

JUN 13 1985

Dr. David Rossin, Director
Nuclear Safety Analysis Center
3412 Hillview Avenue
P.O. Box 10412
Palo Alto, California 94303

Dear Dr. Rossin:

SUBJECT: CASE STUDY REPORT, "SAFETY IMPLICATIONS ASSOCIATED WITH IN-PLANT PRESSURIZED GAS STORAGE AND DISTRIBUTION SYSTEMS IN NUCLEAR POWER PLANTS" (AEOD C501/NUREG/CR 3551, ORNL/NOAC 214)

Following resolution of peer review comments, our contractor (ORNL) has completed the enclosed subject report. The study evaluates the safety implications associated with the use of pressurized gases in nuclear power plants. The study considered the storage, handling and use of ten gases which are commonly used in nuclear power plants. The study identified potential safety hazards, and it provided recommendations to alleviate those hazards.

In performing the study, the contractor made site visits to several nuclear power plants to observe actual plant practices. The case study presents many observations that were made on those trips and highlights the fact that the handling, storage, distribution and use of pressurized gases at nuclear power plants are not necessarily carried out in a manner that meets commonly accepted industrial practices. The report presents instances in which NRC inspections found the use of pressurized gases differed from that which was discussed in the plants' FSARs or SERs.

The case study presents three major recommendations for improving the handling and use of pressurized gases in nuclear power plants. The recommendations address:

1. protection of safety related equipment from portable gas cylinders, (Section 10.1)
2. minimization of the potential for hydrogen explosions and/or fires affecting safety related equipment, (Section 10.2)
3. identification of pressurized gas lines and tanks. (Section 10.3)

As an update to the case study report, we have also enclosed excerpts from a recent IE inspection report. It provides the details of a violation which involved the improper storage of nitrogen bottles inside containment, which

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created a potential missile hazard. A nitrogen bottle was secured to the scram discharge instrument volume piping, thereby creating an unreviewed safety question.

As you may know, AEOD reports do not represent an official NRC position, or the position of the responsible NRC program office. The recommendations contained in the subject case study report are under review within the Nuclear Regulatory Commission. A copy of the report and this letter are being placed in the Public Document Room at 1717 H Street, NW Washington, DC 20555.

If you have any questions regarding the report, please contact Hal Ornstein of my staff at (301) 492-4439.

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C. J. Heltemes, Jr., Director
Office for Analysis and Evaluation
of Operational Data

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