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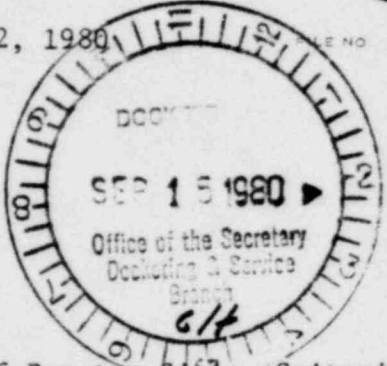
September 12, 1980

FILE NO. FEB 000

Mr. Samuel J. Chilk, Secretary  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attn: Docketing and Service Branch

Re: Advance Notice of Rulemaking: Revision of Reactor Siting Criteria



Dear Sir:

The San Diego Gas and Electric Company is pleased to respond to the Commission request for comments pertinent to its consideration of the adoption of modified or additional regulations concerning the siting of nuclear power reactors. SDG&E has a deep interest in these matters by virtue of its co-ownership of the San Onofre Nuclear Generating Station as well as its ownership of the Sundesert Nuclear Plant site. The latter represents one of the few sites in the Southwestern United States and the only new site in Southern California, qualified and approved by both State and Federal regulatory agencies for nuclear plant use.

Prior to undertaking the listing of specific responses to each of the items and questions posed by the Commission, we wish to point out to the Commission some areas of concern and some outright flaws in the work of the Siting Policy Task Force, as reported in NUREG-0625, since that work and the recommendations that stem from it play so pivotal a role in the Commission's planned action.

1. The Memorandum from R. B. Minogue to D. R. Muller, dated August 15, 1979 and reprinted in toto on pages 77 through 82 in NUREG-0625, articulates concerns that we also share, relative to the inadequacy of the report as a basis for immediate rulemaking. It cites inaccurate assessment and understanding of current siting policy and practice by the Task Force, and questions the basis for Task Force recommendations.
2. The Memorandum from N. M. Haller to D. R. Muller, dated August 14, 1979 (pages 75 and 76 of NUREG-0625) raises the same broad questions that we have relative to the definability of some of the words prominently and importantly made a part of the Task Force recommendations; e.g., base design, non-unique design, undue risk, minimum safety features, etc. Since these recommendations are posed as new siting criteria, the lack of quantitative definitions is a

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serious flaw, leaving too much to interpretation, with great potential for protracted litigation. The value-impact analysis recommended is a realistic and necessary first-step to establishing meaningful, quantitative criteria for a revised siting policy.

3. A careful reading of NUREG-0625 reveals a mind-set adopted by the Task Force that prejudices current siting practices. It is clear that the Task Force predetermined that current practice is inadequate, rather than first evaluating current practice to measure its adequacy. One is led to the conclusion that public perceptions, based upon inaccurate understanding, sensational treatment of nuclear-related news by the media, and deliberate distortions of fact by anti-nuclear propagandists, formed the underlying driving force for Task Force deliberations. Thus, the Task Force appears to have bowed to political expediency, rather than attempting to improve policy to achieve improved overall safety.
4. The previous point appears confirmed in the repeated reference, by the Task Force, to "unfavorable site characteristics" as described in 10CFR 100.10, when an accurate, non-pejorative reading of that regulation shows the following wording: "unfavorable physical characteristics." The Task Force applies its wording to non-physical characteristics in an attempt to legitimize its restrictive recommendations. Assuming a charitable explanation for such misinterpretation, NUREG-0625 recommendations should, as a minimum, be reviewed and rephrased more precisely to make certain that the appropriate site characteristics are identified and properly addressed.

#### Direct Responses per Request

Item A - the three Task Force "conceptual goals" are narrow presumptions (based on the mindset noted in "3", above) and if used as a basis for restructuring NRC siting policy will prove counterproductive and of short-lived value.

Goal 1: "to strengthen siting -- independent of plant design considerations." If carried to its ultimate impact, this goal would (a) diminish incentives for improving safety of plant designs and so, stultify development of desirable improvements in current reactor systems and (b) preclude the major advantages of advanced designs with great potential value for close-to-load-center siting. The High-Temperature Gas-Cooled Reactor (HTGR) promises significant advantages in achieving national energy goals. The Process Heat version, of great interest in synfuels and co-generation applications, retains the inherent safety advantages of the basic concept and is the more attractive when sited close to user industries.



