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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548



RESOURCES AND ECONOMIC
DEVELOPMENT DIVISION

OCT 22 1975

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Mr. Lee V. Gossick
Executive Director for Operations
Nuclear Regulatory Commission



Dear Mr. Gossick:

We have completed a review of the Nuclear Regulatory Commission's program for evaluating—as required by the National Environmental Policy Act of 1969—the environmental impacts of the construction and operation of nuclear powerplants. As a result of our work we have noted three matters which warrant your attention. These include the need to (1) emphasize to applicants that they should identify and evaluate only realistic sites for nuclear powerplants; (2) provide the Commission staff with guidance on the systematic verification of applicants' data; and (3) determine whether environmental monitoring requirements should be extended to certain powerplants under construction.

NEED TO EMPHASIZE THE IDENTIFICATION
AND EVALUATION OF REALISTIC SITES

In its environmental reviews, the Commission is responsible for independently evaluating reasonable alternatives before granting permits to construct nuclear powerplants. One of the most important alternatives is another site for a proposed plant.

The Commission's staff relies on applicants to identify and evaluate realistic sites for their proposed nuclear powerplants. The Commission has provided guidance to applicants in selecting realistic sites, including the identification of environmental factors which should be considered in evaluating sites. We reviewed 12 applicant environmental reports prepared after the guidance was issued. In these 12 reports applicants evaluated 43 alternative nuclear powerplant sites, ranging up to seven sites for one of the projects. For five of the 12 projects we also reviewed the Commission staff's draft environmental statements. The evaluations of alternative sites in the 12 environmental reports showed that some of them were unsuitable and should not have been considered realistic alternative sites, while apparently acceptable sites were rejected without additional evaluations being made in order to better judge their suitability.

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analyses, and stated that they check applicants' data against independent sources of information, if readily available. Staff members generally agreed that for certain critical evaluations they often must rely on the accuracy of the data provided by an applicant as it is the only information available.

Commission officials stated that they do not have the resources needed to independently perform the measurements needed to verify the reasonableness and reliability of all of the applicants' data. One official added that such an effort is not necessary since (1) other agencies—at the Federal, State, and local levels—receive copies of applicants' environmental reports and the Commission staff meets with State and local officials to discuss proposed projects; and (2) Commission staff members with expertise in various environmental-related disciplines exercise their professional judgement on the reasonableness of the data in applicants' environmental reports. However, the Commission staff does not systematically determine the scope of the work of reviewing agencies and, therefore, is not aware of what these agencies do in their reviews of applicants' environmental reports.

We believe that since there are differences of opinion on the need to verify applicants' data, there is a need for guidance on the importance of, and the degree to which, applicants' data critical to estimating environmental impacts should be systematically verified by the Commission staff to better enable it to independently evaluate such projects on a consistent basis.

NEED TO EXTEND ENVIRONMENTAL
MONITORING REQUIREMENTS SHOULD
BE DETERMINED

Construction of nuclear powerplants can require 6 or more years to complete. Effects on the environment occur throughout the construction phase. These effects occur before nuclear fuel is placed in the reactor; therefore radioactivity is not involved. Examples of the range of construction-related environmental impacts include erosion and siltation, which may cause long-term impacts on aquatic life; and the burning of construction debris, which may cause short-term impacts from atmospheric pollution.

Applicants are required to describe in their environmental reports their plans for monitoring and controlling these environmental impacts. Until January 1974 the Commission was not requiring licensees to implement these plans, nor were Commission inspectors determining if the plans were being implemented during construction.

We discussed this matter with Commission officials who agreed that some mechanism was needed to require licensees to implement their environmental protection plans and to establish a basis for enforcing such implementation.

There appeared to be sufficient environmental or economic penalties associated with 20 of the 43 alternative sites to warrant preference for the applicants' selected sites. Eight of these 20 alternative sites were described by either the Commission staff or the applicants as unsuitable for nuclear powerplants. Six of the eight sites had major safety-related deficiencies, such as proximity to actual or projected population zones or unavailability of sufficient quantities of cooling water, which would have obviously made them unrealistic from a safety standpoint. Of the other sites, one was not available to the applicant and the other had a major environmental deficiency. We do not believe that any time and effort should be spent in evaluating sites which do not warrant consideration as realistic sites.

