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SUBJECT: Forwards general & specific comments on DES. Assessment of environ impacts for severe accidents uses methodologies developed in WASH-1460 & NUREG-0440. Original Section 7 should be revised to agree w/supplemental data.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Project # DS-NRC-K06002-CA

Frank J. Miraglia, Acting Chief  
Licensing Branch No. 3  
Division of Licensing  
Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Miraglia:

The Environmental Protection Agency (EPA) has received and reviewed the Draft Supplement (DS) to the Draft Environmental Impact Statement (DEIS) for the project titled SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3.

In our previous reviews of environmental documents dealing with Light Water Reactors (LWR) EPA has consistently emphasized the need for a thorough evaluation of the environmental impacts from different LWR accident scenarios to include Class 9 accidents. The discussion of the environmental and societal impacts of a core melt down accident included in the Supplement to the Draft Environmental Impact Statement for the San Onofre Nuclear Generating Station, Units 2 and 3 is a step forward in this respect and, as a result, EPA applauds the Nuclear Regulatory Commission's (NRC) decision to prepare this Supplement.

The assessment of environmental impacts for severe accidents at the plant uses methodologies originally developed in the Reactor Safety Study (WASH-1460) and the Liquid Pathway Generic Study (NUREG-0440). Because these two studies will be the cornerstones for similar assessments for other nuclear power plants environmental statements, we would refer NRC to EPA's original technical comments on these studies. These comments can be found in "Reactor Safety Study (WASH-1400): A Review of the Final Report" and a letter from EPA's Office of Federal Activities to NRC dated February 8, 1977.

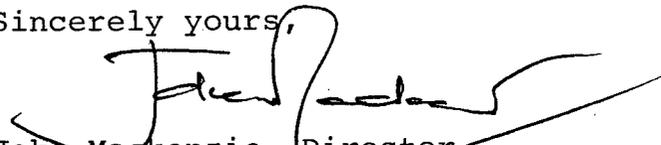
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Our specific comments on the San Onofre Supplemental DEIS and generic comments are attached. The EPA appreciates the opportunity to comment on this Draft Supplement. Should the NRC choose to revise other sections of the EIS, EPA would like to review these documents. If you have any questions regarding our comments, please contact Susan Sakaki, EIS Review Coordinator, at (415)556-7858.

Sincerely yours,



Jake Mackenzie, Director  
Surveillance and Analysis Division

Attachment

EPA Technical Comments on the Supplement to the Draft Environmental Statement Related to the Operation of the San Onofre Generating Station Units 2 and 3 (NUREG-0490)

General Comments

The Final EIS for San Onofre Units 2 and 3 is dated March 1973. This statement contains a Section 7, titled "Environmental Impact of Postulated Accidents." It is not clear if the Supplement is to replace the original information or if the Supplement is supplemental. If this information is supplemental then we would suggest that the original Section 7 be revised to agree with the supplemental statements and data.

It would also be hoped that any previous information and conclusions would be revised if it is impacted by events occurring since 1973 or by a change in Commission consideration. For instance the supplement refers to the original Section 5.5 and further mentions 10 CFR Part 20 and 10 CFR Part 50. However, the supplement does not make any mention of the Commission's implementation of 40 CFR 190 for normal operation.

Specific Comments

Table 7.1.4-4

This table should correspond on a one-to-one basis with the release categories (PWR 1-9) in Table 7.1.4-2. It is also not readily apparent how the PWR 1-9 compares to the original Table 7.1.

Design Basis Accidents

In the discussion of accident risk and impact assessment of Design Basis Accidents (DBAs), Section 7.1.4.1, we do not understand the intent of the comparison of the results in Table 7.1.4-1 to the Reactor Site Criteria of 10 CFR 100. First, the infrequent accidents listed in Table 7.1.4-1 do not meet the requirements of 10 CFR 100 for purposes of site analysis. Footnotes to 10 CFR 100 state:

(1)...calculations should be based upon a major accident, hypothesized for the purposes of site analysis...that would result in potential hazards not exceeded by those from any accident considered credible, and

(2)...this 25 rem whole body value and the 300 rem thyroid value have been set forth as reference values, which can be used in the evaluation of reactor sites

with respect to potential reactor accidents of exceedingly low probability of occurrence, and low risk of public exposure to radiation.