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If Goal 1 is adhered to, the inherent design safety of the HTGR would be ignored and its application severely retarded.

As noted in the Minogue Memo (Item 3, Page 2), the Task Force assumption (viz., "the present policy--has tended to de-emphasize site isolation") is in error and thus, the goal based on that assumption is seriously flawed. Furthermore, the Task Force comments (Page 11 - NUREG-0625) relative to the increase in size of the current generation of reactors, as a justification for changes in siting policy, ignores the fact that containment building volumes and pressure - withstand capabilities have also increased commensurately.

The Task Force belief that "other types of reactors--must be examined on a case-by-case basis" (See Page 3 - Para. 2 of NUREG-0625) merely assures a never-ending need to re-evaluate site policy and a continuing increase in licensing delay due to undefined principles and criteria. We urge a basic definition of safety requirements, independent of the concept proposed, but bounded by quantitative criteria to be met by the facility as a whole; i.e., design and siting!

Goal 2: "To take into consideration--the risk associated with accidents beyond the design basis." The Task Force, with this goal, creates a Catch-22 situation. Since the "residual risk cannot be completely reduced to zero," one can never assure the public that adequate safety in the design has been achieved. Thus, improved designs can never be used as justification for less-than-the-remotest siting possible. Therefore, there is no incentive for an applicant to propose the safest-possible design!

The Task Force appears to have ignored the most basic lesson to be learned from the TMI-2 accident, viz. that it is not the Class 9, extremely low probability events that are the greatest risk. Rather, it is the progression of mundane minor deficiencies that is the more likely and, therefore, the source of greatest risk. The latter cannot be eliminated by siting decisions; they are the logical province of improved design (!) for which the Task Force would give no credit and so, no incentives. Such a course will lead to more TMI's, not less!

The Task Force views (in NUREG-0625) reflect a major pre-occupation with the fear of core-meltdowns and base-mat melt-throughs. These views, therefore, suggest that the Task Force is not acquainted with the results of the President's Commission's "Technical Staff Analysis Report on Alternative Event Sequences--the Accident at Three Mile Island" by William R. Stratton, et al, October, 1979. In discussing





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the potential consequences of a full-core melt on the containment base-mat, the analysis shows that "penetration of the base-mat is predicted to occur in no less than three days, but maybe never." Based upon proven population evacuation experiences, a period of three days is more than adequate to assure complete evacuation (if necessary) of even the largest metropolis. Hence, what is the justification for enhanced emphasis on remote siting for so-low-a-probability and so-slow-a-threat event? Clearly, the Task Force pre-occupation with Class 9 events is at best an attempt to mollify "public concern" rather than a stride toward enhancement of overall safety.

Goal 3: "To require that sites selected will minimize the risk from energy generation." Since the Task Force declines to provide quantitative criteria to help define "how safe is safe enough," this goal merely opens Pandora's Box wide and assures endless re-definition (by region and by application) and endless opportunity for arbitrary intervention, litigation and delay. This goal advocates siting of varying degrees of minimum risk (whatever that is) raising the question, by what right is the NRC permitted to expose some segments of the U.S. population to greater risk than others? Since there is no consensus on the risks that accompany other (non-nuclear) forms of generation, or even on the risk of insufficient energy generation, what yardsticks are to be provided to implement this goal? Also, since there is no consensus of the risks from high-voltage transmission lines, is the most remote site, requiring the longest transmission lines, truly the one of minimum overall risk?

This goal also fails to be of value, because it offers no mechanism for resolving the balance between the magnitude of assured hazards (risks) from non-nuclear generation relative to the magnitude of the potential risks of reactor accidents.

Additional Questions Relative to Item A:

1. Yes, the present policy of permitting plant-specific design features to compensate for less than ideal physical site characteristics should be continued. The ultimate goal is not to select perfect sites; it should be to assure safety of the public from the facility (site plus design).
2. Yes, considerations of acceptable risk to the public and the risks from other energy sources (and perhaps, even risks from other human activities or natural phenomena) should be included in reactor siting



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decisions. "Acceptable risk" determinations can only be of value when based on the public as a whole, since the value of the benefits are assessed on a population-wide basis. There is no method of quantifying the value of one "maximally exposed individual" relative to the overall risk (or benefit) to the population. If such value judgments are a prerequisite to rational siting policy (and I doubt that it is), the Commission must propose legislation by the Congress for the determination.

