



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

~~11633~~
110547

ENERGY AND MINERALS
DIVISION

OCTOBER 10, 1979

B-114858



110547

The Honorable Joseph M. Hendrie
Chairman, Nuclear Regulatory
Commission *AGC 00067*

Subject: Nuclear Construction Times for the Second
and Subsequent Plants at a Multi-Plant
Site are Overstated (EMD-80-01)

Dear Mr. Chairman:

The lengthening of construction times has significantly increased the costs of nuclear powerplants. Many cost analyses project further increases, based in part on these lengthening construction times. Cost escalation has reduced the economic attractiveness of nuclear powerplants, which in turn could affect Government and industry decisions concerning the long-term growth and desirability of nuclear energy. As a result, it is important that Government data accurately reflect the current actual construction times and trends in order to provide a correct basis for these analyses.

The "Construction Status Report" (NUREG 0030) is the official Government document on the status of nuclear construction. It indicates a continued lengthening of nuclear construction times beyond the 102 months averaged in 1978. In the course of a study on the future role of nuclear power, we found that the average construction time presented in NUREG overstates the actual length of construction for the second and subsequent plants at a multiple plant site. Our analysis of nuclear plant construction progress over the past 24 months indicates that the rate of nuclear plant construction, instead of slowing, has stabilized at around 90 months.

NUREG now measures construction duration from a point called "mobilization," which occurs prior to site preparation and commencement of structural construction, to the fuel load date. At sites with more than one plant, the start of mobilization and site

007212

(300400)

preparation is usually the same for all plants, even though the plants are not scheduled to reach their fuel load dates simultaneously. The construction is deliberately staggered, but the NUREG format does not take this into account in estimating construction time. Some "idle" time is charged to the second and subsequent plants, giving the appearance that the construction times of the second and subsequent plants have lengthened. Thus the apparent lengthening observed in nuclear plant construction durations estimated by NUREG is much larger than is actually the case. The overstatement will grow in the future because of the increasing number of multi-plant sites.

The precise extent of this overstatement of construction time is difficult to determine. However, a good indication of its extent can be obtained by subtracting the initial estimates for the intervals between fuel loading dates for the plants at the site from the actual construction time as reported by the NUREG. For example, if three plants began site mobilization at the same date, yet they were scheduled to achieve fuel loading at 1-year intervals, then the NUREG estimates of construction times would be 1 year too long for plant number 2 and 2 years too long for plant number 3.

We have ^{GAO} adjusted the NUREG estimate of construction duration through 1978 by applying the above methodology. A comparison between the NUREG trends and our adjusted trend is shown in enclosure 1. By correcting NUREG for the overstatement for multiple plants, our ^{GAO} trend indicates lower construction times and, at least for the past 2 years, a stabilization in construction at around 90 months.

Also, the gap between the average NUREG construction duration and our corrected duration widened in 1978. This happened because one of the three plants completed that year was the second plant at a multi-plant site. In 1977, one of four completed plants was the second plant. Because of the greater proportion of multiple plant sites in the upcoming years, we expect the difference between the estimated NUREG construction durations and our corrected durations will grow even larger.

RECOMMENDATION

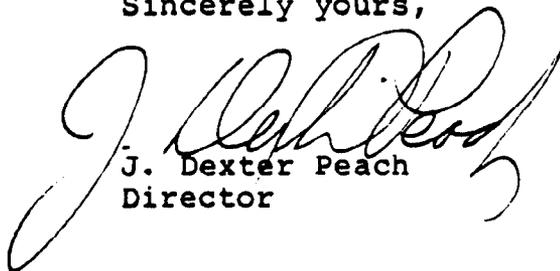
We believe that NUREG should present the construction duration in a format that corrects the overstatement. ~~To this end, we recommend that the NUREG presentation of construction times be reviewed and corrected to reflect more accurately the construction durations of second and subsequent plants at multi-plant sites. We have suggested one way to accomplish this. This will provide analysts in industry and Government with more accurate information on which to base decisions which are influenced by nuclear plant construction times.~~

- - - -

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement of actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report; a like statement to the House and Senate Committees on Appropriations should accompany the agency's first request for appropriations made more than 60 days after the date of the report.

Copies of this letter are being sent to the Secretary of Energy and selected congressional committees.

Sincerely yours,



J. Dexter Peach
Director

Enclosure

AVERAGE DURATION FOR NUCLEAR POWER PLANT CONSTRUCTION

