



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 11 1985

MEMORANDUM FOR: Harold R. Denton, Director, NRR
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FROM: C. J. Heltemes, Jr., Director
Office for Analysis and Evaluation
of Operational Data

SUBJECT: TRENDS AND PATTERNS REPORT OF UNPLANNED REACTOR
TRIPS AT U.S. LIGHT WATER REACTORS IN 1984

Enclosed is a final report of a trends and patterns analysis of unplanned reactor trips (i.e., reactor scrams) that occurred in 1984 at U.S. nuclear power plants. In this analysis, reactor trips are defined as Reactor Protection System (RPS) actuations accompanied by control rod motion.

Based upon the evaluations and analysis described in this report, we have arrived at the following general observations with regard to reactor trips: (a) the reduction of hardware failures, primarily in balance of plant (BOP) systems, would significantly reduce the number of reactor trips; (b) there are a number of post trip recovery complications due to equipment failures and personnel errors unrelated to the original trip cause that have the potential for having significant safety implications; and (c) many reactor trips are being initiated by unlicensed personnel (approximately 50% of all reactor trips above 15% power caused by human error are traceable to activities by unlicensed personnel).

In addition to these general observations, the report contains a number of specific conclusions based upon the analysis of the 494 reactor trips which were identified in 1984. Overall, we observed a slight decline (9%) in the rate of automatic and manual reactor trips from 1983 to 1984.

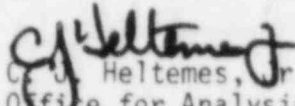
As part of this AEOD analysis of reactor trip experience, trip rates for plants in other countries were also collected and analyzed. Only rough comparisons are possible at this time due to the age and relative lack of documentation of foreign data. However, it appears that the average reactor trip rates for the countries examined (France, Japan, West Germany, Sweden) were below those for the U.S. reactor population of both BWRs and PWRs.

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We are placing a copy of this final report in the Public Document Room. If you have any questions regarding this matter, please feel free to contact me or Lawrence Bell of my staff. Mr. Bell can be reached on 492-9750.


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

Enclosure:
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See attached

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