3. Site acceptability criteria should be nationally uniform, but tempered by safety features design; by no means would we support a rigid, mindless application of criteria, particularly when they may be unrelated to overall facility safety.

Item B - Alternative A: "fixed exclusion and protective action distance and distribution criteria." Task Force Recommendation 1 is flawed because it presumes that greater separation distances and reduced population density provide protection. They do not! They provide time; i.e., more time per person for evacuation! Siting adequacy determinations should be based on the time to evacuate (assuming a necessity to do so) relative to the time for the hazard to be created, regardless of demographic parameters. This is so because (a) variable meteorological conditions are probabilistically distributed and (b) an excellent transportation network capability should permit a greater population density, since the success of evacuation should be the fundamental consideration. Also, evacuation capability is amenable to quantitative expression, thus a truly valuable criterion, if based on quantitative dose limits and quantitative analysis of radioactivity release from the plant.

Similar siting policy should be applicable in regulating siting and transporting hazardous chemicals, fuels, etc. Radiation is not a unique hazard!

Item B - Alternative B: multiple "thresholds for each parameter." It is our position that these considerations will do no more than create a false sense of adequacy (among the regulators) while remaining wholly unconvincing to the antinuclear activists and fraught with uncertainty and imprecision for the utility applicants.

Additional Questions Relative to Item B:

1. No, a uniform, minimum exclusion distance for all reactors should not be established. No, distances should not be based on limiting individual risk from design basis accidents. The minimum exclusion distance should be based on the quantitative assessment of "time to



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evacuate" vs. "time to create hazard" as described above, with the distance set to assure that a nuclear facility poses no greater risk than those already accepted by the population at that location.

2. No, there should not be a single population density/distribution limit for the entire country. Such limits should recognize the risk/hazard characteristics of the locale (region?), not only demographic characteristics.
3. No, criteria should not be established to limit population densities during the life of the facility. When people cluster-in they are voting with their lives that the site is safe enough. They move into areas around airports, industrial plants, etc. They also buy property downstream of dam sites. Why single out nuclear facilities?
4. No, neither alternative is worthy of acceptance. The approach recommended is the population mobility (evacuation) vs. hazard creation time concept described above.
5. No, the graduated, regionally dependent approach is much too rigid. It creates the impression of a known magnitude of risk; also how would population growth be handled?
6. The Commission should reject the "three-tier" approach; it is "lip service" at best and would institutionalize siting difficulties far into the future.

Item C - Alternative A: "require consideration of potential hazards by establishing minimum stand-off distances" for man-made activities and natural characteristics of sites. We deem current siting practice adequate! Should the Commission desire to establish quantitative criteria to determine stand-off distances, we recommend that these be based on a quantitative assessment of current risk (i.e., pre-nuclear plant operation) and then, permitting no greater an increase than about 10% in the public risk with the nuclear facility so sited.

Alternative B: "two thresholds for each parameter." We reject this "three-tier" approach as being excessively arbitrary and open to excessive latitude of interpretation. The quantitative risk assessment and acceptable increment approach described above is far better in our opinion.

Additional Questions Relative to Item C:

1. An appropriate basis is described above and has the merit that the population would be provided a quantitative statement of their increased risk, based both on site characteristics and on the design proposed.





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2. All hazards considered should be analyzed to assure that a consistent level of stress is imposed on the design. If all potential loadings are adequately accommodated, the stand-off distance at which that balance is achieved should be adequate; no need for an arbitrary minimum.
3. As noted above, the capability of the design should be the determining factor in setting stand-off distances, each site and each application standing upon its own merits.

Item D - Task Force Recommendation 3: The Task Force again assumes simultaneous core-melting and containment base-mat melt-through. This is so far-fetched as to recommend rejection! The wording is particularly troublesome due to the lack of precision; e.g., what is "reasonable assurance"?, and to what level would one require a "limit (of) groundwater contamination"? Please refer to the TMI report by Stratton, et al and consider the OKLO experience with fission product migration.

We recommend against revising current siting policy and practice, since an increased risk to the public from this source has not been demonstrated.

Item E - Task Force Recommendation 4: re seismic hazards. We would suggest accelerating the time-table for the separate action contemplated by the Commission. Unless a firm and unchanging position is soon adopted, no utility will subject itself to the unending ratchetting of requirements and the lack of resolute support by NRC staff during licensing proceedings, thus assuring a moratorium on new applications.

