ("CZD"), nor any

1 additional information about the CZD which became available  
2 subsequent to issuance of the construction permit render the  
3 seismic design basis for SONGS 2 & 3 inadequate to protect  
4 the public health and safety.

5 3. The seismic design basis for SONGS 2 & 3 is not  
6 inadequate to protect the public health and safety as a  
7 result of discoveries subsequent to issuance of the  
8 construction permit of the following geologic features:

9 (1) ABCD features at the site.

10 (2) Features located at Trail 6, Target  
11 Canyon, Dead Dog Canyon, Horno Canyon, and "onshore  
12 faults E and F".

13 (3) Such other features as the parties have  
14 agreed are relevant to the seismology of the SONGS  
15 site or with respect to which Intervenor Friends of  
16 the Earth has made a threshold showing of relevance.

17 4. Based on the geologic and seismic  
18 characteristics of the OZD, including its length, assignment  
19 of  $M_s 7$  as the maximum magnitude earthquake for the OZD does  
20 not render the seismic design basis for SONGS 2 & 3  
21 inadequate to protect the public health and safety.

22 5. Adequate emergency plans have been submitted  
23 which provide reasonable assurance that the transient and  
24 permanent populations within ten miles of the site can be  
25 evacuated in the event of a serious radiological emergency

26 ///

1 with off-site consequences occurring at SONGS 2 & 3 during  
2 fuel loading and low-power testing.

3 6. Adequate protective measures can and will be  
4 taken in the event of a radiological emergency during  
5 low-power testing.

6 The Director of Nuclear Reactor Regulation is  
7 hereby authorized to make findings with respect to the  
8 following uncontested issues:

9 (1) Construction of the facility has been  
10 substantially completed, in conformity with the  
11 construction permit and the application as amended,  
12 the provisions of the Act, and the rules and  
13 regulations of the Commission; and

14 (2) The facility will operate in conformity  
15 with the application as amended, the provisions of  
16 the Act, and the rules and regulations of the  
17 Commission; and

18 (3) There is reasonable assurance that such  
19 activities will be conducted in compliance with the  
20 regulations in this chapter; and

21 (4) The applicant is technically and  
22 financially qualified to engage in the activities  
23 authorized by the operating license in accordance  
24 with the regulations in this chapter; and

25 (5) The applicable provisions of Part 140 of  
26 this chapter have been satisfied; and

1 (6) The issuance of the license will not be  
2 inimical to the common defense and security.

3 Accordingly, Applicants' motion for an operating  
4 license for fuel loading and low-power testing under  
5 10 C.F.R. §50.57(c) is hereby GRANTED.

6 WHEREFORE, IT IS ORDERED in accordance with the  
7 Atomic Energy Act of 1954, as amended, and the Commission's  
8 regulations, and based on the findings and conclusions set  
9 forth herein, that the Director of Nuclear Reactor Regulation  
10 is authorized to issue a license, consistent with the terms  
11 of the Partial Initial Decision, to authorize fuel load and  
12 low-power testing up to 5% of rated power generally in the  
13 form submitted by Applicants in support of the motion.

14 THE ATOMIC SAFETY AND  
15 LICENSING BOARD  
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20 DATED: at \_\_\_\_\_  
21 this \_\_\_\_ day of \_\_\_\_\_, 1981.  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

ACTION : Stello

*Emergency Planning*  
Cys: Dircks  
Cornell  
Rehm  
✓ Grimes  
Perkins  
Denton  
Haller

April 22, 1981



MEMORANDUM FOR: William J. Dircks, Executive Director  
for Operations  
FROM: Samuel J. Chilk, Secretary *[Signature]*  
SUBJECT: SECY-81-188 - EMERGENCY PREPAREDNESS

This is to advise you that the Commission (with all Commissioners approving) has approved the changes to page 2-11 of NUREG-0737 as provided in Enclosure 3 of the subject paper.