The other 23 alternative sites were considered realistic alternatives, but were rejected for one of the following reasons:

- substantial investments in time and money had been made in the selected sites;
- alternative sites had significant disadvantages in at least one environmental, economic, or technological factor; or
- the selected site was owned by the applicant while alternative sites were not.

We question whether the above reasons adequately justified the elimination of these alternative sites from further consideration, particularly where they had not been studied in sufficient detail to determine whether the significant disadvantages could be offset. We believe that additional studies were needed to better judge the suitability of some of the sites.

NEED TO PROVIDE STAFF WITH
GUIDANCE FOR SYSTEMATIC
VERIFICATION OF APPLICANTS'

The Commission staff uses applicants' environmental reports as the basic data for evaluating the environmental impacts of proposed projects. Consequently, the applicants' data must be reasonable and reliable. The Commission staff, however, does not verify this data unless information is readily available from other sources. The extent of verification is left to the judgment of the Commission staff. A Commission official stated that guidelines on the verification of applicants' data had not been established.

There are differences of opinion among Commission staff members on the need to verify applicants' data. An environmental project manager told us that verification of data is not particularly important since applicants are required to certify to the validity of their environmental data. Other staff members emphasized the requirement for independent

In January 1974 Commission officials took action to make environmental protection activities enforceable on licensees by requiring that environmental statements include recommendations to the Commission's Atomic Safety and Licensing Boards that construction permits be conditioned to require licensees to implement their environmental protection plans. The Boards have been accepting these recommendations.

For construction permits requiring the implementation of environmental protection plans, the Commission requires its inspectors (1) to determine whether licensees' environmental protection plans have been implemented and are effective, and (2) to recommend enforcement actions where appropriate.

The revised procedures, however, were not applied to 55 projects which already had construction permits. Commission officials told us that the Commission's policy is to impose additional regulatory requirements only after the need to do so has been determined, and that it did not have adequate resources to inspect the 55 projects to determine whether the licensees were implementing their environmental protection plans. The officials said that licensees' construction permits will not be amended to make environmental protection activities enforceable unless these activities are inspected and found to be deficient.

As of June 30, 1975, 41 of these projects were still being constructed. These projects will not be inspected to determine if environmental protection activities have been implemented and such activities are effective in detecting and minimizing construction-related environmental impacts.

CONCLUSIONS

The Commission is required to perform an independent review of the environmental impacts of proposed nuclear powerplants. The Commission staff can improve these reviews by:

- emphasizing to applicants the need to identify and evaluate only realistic sites in selecting alternative sites and in choosing a preferred site from the alternatives; and
- systematically identifying and verifying those environmental data which are critical to the acceptability of applicants' proposed projects.

The actions taken by the Commission in January 1974 will enable it to routinely monitor and enforce licensees' implementation of environmental protection activities during the construction of those nuclear powerplants to which the revised procedures apply. However, the Commission's staff should (1) inspect the environmental protection programs of those licensees not presently covered by the revised procedures and (2) condition the construction permits of licensees not effectively implementing their environmental protection programs to make such implementation legally enforceable.

RECOMMENDATIONS

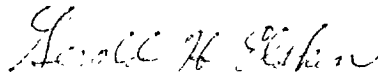
We recommend that you direct the Commission staff to:

- emphasize to applicants the need to identify and evaluate only realistic sites in selecting their preferred sites; and
- develop guidance for systematically identifying and verifying the environmental data which are critical to the acceptability of applicants' proposed projects.

We also recommend that the Commission inspect those projects not covered by the revised procedures for monitoring environmental protection activities to determine if the licensees have implemented these activities, and to periodically review such activities throughout the construction of the projects. Where appropriate, we recommend that the Commission amend construction permits to make such implementation enforceable, and to enforce such commitments.

We appreciate the courtesy and cooperation extended to our representatives during their work. We would like to be informed of any actions taken on our recommendations.

Sincerely yours,



Gerald H. Elsken
Assistant Director