Item F - Task Force Recommendation 5: "consideration of post-licensing changes in offsite activities." Here again, we reject this recommendation and urge retention of current practices. The thrust of this recommendation is to force the utility to acquire control of the social, economic and political forces extant during the life of the facility. There is no practicable method of achievement of such control. The Commission may inform local authorities, as is currently done, but if they permit influx of population or the siting of other adjacent (non-nuclear) facilities, they should be permitted to accept the consequences and perhaps to mitigate these via increased road-building to enhance population mobility for evacuation. The Task Force has again confused siting limitation due to physical site characteristics with that due to social characteristics; it ignores the acceptance of the risk by those who chose to settle near a facility of whatever technology!



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Additional Questions Relative to Item F:

1. No legislative authority should be given to the NRC. Such authority would constitute Federal encroachment upon local prerogatives.
2. The Commission is obligated to inform local authorities of the true (quantitative) increase in risk, but beyond this action, no other should be contemplated.
3. If the Commission reserves for itself the right to "require changes in operating procedures (including plant shutdown)--etc," it must invoke a mechanism for compensating plant owners for their loss. Otherwise, NRC action is tantamount to confiscation of property! The NRC could undertake to intervene in the permitting process for contemplated "changes in existing hazardous offsite activities," after a licensed plant is in operation. However, it would have to abide by the decisions of the local permitting authorities!

Item G - Alternative A: Task Force Recommendation 6: re site selection. This recommendation, as noted by the ACRS comment, is riddled with undefined and undefinable terms and so, would be virtually impossible to implement. Furthermore, the Task Force position would hinder development of safer designs by denying the incentives for such designs. The Task Force opinion "that an unquantified but overall improvement in reactor safety can be achieved by selecting sites with minimum unfavorable safety-related characteristics" is pure Motherhood! How can an overall improvement be demonstrated if it cannot be quantified?

Additional Questions Relative to Item G:

1. If all site characteristics meet the criteria, the site should always be approved. Otherwise, one compels the applicant to undertake an endless series of costly designs for (how many?) alternative sites.
2. If uncertainties are so nebulous that they cannot be quantitatively evaluated, how can one be certain they are real? How can they be evaluated if not quantifiable? Therefore, they obviously should not be considered in the site approval decision.
3. The ACRS-revised version of Recommendation 6 should be accepted.

Item H - Task Force Recommendation 7: re early site approval. We agree that early approval is desirable.





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Additional Questions Relative to Item H:

1. The licensing process should produce a binding approval for the site prior to granting an LWA, but never later than the granting of the Construction Permit.
2. Questions of site suitability should not allow reopening of the licensing process unless "there exists significantly and authoritatively substantiated new information." In all other circumstances, approval should be binding on the NRC and the NRC should defend the facility with the same vigor as the owner. If the NRC does not stand behind its license, of what value is it to the owner to seek such license?

Item I - Task Force Recommendation 8: re state agency disapproval. State agency disapproval of a proposed site should constitute a basis for NRC termination of site review only, if after thorough evaluation, the Commission concurs that the site is unsuitable; trumped-up, political posturing must not be grounds for termination of the process!

Additional Questions Relative to Item I:

1. Yes. The Commission should not permit itself to be intimidated by local politicians, nor should the Nation's efforts at energy independence be thwarted by inane opposition.
2. No. Energy needs transcend state boundaries.

Item J - Task Force Recommendation 9: re comparing all risks from external events on a common basis. We do not object to the search for firm quantitative bases for comparing risks. However, we are concerned that the NRC not involve itself in a marginal effort. What will the staff do with such studies when completed? Will they recommend a "weakening" of a design feature if over-designed and suggest a transfer of that "margin of safety" to some other feature? Unlikely!

We believe it would be far more fruitful if the staff were to better quantify the risks from other forms of generation. This would better serve the public by providing an unambiguous statement from an authoritative source. The public could then judge the merits of true risk, rather than being left to the confusion engendered by demagogic pronouncements.



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SDG&E sincerely trusts that these candid comments will prove useful to the Commission. Should you desire clarification of some of our constructive suggestions, feel free to contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads 'L. Bernath'.

L. Bernath  
Manager - Generation  
Engineering Department

LB:jlg