The Office of Inspection and Enforcement was informed of this action by telephone on April 22, 1981.

cc: Chairman Hendrie  
Commissioner Gilinsky  
Commissioner Bradford  
Commissioner Ahearne  
Commission Staff Offices  
Director, Inspection and Enforcement

CONTACT:  
E. W. McGregor (SECY)  
41410

March 20, 1981



SECY-81-188

## POLICY ISSUE (Notation Vote)

For: The Commissioners  
From: William J. Dircks  
Executive Director for Operations  
Subject: EMERGENCY PREPAREDNESS

Background:

NUREG-0694, "TMI-Related Requirements for New Operating Licenses," stated that prior to fuel loading it was necessary to comply with the then effective Appendix E to 10 CFR Part 50, "Emergency Plans for Production and Utilization Facilities," Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants," and for offsite plans to meet the essential elements of NUREG-75/111 or have a favorable finding from FEMA. The submission and evaluation of emergency plans against the standards of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," was required prior to the issuance of a full power license. Copies of the appropriate pages from NUREG-0694 are attached as background information in Enclosure 1.

When NUREG-0737, "Clarification of TMI Action Plan Requirements," was being written, the timing for evaluation of offsite plans as set forth in NUREG-0654 was inadvertently changed to include those licensees requesting permission to conduct only fuel loading or low power testing. These changes appeared as entries on page 2-11 of a table to NUREG-0737 (Enclosure 2) as background information.

Discussion:

10 CFR § 50.47 became effective on November 3, 1980, and required compliance with emergency planning and preparedness standards prior to the issuance of operating licenses, including those authorizing fuel loading and low power testing. § 50.47(c) nevertheless provides a flexible approach for assessing the necessary

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degree of compliance, with the result that licensees requesting low power testing and fuel loading operating licenses can receive such licenses without having to meet every individual factor set forth in § 50.47, at least at that level of operation, provided that FEMA's findings support that approach. As discussed with the Commission prior to the issuance of NUREG-0694, it is unnecessary to require extensive offsite emergency capability at nuclear power plants where the licensee is performing either initial fuel loading or operating initially at low power levels because of the low potential for significant offsite releases.

In a parallel manner, 10 CFR § 50.57(c), governing adjudicatory hearings for the issuance of operating licenses, is specifically framed in terms of requiring Board findings only on those matters significant for the activity to be authorized. Thus, § 50.57(c) provides a basis for making a distinction between the Licensing Board findings necessary for issuance of full power operating licenses and those necessary for issuance of operating licenses authorizing low power testing or fuel loading.

A literal interpretation of the table in NUREG-0737 (Enclosure 2) could lead to a conclusion that the Commission intended to disregard the flexible, case-by-case approach expressly provided for in §§ 50.47(c) and 50.57(c), and to require that licensees comply with every facet of emergency planning contained in § 50.47 as prerequisite to the issuance of every operating license, even those where the activity sought to be authorized is fuel loading or low power testing. The staff did not intend, nor does it believe that the Commission intended, to interpret the table appearing in NUREG-0737 with respect to the effectiveness of 10 CFR § 50.47 so literally as to eliminate the flexibility provided by 10 CFR §§ 50.47(c) and 50.57(c). Consequently, the staff proposes that the Commission approve the suggested changes to the table in NUREG-0737 (Enclosure 2) to clarify the differences between the emergency planning requirements contained in 10 CFR § 50.47 that must be met prior to full power authorizations versus those prerequisite for operating license authorizations only for fuel loading or low power testing.

Enclosure 2 contains page 2-11 as it appears in NUREG-0737 marked with the staff's recommended conforming changes. Enclosure 3 is the same page retyped as it would be issued. The staff believes it is important to issue this change promptly to serve as the basis for consideration of low power applications now in the hearing process.

Recommendation:

That the Commission approve the changes to page 2-11 of NUREG-0737 as provided in Enclosure 3.



William J. Dircks  
Executive Director for Operations

Enclosures:

1. NUREG-0694 Pages-Background Information
2. NUREG-0737 Marked Page 2-11
3. NUREG-0737 Final Page 2-11

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Monday, April 6, 1981.

Commission Staff Office comments, if any, should be submitted to the Commissioners "VL" March 30, 1981, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment the Commissioners and the Secretariat should be apprised of when comments may be expected.

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## II.K.3 FINAL RECOMMENDATIONS OF B&O TASK FORCE\*

- C.3.9\*\* For Westinghouse-designed reactors, modify the pressure integral derivative controller, if installed on the PORV, to eliminate spurious openings of the PORV.
- C.3.10 For Westinghouse-designed reactors, if the anticipatory reactor trip upon turbine trip is to be modified to be bypassed at power levels less than 50 percent, rather than below 10 percent as in current designs, demonstrate that the probability of a small-break LOCA resulting from a stuck-open PORV is not significantly changed by this modification.
- C.3.11 Demonstrate that the PORV installed in the plant has a failure rate equivalent to or less than the valves for which there is an operating history.
- C.3.12 For Westinghouse-designed reactors, confirm that there is an anticipatory reactor trip on turbine trip.

