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Statement of
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Energy and Minerals Division
Before the
Subcommittee on Energy and Environment
House Committee on Interior and Insular Affairs
on
Quality Assurance in the Construction
of Nuclear Powerplants



Mr Chairman and Members of the Subcommittee

We welcome the opportunity to be here to discuss quality assurance in the construction of nuclear powerplants My statement today will address our earlier report to the Congress on the Nuclear Regulatory Commission's (NRC) nuclear powerplant construction inspection program and what NRC has told us it has done to implement the recommendations in that report 1/ The matters discussed in our report directly relate to the subject of today's hearing

At the outset, I would like to make two points about our earlier report First, the report was issued in September of 1978--more than 3 years ago Therefore, it only reflects our evaluation of NRC's construction inspection program as it existed at that time We have not conducted any subsequent evaluations of this program Second, we did not evaluate the effectiveness of utility construction or construction-related quality assurance programs Our report focused on the effectiveness of NRC's inspection program

Our report was an evaluation of these NRC inspection activities as they existed at that time We conducted our evaluation at NRC headquarters, its

1/"The Nuclear Regulatory Commission Needs to Aggressively Monitor and Independently Evaluate Nuclear Powerplant Construction," EMD-78-80, Sept 7, 1978

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5 regional offices, and at 7 construction sites. We also visited 6 nuclear component manufacturing plants and evaluated work previously performed by NRC inspectors at those plants. The thrust of our report findings were that

--NRC did little independent testing of construction work. Instead, it relied heavily on utilities' self-evaluations. Utilities however, relied on their construction contractors to identify and correct construction problems.

--NRC needed to improve its program for inspecting vendors of safety-related components and materials.

--NRC needed to improve its inspection and reporting practices.

NRC WAS NOT INDEPENDENTLY TESTING CONSTRUCTION QUALITY

Our evaluation revealed that NRC's inspectors (1) did little independent testing of construction work but relied heavily upon utilities' self evaluations, (2) spent little time observing construction work, and (3) did not communicate routinely with people who did the actual construction work.

NRC inspectors spent much of their onsite inspection time reviewing documentation and assessing utilities' audit reports to test the utilities' quality assurance programs--that is an audit of paperwork. Utilities, at the same time, relied heavily on their construction contractors to evaluate their own work and to identify poor construction practices, defects, or other irregularities. Utilities maintained only small quality assurance staffs to ensure that construction contractors properly documented all safety-related construction activities, and to audit these construction activities. Furthermore, construction contractors--not the utilities or NRC--normally decided what corrective actions were needed when construction problems were identified, performed the corrective actions, and reinspected and accepted the rework. Thus, quality assurance rested primarily with construction contractors, and only secondarily with licensees and NRC.

This problem was compounded by the fact that NRC inspectors spent only about 50 days per year at construction sites. The remainder of their time was spent performing off-site and in-office inspections, preparing inspection reports and other materials, preparing for inspections, traveling, and attending training. Further, of the time inspectors spent at sites, only about 4 days per year was spent observing tests by the utility or its contractors.

We also found that NRC was not requiring its inspectors to talk with construction craftsmen. Craftsmen we interviewed told us of many irregularities related to safety questions. They were reluctant, however, to initiate conversations with NRC inspectors for fear of reprisals from their employers. Also, most of them had not been trained in the importance of quality assurance which often led them to misunderstand the quality of work required of them.

We recommended that NRC provide a more thorough and independent evaluation of the quality of construction work by (1) increasing independent measurements and direct observations, (2) initiating private interviews with craftsmen, and (3) requiring utilities to train craftsmen in the principles of quality assurance.

NRC SHOULD IMPROVE ITS VENDOR INSPECTION PROGRAM

In 1974, NRC began a program to review the vendors who supply safety-related components for nuclear powerplants. This was after it had estimated that most nuclear powerplant construction and operation problems were traceable to vendor errors, and that utility companies were not properly inspecting these vendors. We found that this program was having a positive effect, but that it needed further improvement. For example, NRC had not identified all vendors of safety-related equipment, nor had it set up a systematic method of selecting these vendors for inspection. We concluded that NRC needed to do those things and to assign more inspectors to vendor inspections.

NRC'S INSPECTION AND REPORTING
PRACTICE NEEDED TO BE IMPROVED

We also found that NRC's inspection and reporting practices needed to be improved. In a number of cases, we found that inspectors did their work without proper attention to detail and did not always verify that utilities were correcting identified deficiencies. The inspection reports contained errors, lacked details about the scope of work performed, and did not have adequate supporting documentation. We recommended several changes to NRC's inspection performance and reporting practices aimed at correcting these weaknesses.

NRC'S RESPONSE TO OUR REPORT

NRC generally agreed with the thrust of our conclusions and recommendations. The Commission noted that its own evaluation of the inspection program identified essentially the same areas in need of improvement. NRC did not, however, fully agree with our conclusions and recommendations on the use of construction craftsmen interviews as an inspection technique, and the need to improve inspection documentation and reporting practices.

In many of the areas in which NRC generally agreed with our report, it has, according to NRC officials, taken actions consistent with our recommendations. In other of these areas, as well as those areas in which NRC disagreed with our report, NRC officials said they have not acted to implement our report recommendations. What disruptive impact the Three Mile Island Accident may have had on NRC's plans for further improving its inspection program we have not measured. One thing, however, is clear. The continuing problems with construction quality at many of the Nation's nuclear powerplants--the subject of today's hearing--clearly demonstrate the need for an effective regulatory program for inspecting powerplant construction.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to the Subcommittee's questions.