Secondly, by the description of infrequent accidents in the supplement ("events that might occur once during the lifetime of the plant"), these accidents have an annual probability of occurrences on the order of  $10^{-2}$ , are considered credible, and are not of exceedingly low probability of occurrence. Reference to 10 CFR 100 and its implementation provide a misleading inference that, since the results shown in Table 7.1.4-1 are within the dose values of 10 CFR 100, the risk of those infrequent accidents is small and therefore acceptable. Also, the radiation doses listed in Table 7.1.4-1 are calculated using a conservative model approach which is relevant to safety evaluations and not consistent with the realistic approach to the assessment of environmental risks of normal operation and severe core melt accidents.

The discussion of impacts of infrequent accidents and limiting faults, in both the original DES and the Supplement, addresses probabilities of occurrence qualitatively. Yet, in the discussion of the more severe core melt accidents the probabilities of occurrence are quantified (Table 7.1.4-2). For consistency in the presentation of all environmental risks, the probabilities of occurrence of infrequent accidents and limiting faults DBA's should also be provided.

It is not clear whether the risks listed in Table 7.1.4-5, Annual Average Values of Environmental Risks Due to Accidents, include those from infrequent accidents and limiting faults (Table 7.1.4-2), postulated accidents (Table 7.2 of the original DES), and accidents leading to the PWR 1-9 release categories (Table 7.1.4-2). The risks should include all those from moderate frequency accidents, infrequent accidents, limiting faults and severe core melt accidents. Although the risk of the infrequent accidents and limiting faults is "judged to be extremely small" and appear to be overshadowed by the risk from core melt accidents, they should be fully presented. The risks from the more probable yet lower consequence accidents may indeed be significant to the individual risk and should be listed in the Supplement. It would also be beneficial to extend Figures 7.1.4-3, 7.1.4-5, and 7.1.4-7 to include the higher probability accidents.

It would be helpful to provide a summary table of the annual average value of environmental risks from operation of all the reactors at the San Onofre site. The risks

should include all those from normal operations, moderate frequency accidents, infrequent accidents, limiting faults and severe core melt accidents. Both societal and individual risks should be presented.

#### 7.1.1.3 Health Effects

The statement that a dose greater than about 25 rem is necessary before any physiological effects to an individual are clinically detectable should be reviewed. Information contained in a World Health Organization technical report No. 123 would seem to indicate that physiological changes can occur at exposures as low as 10 rem.

#### 7.1.3.3 Emergency Preparedness

It is unclear what is the basis of the statement, "Emergency preparedness plans including protective action measures for the San Onofre facility and environs are in an advanced, but not yet fully completed stage." The plans (seven) are at this date undergoing informal review by the Region IX Regional Assistance Committee (RAC). Thus, there has been no request for formal review, there has been no drill schedule established and there has been no full scale exercise. We do not concur in the Commission's statement that these plans are in an advanced stage.

#### Table 7.1.4-5

It is not clear from the information presented regarding risk and protective action that protective actions can be taken to reduce exposures by 10-20 times or in fact to prevent exposures determined by the State of California to be unacceptable considering the following:

1. The emergency preparedness plans and protective action measures for the San Onofre facility are not yet complete.
2. The State of California does not use the EPA's Protective Action Guides (PAG's).

In view of the above, we feel the statements made are premature.

#### Figure 7.1.4-8

This figure, "Relative Directional Risk to Individuals," might be a useful risk analysis. However, as presented, the figure is illegible and lacking in background information. It should be presented more clearly, with an

accompanying table or coding explaining the significance of the numbers.

Decommissioning

The cost of reactor decommissioning and replacement power costs are as large as the costs from the Three Mile Island accident. It would seem that these costs could significantly change the cost-benefit information originally provided in Section 13. Future EIS's or Supplements to EIS's should include an evaluation of these costs.