These requirements shall be met before fuel loading.

### III.A.1.1 UPGRADE EMERGENCY PREPAREDNESS

Comply with Appendix E, "Emergency Facilities," to 10 CFR Part 50, Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants," and for the offsite plans, meet essential elements of NUREG-75/111 (Ref. 28) or have a favorable finding from FEMA.

\*The B&O recommendations were not specifically delineated as to fuel-loading or full power requirements prior to the review of Sequoyah, North Anna 2, and Salem 2. The NRR staff is presently confirming compliance with these four items for these plants.

\*\*Table C.3 of the Action Plan lists the requirements derived from final recommendations of the B&O Task Force.

[ This requirement shall be met before fuel loading.

### III.A.1.2 UPGRADE EMERGENCY SUPPORT FACILITIES

Establish an interim onsite technical support center separate from, but close to, the control room for engineering and management support of reactor operations during an accident. The center shall be large enough for the necessary utility personnel and five NRC personnel, have direct display or callup of plant parameters, and dedicated communications with the control room, the emergency operations center, and the NRC. Provide a description of the permanent technical support center.

Establish an onsite operational support center, separate from but with communications to the control room for use by operations support personnel during an accident.

Designate a near-site emergency operations facility with communications with the plant to provide evaluation of radiation releases and coordination of all onsite and offsite activities during an accident.

These requirements shall be met before fuel loading. See NUREG-0578, Sections 2.2.2.b, 2.2.2.c (Ref. 4), and letters of September 27 (Ref. 23) and November 9, 1979 (Ref. 24) and April 25, 1980 (Ref. 29).

### III.D.3.3 INPLANT RADIATION MONITORING

Provide the equipment, training and procedures necessary to accurately determine the presence of airborne radioiodine in areas within the plant where plant personnel may be present during an accident.

This requirement shall be met before fuel loading. See NUREG-0578, Section 2.1.8c (Ref. 4), and letters of September 27 (Ref. 23) and November 9, 1979 (Ref. 24).



C.2.16 For B&W-designed reactors, evaluate the effect of reactor coolant pump damage and leakage following a small-break LOCA concurrent with a loss of offsite power that results in the loss of seal cooling. See letter of August 21, 1979 (Ref. 30).

These requirements shall be met before issuance of a full-power license.

#### II.K.3 FINAL RECOMMENDATIONS OF B&O TASK FORCE

C.3.3\* Assure that any failure of a PORV or safety valve to close will be reported to the NRC promptly. All challenges to the PORVs or safety valves should be documented in the annual report.

This requirement shall be met before issuance of a full-power license.

#### III.A.2.1 UPGRADE EMERGENCY PREPAREDNESS

Provide an emergency response plan in substantial compliance with NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (which may be modified as a result of public comments solicited in early 1980) except that only a description of and completion schedule for the means for providing prompt notification to the population (App. 3), the staffing for emergencies in addition to that already required (Table B.1), and an upgraded meteorological program (App. 2) need be provided (Ref. 10). NRC will give substantial weight findings on offsite plans in judging the adequacy against NUREG-0654. Perform an emergency response exercise to test the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.

This requirement shall be met before issuance of a full-power license.

\*Table C.3 of the Action Plan lists all of the recommendations of the B&O Task Force.

ENCLOSURE 2 (CONTINUED)

Clarification Item	Shortened Title	Description	Implementation Schedule	Plant Applicability	Requirements Issued	Clarification Issued	Tech Spec. Req.	Remarks
II.K.3	Final recommendations, B&O task force (continued)	c. New analyses	In accordance with review schedule	All	*	Encl. 3	No	
		31. Plant-specific analysis	1/1/83A	All	*	Encl. 3	No	
		44. Evaluate transients with single failure	1/1/81A	BWR	*	Encl. 3	As required	
		45. Manual depressurization	1/1/81A	BWR	*	Encl. 3	No	
		46. Michelson concerns	Fuel load	BWR	*	Encl. 3	No	
III.A.1.1	Emergency preparedness, short term	Short-term improvements	<del>Fuel load</del> <i>Complete.</i>	<del>All</del>	<del>8/19/80</del>	<del>NUREG-0654</del>	No	<del>Use NUREG-0654 until Rev. 1 issued (due 10/80).</del>
III.A.1.2	Upgrade emergency support facilities	1. Establish TSC, OSC, EOF (interim basis) 2. Design 3. Modifications	TBD TBD TBD	All TBD TBD	9/27/79 TBD TBD	11/9/79 TBD TBD	No TBD TBD	
III.A.2	Emergency preparedness	1. Upgrade emergency plans to App E, 10 CFR 50 2. Meteorological data	<del>Full power</del> <i>Full power</i>	All All	8/19/80 6/26/80	NUREG-0654 NUREG-0654	<i>Yes</i> <i>Yes</i>	
III.D.1.1	Primary coolant outside containment	Measure leak rates & establish program to keep leakage ALARA	Full power	All	3/27/79	11/9/79 Encl. 3	Yes	
III.D.3.3	Inplant I <sub>2</sub> radiation monitoring	1. Provide means to determine presence of radiiodine 2. Modifications to accurately measure radiiodine	Fuel load 1/1/81 or prior to licensing	All All	9/27/79 9/27/79	11/9/79 11/9/79 Encl. 3	Yes Yes	
III.D.3.4	Control-room habitability	1. Identify and evaluate potential hazards 2. Schedule for modifications 3. Modifications	Full power Full power Full power	All All All	6/26/80 6/26/80 6/26/80	Encl. 3 Encl. 3 Encl. 3	No No Yes	

<sup>a</sup>Four months before operating license is issued or 4 months before date indicated.

<sup>a</sup>Requirement formally issued by this letter.

## ENCLOSURE 2 (CONTINUED)

Clarification Item	Shortened Title	Description	Implementation Schedule	Plant Applicability	Requirements Issued	Clarification Issued	Tech Spec. Req.	Remarks
II.K.3	Final Recommendations, B&O task force (Continued)	c. New analyses	In accordance with review schedule	All	*	Encl. 3	No	
		31. Plant-specific analysis	1/1/03a	All	*	Encl. 3	No	
		44. Evaluate transients with single failure	1/1/01a	DWR	*	Encl. 3	As required	
		45. Manual depressurization	1/1/01a	DWR	*	Encl. 3	No	
		46. Michelson concerns	Fuel load	DWR	*	Encl. 3	No	
III.A.1.1	Emergency preparedness, short term	Short-term improvements	Complete				No	
III.A.1.2	Upgrade emergency support facilities	1. Establish TSC, OSC, EOF (Interim basis)	TBD	All	9/27/79	11/9/79	No	
		2. Design	TBD	TBD	TBD	TBD	TBD	
		3. Modifications	TBD	TBD	TBD	TBD	TBD	
III.A.2	Emergency preparedness	1. Upgrade emergency plans to App E, 10 CFR 50	Full power	All	8/19/00	NUREG-0654	Yes	
		2. Meteorological data	Full power	All	6/26/00	NUREG-0654	Yes	
III.D.1.1	Primary coolant outside containment	Measure leak rates & establish program to keep leakage ALARA	Full power	All	9/27/79	11/9/79 Encl. 3	Yes	
III.D.3.3	Inplant $I_2$ radiation monitoring	1. Provide means to determine presence of radiiodine	Fuel load	All	9/27/79	11/9/79 Encl. 3	Yes	
		2. Modifications to accurately measure radiiodine	1/1/01 or prior to licensing	All	9/27/79	11/9/79 Encl. 3	Yes	
III.D.3.4	Control-room habitability	1. Identify and evaluate potential hazards	Full power	All	6/26/00	Encl. 3	No	
		2. Schedule for modifications	Full power	All	6/26/00	Encl. 3	No	
		3. Modifications	Full power	All	6/26/00	Encl. 3	Yes	

Four months before operating license is issued or 4 months before date indicated.  
 \*Requirement formally issued by this letter.

## APPENDIX 1.

### TESTING PROGRAM SUMMARY

Granting of a low power license will allow four major test evolutions spanning approximately sixteen weeks to be performed. These evolutions are:

1. Fuel Loading,
2. Post Core Load Hot Functional Testing,
3. Initial Criticality and Low Power Physics Testing, and
4. Power escalation to five percent of full power.

Each of these testing stages is briefly discussed below.

#### Fuel Loading

During this activity each of two hundred and seventeen fuel assemblies is transferred from the Fuel Handling Building to the Containment Building, where it is inserted into a specified location in the reactor vessel. After all fuel assemblies have been loaded into the reactor, each assembly is video taped to confirm its location. This location is then verified to be correct by plant personnel.

Next, several reactor structural members are placed above the fuel and the reactor vessel head is installed and bolted in place. The total duration of the fuel loading activity from movement of the first fuel assembly to completion of the reactor vessel installation is expected to be four weeks.

#### Post Core Loading Hot Functional Testing

Following fuel loading an integrated plant test program, called Post Core Loading Hot Functional Testing, is performed. The primary purpose of this testing is to perform a verification of those parameters which can only be definitively measured with the fuel in place. During Hot Functional Testing, the reactor is taken from ambient conditions (approximately 90°F / 14.7 psia) to full operating temperature and pressure (approximately 545° / 2,250 psia) utilizing heat generated by pumps, heaters and other equipment but not by nuclear heat and then returned again to ambient. Typical tests which would be performed at this time include:

Reactor Coolant System (RCS) Flow Measurements,  
Flow Coastdown Measurements, Pressurizer Control  
Systems Tests, Control Rod Exercise Tests,

Control Rod Drop Time Tests, RCS Heat Loss Measurements, and RCS Inventory Measurements.

Testing is performed continuously during this period which is expected to take seven weeks.

#### Initial Criticality and Low Power-Physics Testing

Upon completion of Hot Functional Testing, the reactor is returned to approximately 260°F and 1,000 psia at which time the reactor is initially brought critical. Shortly thereafter, power is raised to approximately one tenth of one percent of full power. At this time nuclear physics are performed for three to four weeks. This activity is termed Low Power Physics Testing, and is performed at both reduced temperature (260°F) and at normal operating conditions (545°F / 2250 psia). Typical tests which would be performed at this time include:

- Differential Boron Worth Tests,
- Control Rod Worth Tests,
- Control Rod Symmetry Tests,
- Moderation Temperature coefficient Measurements,
- Dropped Rod Worth Tests,
- Ejected Rod Worth Tests; and
- RCS Chemistry and Radio-Chemistry Tests.

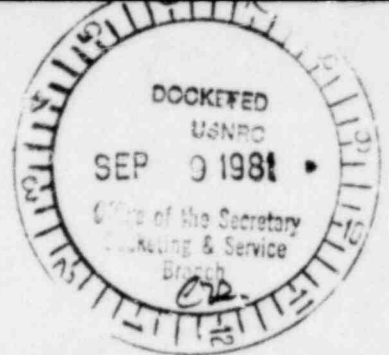
#### Power Escalation to 5% of Full Power

Following completion of Low Power Physics Testing, reactor power is gradually raised to five percent of full power. At this point the plant is stabilized and several equipment and instrumentation tests are performed. This activity is expected to last for one week.

In summary, the granting of a five percent power license would allow approximately sixteen weeks of testing activities to be performed. For an estimated eleven of these sixteen weeks the reactor would not be critical, and for only about one week would the plant be expected to be at a power level of greater than one percent of full power.



PROOF OF SERVICE BY MAIL



I declare that:

I am employed in the City and County of San Francisco, California.

I am over the age of eighteen years and not a party to the within entitled action; my business address is 600 Montgomery Street, 10th Floor, San Francisco, California 94111.

On September 2, 1981, I served the attached ALTERNATIVE MOTION OF APPLICANTS SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. FOR AN OPERATING LICENSE FOR FUEL LOADING AND LOW-POWER TESTING in said cause, by placing a true copy thereof enclosed in the United States mail at San Francisco, California addressed as follows:

James L. Kelley, Chairman  
Administrative Judge  
Atomic Safety and Licensing  
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U.S. Nuclear Regulatory  
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Washington, D.C. 20555

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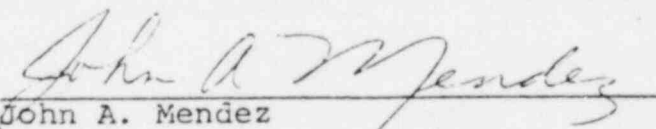
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